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Carlsbad Field Office
OCD Hobbs

Form 3160-3
(March 2012)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

# APPLICATION FOR PERMIT TO DRILL OR REENTER

| | |
|---|---|
| 1a. Type of work: ☑ DRILL ☐ REENTER | 5. Lease Serial No. NMNM115426 |
| | 6. If Indian, Allotee or Tribe Name |
| | 7. If Unit or CA Agreement, Name and No. |
| 1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone | 8. Lease Name and Well No. (322263) DR IRELAND FED COM 214H |
| 2. Name of Operator MATADOR PRODUCTION COMPANY (228937) | 9. API Well No. 30-025-45147 |
| 3a. Address 5400 LBJ Freeway, Suite 1500 Dallas TX 752 | 3b. Phone No. (include area code) (972)371-5200 |
| | 10. Field and Pool, or Exploratory (2200) BONE SPRING |
| 4. Location of Well (Report location clearly and in accordance with any State requirements.*) At surface SESE / 257 FSL / 399 FEL / LAT 32.2835925 / LONG -103.3994762 At proposed prod. zone NENE / 240 FNL / 330 FEL / LAT 32.296711 / LONG -103.3992676 | 11. Sec., T. R. M. or Blk. and Survey or Area SEC 19 / T23S / R35E / NMP |
| 14. Distance in miles and direction from nearest town or post office* | 12. County or Parish LEA / 13. State NM |

| | | |
|---|---|---|
| 15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 570 feet | 16. No. of acres in lease 279.45 | 17. Spacing Unit dedicated to this well 319.89 |
| 18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 30 feet | 19. Proposed Depth 11750 feet / 16496 feet | 20. BLM/BIA Bond No. on file FED: NMB001079 |
| 21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3394 feet | 22. Approximate date work will start* 12/01/2018 | 23. Estimated duration 25 days |

## 24. Attachments

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

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

| | | |
|---|---|---|
| 25. Signature (Electronic Submission) | Name (Printed/Typed) Lara Thompson / Ph: (505)254-1115 | Date 03/30/2018 |
| Title Assistant Project Manager | | |
| Approved by (Signature) (Electronic Submission) | Name (Printed/Typed) Cody Layton / Ph: (575)234-5959 | Date 07/06/2018 |
| Title Assistant Field Manager Lands & Minerals | Office CARLSBAD | |

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

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

(Continued on page 2)

*(Instructions on page 2)

Requested GCP 08/17/18
GCP Rec 08/27/18

APPROVED WITH CONDITIONS

Approval Date: 07/06/2018

KB 08/27/18

Double sided

## INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM 1: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.



## NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.
AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160
PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.
ROUTINE USE: Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.
EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM collects this information to allow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

**BURDEN HOURS STATEMENT:** Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

(Continued on page 3)



**Approval Date: 07/06/2018**

## Additional Operator Remarks

### Location of Well

1. SHL: SESE / 257 FSL / 399 FEL / TWSP: 23S / RANGE: 35E / SECTION: 19 / LAT: 32.2835925 / LONG: -103.3994762 ( TVD: 0 feet, MD: 0 feet )
   PPP: SESE / 330 FSL / 330 FEL / TWSP: 23S / RANGE: 35E / SECTION: 19 / LAT: 32.2837947 / LONG: -103.399252 ( TVD: 11750 feet, MD: 12240 feet )
   BHL: NENE / 240 FNL / 330 FEL / TWSP: 23S / RANGE: 35E / SECTION: 19 / LAT: 32.296711 / LONG: -103.3992676 ( TVD: 11750 feet, MD: 16496 feet )

## BLM Point of Contact

Name: Judith Yeager
Title: Legal Instruments Examiner
Phone: 5752345936
Email: jyeager@blm.gov





**Approval Date: 07/06/2018**

## Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

AFMSS

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

# Application Data Report

07/19/2018

**APD ID:** 10400028893 **Submission Date:** 03/30/2018

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR IRELAND FED COM **Well Number:** 214H

**Well Type:** OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

## Section 1 - General

**APD ID:** 10400028893 **Tie to previous NOS?** **Submission Date:** 03/30/2018

**BLM Office:** CARLSBAD **User:** Lara Thompson **Title:** Assistant Project Manager

**Federal/Indian APD:** FED **Is the first lease penetrated for production Federal or Indian?** FED

**Lease number:** NMNM115426 **Lease Acres:** 279.45

**Surface access agreement in place?** **Allotted?** **Reservation:**

**Agreement in place?** NO **Federal or Indian agreement:**

**Agreement number:**

**Agreement name:**

**Keep application confidential?** YES

**Permitting Agent?** YES **APD Operator:** MATADOR PRODUCTION COMPANY

**Operator letter of designation:**

## Operator Info

**Operator Organization Name:** MATADOR PRODUCTION COMPANY

**Operator Address:** 5400 LBJ Freeway, Suite 1500 **Zip:** 75240

**Operator PO Box:**

**Operator City:** Dallas **State:** TX

**Operator Phone:** (972)371-5200

**Operator Internet Address:** amonroe@matadorresources.com

## Section 2 - Well Information

**Well in Master Development Plan?** NO **Mater Development Plan name:**

**Well in Master SUPO?** NO **Master SUPO name:**

**Well in Master Drilling Plan?** NO **Master Drilling Plan name:**

**Well Name:** DR IRELAND FED COM **Well Number:** 214H **Well API Number:**

**Field/Pool or Exploratory?** Field and Pool **Field Name:** BONE SPRING **Pool Name:**

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

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR IRELAND FED COM **Well Number:** 214H

**Describe other minerals:**

**Is the proposed well in a Helium production area?** N **Use Existing Well Pad?** NO **New surface disturbance?**

**Type of Well Pad:** MULTIPLE WELL **Multiple Well Pad Name:** DR IRELAND FEDERAL **Number:** 4

**Well Class:** HORIZONTAL **Number of Legs:** 1

**Well Work Type:** Drill

**Well Type:** OIL WELL

**Describe Well Type:**

**Well sub-Type:** APPRAISAL

**Describe sub-type:**

**Distance to town:** **Distance to nearest well:** 30 FT **Distance to lease line:** 570 FT

**Reservoir well spacing assigned acres Measurement:** 319.89 Acres

**Well plat:** BO_DR_IRELAND_FED_COM_SLOT_4_SURFACE_PAD_SITE_S_20180329095352.pdf

CD_DR_IRELAND_FED_COM_SLOT_4_SURFACE_PAD_PRO_S_20180329095352.pdf

1Mile_Radius_Map_20180329095411.docx

DrIrelandFederal214H_signed_20180425081437.pdf

**Well work start Date:** 12/01/2018 **Duration:** 25 DAYS

## Section 3 - Well Location Table

**Survey Type:** RECTANGULAR

**Describe Survey Type:**

**Datum:** NAD83 **Vertical Datum:** NAVD88

**Survey number:**

| | NS-Foot | NS Indicator | EW-Foot | EW Indicator | Twsp | Range | Section | Aliquot/Lot/Tract | Latitude | Longitude | County | State | Meridian | Lease Type | Lease Number | Elevation | MD | TVD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SHL Leg #1 | 257 | FSL | 399 | FEL | 23S | 35E | 19 | Aliquot SESE | 32.2835925 | -103.3994762 | LEA | NEW MEXICO | NEW MEXICO | F | NMNM 115426 | 3394 | 0 | 0 |
| KOP Leg #1 | 257 | FSL | 399 | FEL | 23S | 35E | 19 | Aliquot SESE | 32.2835925 | -103.3994762 | LEA | NEW MEXICO | NEW MEXICO | F | NMNM 115426 | 2394 | 1000 | 1000 |

**Operator Name:** MATADOR PRODUCTION COMPANY

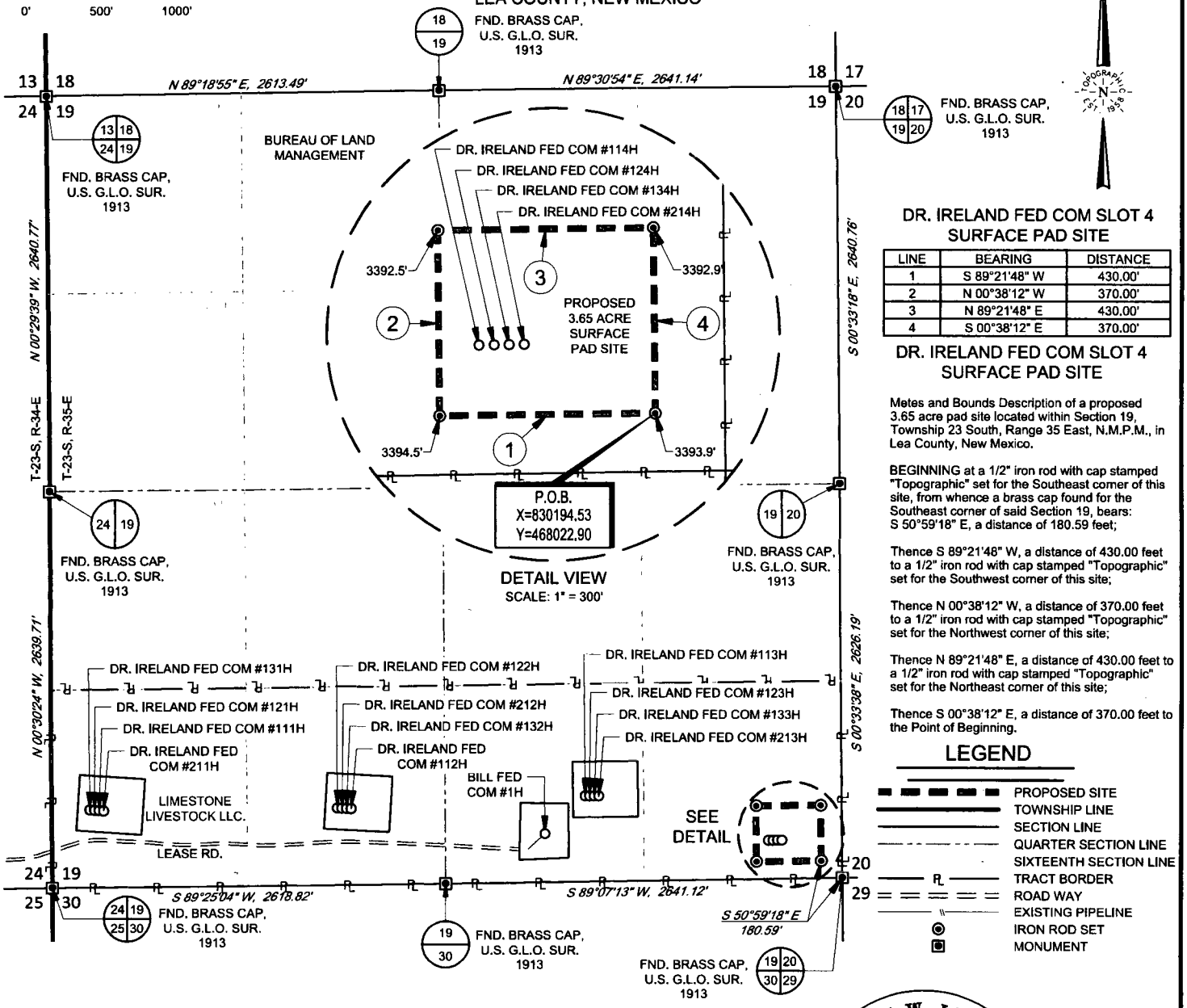
**Well Name:** DR IRELAND FED COM **Well Number:** 214H

| | NS-Foot | NS Indicator | EW-Foot | EW Indicator | Twsp | Range | Section | Aliquot/Lot/Tract | Latitude | Longitude | County | State | Meridian | Lease Type | Lease Number | Elevation | MD | TVD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PPP Leg #1 | 330 | FSL | 330 | FEL | 23S | 35E | 19 | Aliquot SESE | 32.2837947 | -103.399252 | LEA | NEW MEXICO | NEW MEXICO | F | NMNM 115426 | -8356 | 12240 | 11750 |
| EXIT Leg #1 | 330 | FNL | 330 | FEL | 23S | 35E | 19 | Aliquot NENE | 32.2964637 | -103.399673 | LEA | NEW MEXICO | NEW MEXICO | F | NMNM 113422 | -8356 | 16406 | 11750 |
| BHL Leg #1 | 240 | FNL | 330 | FEL | 23S | 35E | 19 | Aliquot NENE | 32.296711 | -103.399676 | LEA | NEW MEXICO | NEW MEXICO | F | NMNM 113422 | -8356 | 16496 | 11750 |

SCALE: 1" = 1000'

0' 500' 1000'

# SECTION 19, TOWNSHIP 23-S, RANGE 35-E, N.M.P.M.
## LEA COUNTY, NEW MEXICO




## DR. IRELAND FED COM SLOT 4 SURFACE PAD SITE

| LINE | BEARING | DISTANCE |
|---|---|---|
| 1 | S 89°21'48" W | 430.00' |
| 2 | N 00°38'12" W | 370.00' |
| 3 | N 89°21'48" E | 430.00' |
| 4 | S 00°38'12" E | 370.00' |

## DR. IRELAND FED COM SLOT 4 SURFACE PAD SITE

Metes and Bounds Description of a proposed 3.65 acre pad site located within Section 19, Township 23 South, Range 35 East, N.M.P.M., in Lea County, New Mexico.

BEGINNING at a 1/2" iron rod with cap stamped "Topographic" set for the Southeast corner of this site, from whence a brass cap found for the Southeast corner of said Section 19, bears: S 50°59'18" E, a distance of 180.59 feet;

Thence S 89°21'48" W, a distance of 430.00 feet to a 1/2" iron rod with cap stamped "Topographic" set for the Southwest corner of this site;

Thence N 00°38'12" W, a distance of 370.00 feet to a 1/2" iron rod with cap stamped "Topographic" set for the Northwest corner of this site;

Thence N 89°21'48" E, a distance of 430.00 feet to a 1/2" iron rod with cap stamped "Topographic" set for the Northeast corner of this site;

Thence S 00°38'12" E, a distance of 370.00 feet to the Point of Beginning.

## LEGEND

- PROPOSED SITE
- TOWNSHIP LINE
- SECTION LINE
- QUARTER SECTION LINE
- SIXTEENTH SECTION LINE
- TRACT BORDER
- ROAD WAY
- EXISTING PIPELINE
- IRON ROD SET
- MONUMENT

STAN W. LLOYD NEW MEXICO 19642 PROFESSIONAL SURVEYOR

Matador PRODUCTION COMPANY


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


Stan W. Lloyd, P.S. No. 19642

SEPTEMBER 12, 2017

| DR. IRELAND FED COM SLOT 4 SURFACE PAD SITE | REVISION: INT | DATE |
|---|---|---|
| DATE: 09/12/17 | | |
| FILE: BO_DR_IRELAND_FED_COM_SLOT_4_SURFACE_PAD_SITE | | |
| DRAWN BY: MML | | |
| SHEET: 1 OF 2 | | |

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.
4. P.O.B. = POINT OF BEGINNING

**APD ID:** 10400028893 **Submission Date:** 03/30/2018

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR IRELAND FED COM **Well Number:** 214H

**Well Type:** OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

## Section 1 - Geologic Formations

| Formation ID | Formation Name | Elevation | True Vertical Depth | Measured Depth | Lithologies | Mineral Resources | Producing Formation |
|---|---|---|---|---|---|---|---|
| 1 | [redacted] | 3394 | 1414 | 1414 | | USEABLE WATER | No |
| 2 | [redacted] | 1594 | 1800 | 1800 | | NONE | No |
| 3 | [redacted] | -735 | 4129 | 4129 | | NONE | No |
| 4 | [redacted] | -2173 | 5567 | 5567 | | NATURAL GAS,OIL | No |
| 5 | [redacted] | -4113 | 7507 | 7507 | | NATURAL GAS,OIL | No |
| 6 | [redacted] | -5419 | 8813 | 8813 | | NATURAL GAS,OIL | No |
| 7 | [redacted] | -6144 | 9538 | 9538 | | NATURAL GAS,OIL | No |
| 8 | [redacted] | -6592 | 9986 | 9986 | | NATURAL GAS,OIL | No |
| 9 | [redacted] | -7332 | 10726 | 10726 | | NATURAL GAS,OIL | No |
| 10 | [redacted] | -8268 | 11662 | 11662 | | NATURAL GAS,OIL | Yes |

## Section 2 - Blowout Prevention

**Pressure Rating (PSI):** 2M **Rating Depth:** 15000

**Equipment:** See Exhibit E-1. A BOP consisting of 3 rams with 2 pipe rams, 1 blind ram and one annular preventer. The BOP will be utilized below surface casing to TD. See attachments for BOP and choke manifold diagrams. Also present will be an accumulator that meets the requirements of Onshore Order #2 for the pressure rating of the BOP stack. A rotating head will also be installed as needed. BOP will be inspected and operated as recommended in Onshore Order #2. A 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.

**Requesting Variance?** YES

**Variance request:** The operator requests a variance to have the option of running a speed head for setting the intermediate strings. In the case of running a speed head with landing mandrel for 9-5/8" casing, a minimum of a 3M BOPE system will be installed after surface casing is set. Matador Resources 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 (see Exhibit E-2). The hose is not required by the manufacturer to be anchored. In the event the specific hose is not available, one of equal or higher rating will be used.

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR IRELAND FED COM **Well Number:** 214H

**Testing Procedure:** After setting surface casing and before drilling below the surface casing shoe, a minimum of a 2M BOPE system will be installed and tested to 250 psi low and 2000 psi high with the annular being tested to 250 psi low and 1000 psi high. After setting intermediate casing, a minimum of a 3M system will be installed and tested to 250 psi low and 3000 psi high with the annular being tested to 250 psi low and 2500 psi high.

**Choke Diagram Attachment:**

Choke_Manifold_20180329105718.pdf

**BOP Diagram Attachment:**

BOP_297_001_20180329105727.pdf

## Section 3 - Casing

| Casing ID | String Type | Hole Size | Csg Size | Condition | Standard | Tapered String | Top Set MD | Bottom Set MD | Top Set TVD | Bottom Set TVD | Top Set MSL | Bottom Set MSL | Calculated casing length MD | Grade | Weight | Joint Type | Collapse SF | Burst SF | Joint SF Type | Joint SF | Body SF Type | Body SF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SURFACE | 17.5 | 13.375 | NEW | API | N | 0 | 850 | 0 | 850 | | | 850 | J-55 | 54.5 | OTHER - BTC | 1.125 | 1.125 | BUOY | 1.8 | BUOY | 1.8 |
| 2 | INTERMEDIATE | 8.75 | 7.625 | NEW | API | N | 4400 | 4400 | 4400 | 4400 | | | 0 | P-110 | 29.7 | OTHER - BTC | 1.125 | 1.125 | BUOY | 1.8 | BUOY | 1.8 |
| 3 | INTERMEDIATE | 12.25 | 9.625 | NEW | API | N | 0 | 5400 | 0 | 5400 | | | 5400 | J-55 | 40 | OTHER - BTC | 1.125 | 1.125 | BUOY | 1.8 | BUOY | 1.8 |
| 4 | PRODUCTION | 6.125 | 5.5 | NEW | NON API | N | 10600 | 11000 | 10600 | 11000 | | | 400 | P-110 | 20 | OTHER - BTC/TXP | 1.125 | 1.125 | BUOY | 1.8 | BUOY | 1.8 |
| 5 | INTERMEDIATE | 8.75 | 7.625 | NEW | NON API | N | 4400 | 11100 | 4400 | 11100 | | | 6700 | P-110 | 29.7 | OTHER - VAM HTF-NR | 1.125 | 1.125 | BUOY | 1.8 | BUOY | 1.8 |
| 6 | INTERMEDIATE | 8.75 | 7.0 | NEW | API | N | 4400 | 11977 | 4400 | 11977 | | | 7577 | P-110 | 29 | OTHER - BTC | 1.125 | 1.125 | BUOY | 1.8 | BUOY | 1.8 |
| 7 | PRODUCTION | 6.125 | 4.5 | NEW | NON API | N | 11600 | 16496 | 11600 | 16496 | | | 4896 | P-110 | 13.5 | OTHER - BTC/TXP | 1.125 | 1.125 | BUOY | 1.8 | BUOY | 1.8 |

**Casing Attachments**

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR IRELAND FED COM **Well Number:** 214H

**Casing Attachments**

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

**Inspection Document:**

**Spec Document:**

TenarisHydril_TenarisXP_BTC_5.500_20_20180213122618.pdf

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

BLM_Casing_Design_Assumptions_4_string_20180326165800.pdf

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

**Inspection Document:**

**Spec Document:**

VRCC_16_1177___CDS___7.625_in_29.70_ppf_P110_EC_VAM___HTF_NR_Rev02_20180327134756.pdf

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

BLM_Casing_Design_Assumptions_4_string_20180327135201.pdf

**Casing ID:** 3 **String Type:** INTERMEDIATE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

BLM_Casing_Design_Assumptions_4_string_20180326165808.pdf

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR IRELAND FED COM **Well Number:** 214H

**Casing Attachments**

**Casing ID:** 4 **String Type:** PRODUCTION

**Inspection Document:**

**Spec Document:**

TenarisHydril_TenarisXP_BTC_5.500_20_20180306142420.pdf

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

BLM_Casing_Design_Assumptions_4_string_20180326165825.pdf

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**Casing ID:** 5 **String Type:** INTERMEDIATE

**Inspection Document:**

**Spec Document:**

VRCC_16_1177___CDS___7.625_in_29.70_ppf_P110_EC_VAM___HTF_NR_Rev02_20180329111208.pdf

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

BLM_Casing_Design_Assumptions_4_string_20180327135152.pdf

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**Casing ID:** 6 **String Type:** INTERMEDIATE

**Inspection Document:**

**Spec Document:**

TenarisHydril_TenarisXP_BTC_4.500_13_20180327134139.pdf

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

BLM_Casing_Design_Assumptions_4_string_20180327134258.pdf

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**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR IRELAND FED COM **Well Number:** 214H

**Casing Attachments**

**Casing ID:** 7 **String Type:** PRODUCTION

**Inspection Document:**

**Spec Document:**

TenarisHydril_TenarisXP_BTC_4.500_13_20180329111427.pdf

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

BLM_Casing_Design_Assumptions_4_string_20180327135215.pdf

## Section 4 - Cement

| String Type | Lead/Tail | Stage Tool Depth | Top MD | Bottom MD | Quantity(sx) | Yield | Density | Cu Ft | Excess% | Cement type | Additives |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SURFACE | Lead | | 0 | 850 | 200 | 1.82 | 12.8 | 364 | 100 | Class C | Bentonite + 2% CaCL2 + 3% NaCl + LCM |
| SURFACE | Tail | | 0 | 850 | 700 | 1.38 | 14.8 | 966 | 100 | Class C | 5% NaCl + LCM |
| INTERMEDIATE | Lead | | 4400 | 4400 | 475 | 2.36 | 11.5 | 1121 | 75 | TXI | Fluid Loss + Dispersant + Retarder + LCM |
| INTERMEDIATE | Tail | | 4400 | 4400 | 320 | 1.38 | 13.2 | 442 | 75 | TXI | Fluid Loss + Dispersant + Retarder + LCM |
| INTERMEDIATE | Lead | | 0 | 5400 | 1020 | 2.13 | 12.6 | 2173 | 100 | Class C | Bentonite + 1% CaCL2 + 8% NaCl + LCM |
| INTERMEDIATE | Tail | | 0 | 5400 | 540 | 1.38 | 14.8 | 745 | 100 | Class C | 5% NaCl + LCM |
| PRODUCTION | Lead | | 10600 | 11000 | 530 | 1.17 | 15.8 | 620 | 25 | Class H | Fluid Loss + Dispersant + Retarder + LCM |
| INTERMEDIATE | Lead | | 4400 | 11100 | 475 | 2.36 | 11.5 | 1121 | 75 | TXI | Fluid Loss + Dispersant + Retarder + LCM |
| INTERMEDIATE | Tail | | 4400 | 11100 | 320 | 1.38 | 13.2 | 442 | 75 | TXI | Fluid Loss + Dispersant + Retarder + LCM |
| INTERMEDIATE | Lead | | 4400 | 11977 | 475 | 2.36 | 11.5 | 1121 | 75 | TXI | Fluid Loss + Dispersant + Retarder + LCM |

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR IRELAND FED COM **Well Number:** 214H

| String Type | Lead/Tail | Stage Tool Depth | Top MD | Bottom MD | Quantity(sx) | Yield | Density | Cu Ft | Excess% | Cement type | Additives |
|---|---|---|---|---|---|---|---|---|---|---|---|
| INTERMEDIATE | Tail | | 4400 | 11977 | 320 | 1.38 | 13.2 | 442 | 75 | TXI | Fluid Loss + Dispersant + Retarder + LCM |
| PRODUCTION | Lead | | 11600 | 16496 | 530 | 1.17 | 15.8 | 620 | 25 | Class H | Fluid Loss + Dispersant + Retarder + LCM |

## Section 5 - Circulating Medium

**Mud System Type:** Closed

**Will an air or gas system be Used?** NO

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

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

**Describe what will be on location to control well or mitigate other conditions:** See Exhibit E-1. A BOP consisting of 3 rams with 2 pipe rams, 1 blind ram and one annular preventer. The BOP will be utilized below surface casing to TD. See attachments for BOP and choke manifold diagrams. Also present will be an accumulator that meets the requirements of Onshore Order #2 for the pressure rating of the BOP stack. A rotating head will also be installed as needed. BOP will be inspected and operated as recommended in Onshore Order #2. A 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.

**Describe the mud monitoring system utilized:** The Mud Monitoring System is an electronic Pason system satisfying requirements of Onshore Order 1. Mud Logging Program: 2 man unit from 5400 – TD.

## Circulating Medium Table

| Top Depth | Bottom Depth | Mud Type | Min Weight (lbs/gal) | Max Weight (lbs/gal) | Density (lbs/cu ft) | Gel Strength (lbs/100 sqft) | PH | Viscosity (CP) | Salinity (ppm) | Filtration (cc) | Additional Characteristics |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 850 | SPUD MUD | 8.3 | 8.3 | | | | | | | |
| 0 | 5400 | SALT SATURATED | 10 | 10 | | | | | | | |
| 4400 | 11977 | OTHER : FW/ Cut Brine | 9 | 9 | | | | | | | |
| 10600 | 16496 | OIL-BASED MUD | 12.5 | 12.5 | | | | | | | |

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR IRELAND FED COM **Well Number:** 214H

## Section 6 - Test, Logging, Coring

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

See page 3 of Drilling Plan attached in Other Facets, Section 8.

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

CBL,GR,MUDLOG

**Coring operation description for the well:**

No DSTs or cores are planned at this time.

## Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 6450 **Anticipated Surface Pressure:** 3865

**Anticipated Bottom Hole Temperature(F):** 180

**Anticipated abnormal pressures, temperatures, or potential geologic hazards?** NO

**Describe:**

**Contingency Plans geoharzards description:**

**Contingency Plans geohazards attachment:**

**Hydrogen Sulfide drilling operations plan required?** YES

**Hydrogen sulfide drilling operations plan:**

Matador_Hydrogen_Sulfide_Drilling_Leslie__024_20180315151636.docx

H2S_Emergency_Contacts_20180529151657.docx

## Section 8 - Other Information

**Proposed horizontal/directional/multi-lateral plan submission:**

Dr._Ireland_Fed_Com__214H___Well_Plan_v1_20180329105248.pdf

**Other proposed operations facets description:**

**Other proposed operations facets attachment:**

BLM_Casing_Design_Assumptions_4_string_20180329105318.pdf

Close_Loop_System_20180329105339.docx

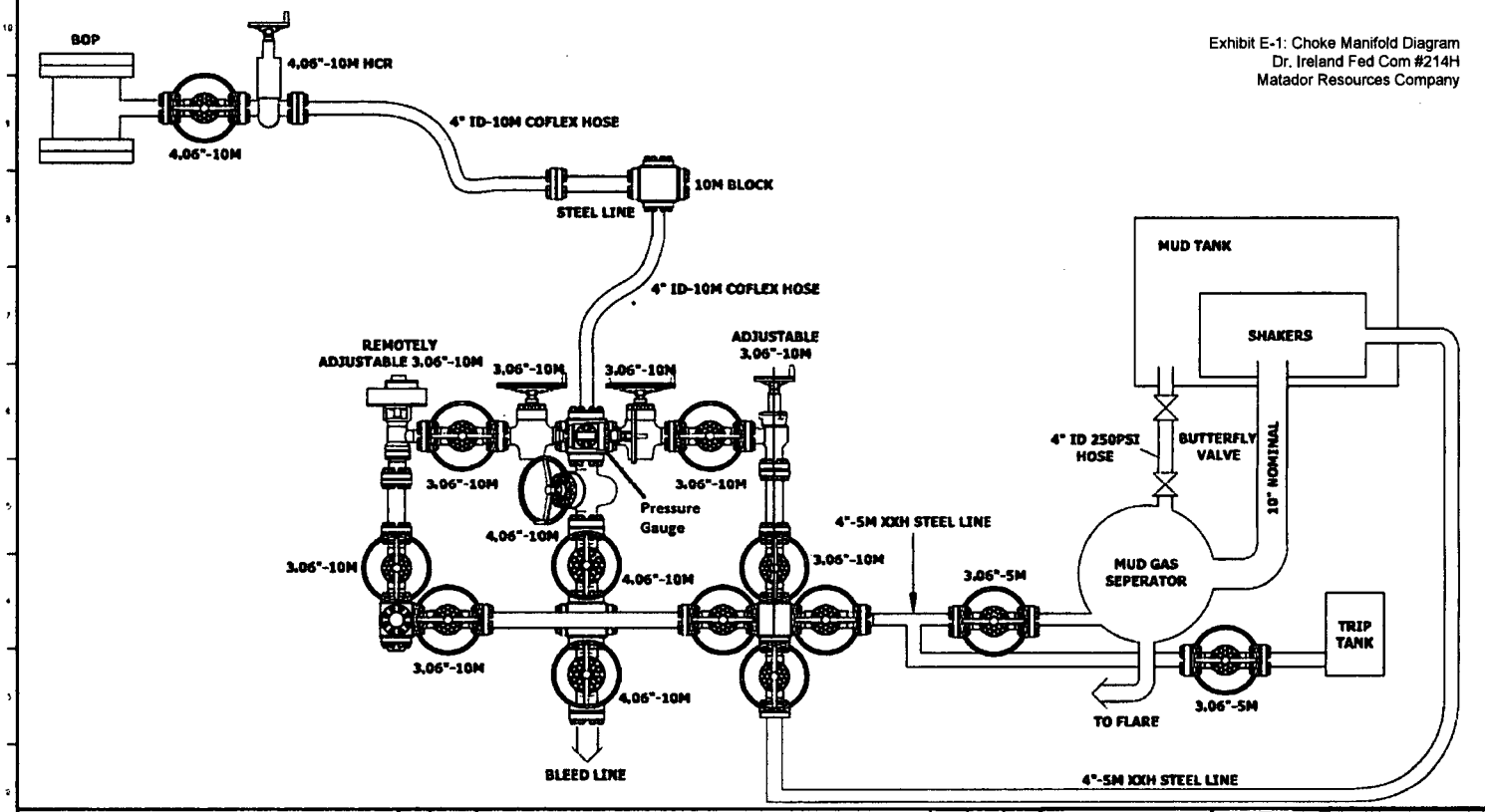
Dr._Ireland_Fed_Com__214H_MTDR_Drlg_Plan_20180329105340.docx

297Co_Flex_Certs__Dr._Ireland_Fed_Com__213H_20180329105359.pdf

Gas_Capture_Plan___Dr._Ireland_211H__212H__213H__214H_20180529151738.docx

**Other Variance attachment:**

Exhibit E-1: Choke Manifold Diagram
Dr. Ireland Fed Com #214H
Matador Resources Company




WELDING NOTE & TOLERANCES UNLESS OTHERWISE SPECIFIED.

| REV | DATE | DESCRIPTION | DRAWN BY | CHKD BY | APPVD / MGL |
|---|---|---|---|---|---|
| 02 | 6-3-15 | ISSUED FOR INFORMATION | CP | CDL | |
| 01 | 5-8-15 | ISSUED FOR INFORMATION | CDL | | |



PATTERSON-UTI DRILLING COMPANY LLC

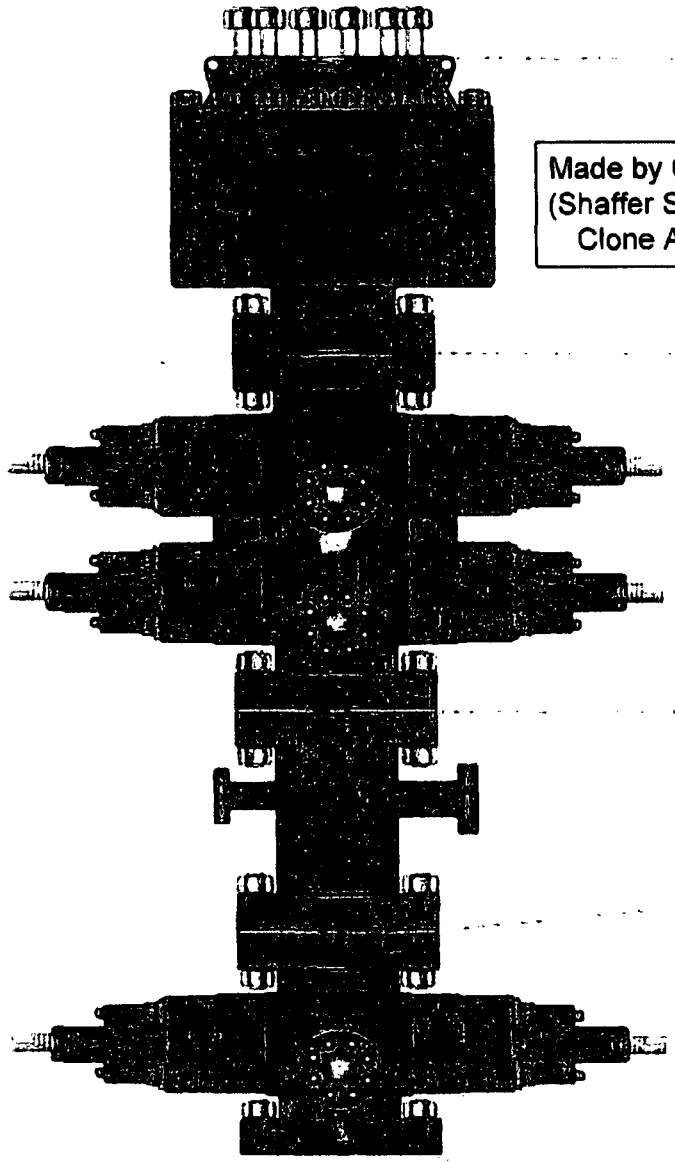
CHOKE MANIFOLD
10M CHOKE ARRANGEMENT
RIG 297

DRAWING NO. R0297-D.001.LAY.09

Exhibit E-1: BOP
Dr. Ireland Fed Com #214H
Matador Resources Company

**PATTERSON-UTI**
*Well Control*

RIG: 297



Made by Cameron
(Shaffer Spherical)
Clone Annular

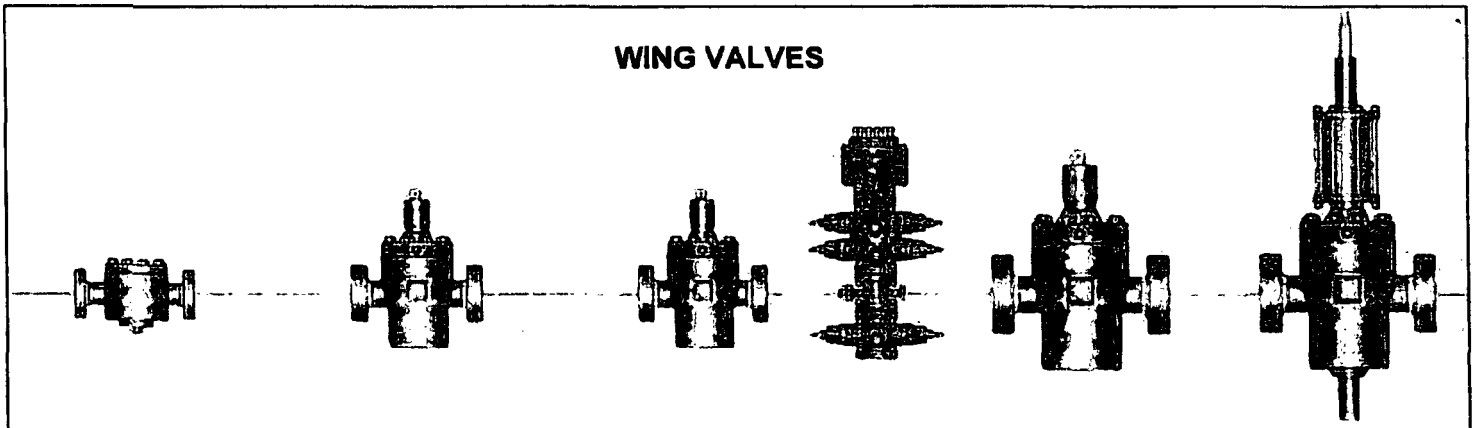
**PATTERSON-UTI #** PS2-628
**STYLE:** New Shaffer Spherical
**BORE** 13 5/8" **PRESSURE** 5,000
**HEIGHT:** 48 ½" **WEIGHT:** 13,800 lbs

**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

## WING VALVES



2" Check Valve | 2" Manual Valve | 2" Manual Valve | 4" Manual Valve | 4" Hydraulic Valve

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

## PIPE BODY DATA

### GEOMETRY

| | | | | | |
|---|---|---|---|---|---|
| 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 | | | | |

### PERFORMANCE

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

## TENARISXP® BTC CONNECTION DATA

### GEOMETRY

| | | | | | |
|---|---|---|---|---|---|
| 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. |

### PERFORMANCE

| | | | | | |
|---|---|---|---|---|---|
| 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 | | | | |

### ESTIMATED MAKE-UP TORQUES(3)

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

### OPERATIONAL LIMIT TORQUES

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

### BLANKING DIMENSIONS

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

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February 02 2017

Tenaris

**Size**: 5.500 in.
**Wall**: 0.361 in.
**Weight**: 20.00 lbs/ft
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**Casing/Tubing**: CAS
**Coupling Option**: REGULAR

## PIPE BODY DATA

### GEOMETRY

| | | | | | |
|---|---|---|---|---|---|
| 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 | | | | |

### PERFORMANCE

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

## TENARISXP® BTC CONNECTION DATA

### GEOMETRY

| | | | | | |
|---|---|---|---|---|---|
| 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. |

### PERFORMANCE

| | | | | | |
|---|---|---|---|---|---|
| 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 | | | | |

### ESTIMATED MAKE-UP TORQUES(3)

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

### OPERATIONAL LIMIT TORQUES

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

### BLANKING DIMENSIONS

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

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

## PIPE BODY DATA

### GEOMETRY

| | | | | | |
|---|---|---|---|---|---|
| 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 | | | | |

### PERFORMANCE

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

## TENARISXP® BTC CONNECTION DATA

### GEOMETRY

| | | | | | |
|---|---|---|---|---|---|
| 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. |

### PERFORMANCE

| | | | | | |
|---|---|---|---|---|---|
| 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 | | | | |

### ESTIMATED MAKE-UP TORQUES(3)

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

### OPERATIONAL LIMIT TORQUES

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

### BLANKING DIMENSIONS

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.

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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

## PIPE BODY DATA

### GEOMETRY

| | | | | | |
|---|---|---|---|---|---|
| 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 | | | | |

### PERFORMANCE

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

## TENARISXP® BTC CONNECTION DATA

### GEOMETRY

| | | | | | |
|---|---|---|---|---|---|
| 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. |

### PERFORMANCE

| | | | | | |
|---|---|---|---|---|---|
| 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 | | | | |

### ESTIMATED MAKE-UP TORQUES(3)

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

### OPERATIONAL LIMIT TORQUES

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

### BLANKING DIMENSIONS

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

Issued on: 12 Janv. 2017 by T. DELBOSCO

VRCC 16-1177 Rev02 for Houston Field Service

**DATA ARE INFORMATIVE ONLY.**
**BASED ON SI_PD-101836 P&B**

# VAM® HTF-NR™
## Connection Data Sheet

| OD | Weight | Wall Th. | Grade | API Drift | Connection |
|---|---|---|---|---|---|
| 7 5/8 in. | 29.70 lb/ft | 0.375 in. | P110 EC | 6.750 in. | VAM® HTF NR |

| PIPE PROPERTIES | |
|---|---|
| Nominal OD | 7.625 in. |
| Nominal ID | 6.875 in. |
| Nominal Cross Section Area | 8.541 sqin. |
| Grade Type | Enhanced API |
| Min. Yield Strength | 125 ksi |
| Max. Yield Strength | 140 ksi |
| Min. Ultimate Tensile Strength | 135 ksi |
| Tensile Yield Strength | 1 068 klb |
| Internal Yield Pressure | 10 760 psi |
| Collapse pressure | 7 360 psi |

| CONNECTION PROPERTIES | |
|---|---|
| Connection Type | Premium Integral Flush |
| Connection OD (nom) | 7.701 in. |
| Connection ID (nom) | 6.782 in. |
| Make-Up Loss | 4.657 in. |
| Critical Cross Section | 4.971 sqin. |
| Tension Efficiency | 58 % of pipe |
| Compression Efficiency | 72.7 % of pipe |
| Compression Efficiency with Sealability | 34.8 % of pipe |
| Internal Pressure Efficiency | 100 % of pipe |
| External Pressure Efficiency | 100 % of pipe |

| CONNECTION PERFORMANCES | |
|---|---|
| Tensile Yield Strength | 619 klb |
| Compression Resistance | 778 klb |
| Compression with Sealability | 372 klb |
| Internal Yield Pressure | 10 760 psi |
| External Pressure Resistance | 7 360 psi |
| Max. Bending | 44 °/100ft |
| Max. Bending with Sealability | 17 °/100ft |

| TORQUE VALUES | |
|---|---|
| Min. Make-up torque | 9 600 ft.lb |
| Opti. Make-up torque | 11 300 ft.lb |
| Max. Make-up torque | 13 000 ft.lb |
| Max. Torque with Sealability | 58 500 ft.lb |
| Max. Torsional Value | 73 000 ft.lb |

VAM® HTF™ (High Torque Flush) is a flush OD integral connection providing maximum clearance along with torque strength for challenging applications such as extended reach and slim hole wells, drilling liner / casing, liner rotation to acheive better cementation in highly deviated and critical High Pressure / High Temperature wells.

Looking ahea on the outcoming testing industry standards, VAM® decided to create an upgraded design and launch on the market the VAM® HTF-NR as the new standard version of VAM® extreme high torque flush connection. The VAM® HTF-NR has extensive tests as per API RP 5C5:2015 CAL II which include the gas sealability having load points with bending, internal pressure and high temperature at 135°C.


**Do you need help on this product? - Remember no one knows VAM® like VAM®**

*canada@vamfieldservice.com* *uk@vamfieldservice.com* *china@vamfieldservice.com*
*usa@vamfieldservice.com* *dubai@vamfieldservice.com* *baku@vamfieldservice.com*
*mexico@vamfieldservice.com* *nigeria@vamfieldservice.com* *singapore@vamfieldservice.com*
*brazil@vamfieldservice.com* *angola@vamfieldservice.com* *australia@vamfieldservice.com*

**Over 180 VAM® Specialists available worldwide 24/7 for Rig Site Assistance**


Other Connection Data Sheets are available at www.vamservices.com

**Vallourec Group**

vallourec

Issued on: 12 Janv. 2017 by T. DELBOSCO

VRCC 16-1177 Rev02 for Houston Field Service

**DATA ARE INFORMATIVE ONLY.**
**BASED ON SI_PD-101836 P&B**

# VAM® HTF-NR™
## Connection Data Sheet

| OD | Weight | Wall Th. | Grade | API Drift | Connection |
|---|---|---|---|---|---|
| 7 5/8 in. | 29.70 lb/ft | 0.375 in. | P110 EC | 6.750 in. | VAM® HTF NR |

| PIPE PROPERTIES | |
|---|---|
| Nominal OD | 7.625 in. |
| Nominal ID | 6.875 in. |
| Nominal Cross Section Area | 8.541 sqin. |
| Grade Type | Enhanced API |
| Min. Yield Strength | 125 ksi |
| Max. Yield Strength | 140 ksi |
| Min. Ultimate Tensile Strength | 135 ksi |
| Tensile Yield Strength | 1 068 klb |
| Internal Yield Pressure | 10 760 psi |
| Collapse pressure | 7 360 psi |

| CONNECTION PROPERTIES | |
|---|---|
| Connection Type | Premium Integral Flush |
| Connection OD (nom) | 7.701 in. |
| Connection ID (nom) | 6.782 in. |
| Make-Up Loss | 4.657 in. |
| Critical Cross Section | 4.971 sqin. |
| Tension Efficiency | 58 % of pipe |
| Compression Efficiency | 72.7 % of pipe |
| Compression Efficiency with Sealability | 34.8 % of pipe |
| Internal Pressure Efficiency | 100 % of pipe |
| External Pressure Efficiency | 100 % of pipe |

| CONNECTION PERFORMANCES | |
|---|---|
| Tensile Yield Strength | 619 klb |
| Compression Resistance | 778 klb |
| Compression with Sealability | 372 klb |
| Internal Yield Pressure | 10 760 psi |
| External Pressure Resistance | 7 360 psi |
| Max. Bending | 44 °/100ft |
| Max. Bending with Sealability | 17 °/100ft |

| TORQUE VALUES | |
|---|---|
| Min. Make-up torque | 9 600 ft.lb |
| Opti. Make-up torque | 11 300 ft.lb |
| Max. Make-up torque | 13 000 ft.lb |
| Max. Torque with Sealability | 58 500 ft.lb |
| Max. Torsional Value | 73 000 ft.lb |

VAM® HTF™ (High Torque Flush) is a flush OD integral connection providing maximum clearance along with torque strength for challenging applications such as extended reach and slim hole wells, drilling liner / casing, liner rotation to acheive better cementation in highly deviated and critical High Pressure / High Temperature wells.

Looking ahea on the outcoming testing industry standards, VAM® decided to create an upgraded design and launch on the market the VAM® HTF-NR as the new standard version of VAM® extreme high torque flush connection. The VAM® HTF-NR has extensive tests as per API RP 5C5:2015 CAL II which include the gas sealability having load points with bending, internal pressure and high temperature at 135°C.


**Do you need help on this product? - Remember no one knows VAM® like VAM®**

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*mexico@vamfieldservice.com* *nigeria@vamfieldservice.com* *singapore@vamfieldservice.com*
*brazil@vamfieldservice.com* *angola@vamfieldservice.com* *australia@vamfieldservice.com*

**Over 180 VAM® Specialists available worldwide 24/7 for Rig Site Assistance**


Other Connection Data Sheets are available at www.vamservices.com

**Vallourec Group**

vallourec

## Casing Design Criteria and Load Case Assumptions

### Surface Casing

Collapse: $DF_C$=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

### Intermediate #1 Casing

Collapse: $DF_C$=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

### Intermediate #2 Casing

Collapse: $DF_C$=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

## Production Casing

Collapse: $DF_c$=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

## Casing Design Criteria and Load Case Assumptions

### Surface Casing

Collapse: $DF_c$=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

### Intermediate #1 Casing

Collapse: $DF_c$=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

### Intermediate #2 Casing

Collapse: $DF_c$=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

## Production Casing

Collapse: $DF_c$=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

## Casing Design Criteria and Load Case Assumptions

### Surface Casing

Collapse: $DF_C$=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

### Intermediate #1 Casing

Collapse: $DF_C$=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

### Intermediate #2 Casing

Collapse: $DF_C$=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

## Production Casing

Collapse: $DF_c$=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

## Casing Design Criteria and Load Case Assumptions

### Surface Casing

Collapse: $DF_C$=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

### Intermediate #1 Casing

Collapse: $DF_C$=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

### Intermediate #2 Casing

Collapse: $DF_C$=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

## Production Casing

Collapse: $DF_c$=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

## Casing Design Criteria and Load Case Assumptions

### Surface Casing

Collapse: $DF_C$=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

### Intermediate #1 Casing

Collapse: $DF_C$=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

### Intermediate #2 Casing

Collapse: $DF_C$=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

## Production Casing

Collapse: $DF_c$=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

## Casing Design Criteria and Load Case Assumptions

### Surface Casing

Collapse: $DF_C$=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

### Intermediate #1 Casing

Collapse: $DF_C$=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

### Intermediate #2 Casing

Collapse: $DF_C$=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

## Production Casing

Collapse: $DF_c$=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

## Casing Design Criteria and Load Case Assumptions

### Surface Casing

Collapse: $DF_C$=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

### Intermediate #1 Casing

Collapse: $DF_C$=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

### Intermediate #2 Casing

Collapse: $DF_C$=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

## Production Casing

Collapse: $DF_C$=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

## Casing Design Criteria and Load Case Assumptions

### Surface Casing

Collapse: $DF_C$=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

### Intermediate #1 Casing

Collapse: $DF_C$=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

### Intermediate #2 Casing

Collapse: $DF_C$=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

## Production Casing

Collapse: $DF_c$=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: $DF_b$=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: $DF_t$=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

# 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.

Drilling Operations Plan
Dr. Ireland Fed Com #214H
Matador Resources Company
Sec. 19, 23S, 35E
Lea County, NM

Surface Location: 257' FSL & 399' FEL, Sec. 19
Bottom Hole Location: 240' FNL & 330' FEL, Sec. 19
Elevation Above Sea Level: 3394'

Geologic Name of Surface Formation: Wolfcamp

Type of Well: Horizontal well, No Pilot Hole, Drilled with conventional rotary tools

Proposed Drilling Depth: 16,495' MD / 11,750' TVD

Estimated Tops of Geological Markers w/ Mineral Bearing Formation:

| Formation Name | Est Top | Bearing |
|---|---|---|
| Rustler | 1414 | Water |
| Salado | 1800 | Barren |
| Base of Salt | 4129 | Barren |
| Bell Canyon | 5567 | Hydrocarbon |
| Brushy Canyon | 7507 | Hydrocarbon |
| Bone Spring Lime | 8813 | Hydrocarbon |
| First Bone Spring Carb | 9538 | Hydrocarbon |
| First Bone Spring Sand | 9844 | Hydrocarbon |
| Second Bone Spring Carb | 9986 | Hydrocarbon |
| Second Bone Spring Sand | 10393 | Hydrocarbon |
| Third Bone Spring Carb | 10726 | Hydrocarbon |
| Third Bone Spring Sand | 11391 | Hydrocarbon |
| Wolfcamp A | 11662 | Hydrocarbon |
| Wolfcamp A Fat | 11846 | Hydrocarbon |

OSE Ground Water Estimated Depth: 280'

Drilling Operations Plan
Dr. Ireland Fed Com #214H
Matador Resources Company
Sec. 19, 23S, 35E
Lea County, NM

Casing Program

| 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 | 850 | Surface |
| Intermediate | 12-1/4" | 9-5/8" (new) | 40# J-55 | BTC | 5400 | Surface |
| Intermediate 2 Top | 8-3/4" | 7-5/8" (new) | 29.7# P-110 | BTC | 4400 | 4400 |
| Intermediate 2 Middle | 8-3/4" | 7-5/8" (new) | 29.7# P-110 | VAM HTF-NR | 11100 | 4400 |
| Intermediate 2 Bottom | 8-3/4" | 7" (new) | 29# P-110 | BTC | 11977 | 4400 |
| Production Top | 6-1/8" | 5-1/2" (new) | 20# P-110 | BTC/TXP | 11000 | 11600 |
| Production Bottom | 6-1/8" | 4-1/2" (new) | 13.5# P-110 | BTC/TXP | 16496 | 11600 |

Minimum Safety Factors: Burst: 1.125 Collapse: 1.125 Tension 1.8

Cementing Program

| Name | Type | Sacks | Yield | Weight | Blend |
|---|---|---|---|---|---|
| Surface | Lead | 200 | 1.82 | 12.8 | Class C + Bentonite + 2% CaCL2 + 3% NaCl + LCM |
| | Tail | 700 | 1.38 | 14.8 | Class C + 5% NaCl + LCM |
| TOC = 0' | | 100% Excess | | | Centralizers per Onshore Order 2.III.B.1f |
| Intermediate | Lead | 1020 | 2.13 | 12.6 | Class C + Bentonite + 1% CaCL2 + 8% NaCl + LCM |
| | Tail | 540 | 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 | 475 | 2.36 | 11.5 | TXI + Fluid Loss + Dispersant + Retarder + LCM |
| | Tail | 320 | 1.38 | 13.2 | TXI + Fluid Loss + Dispersant + Retarder + LCM |
| TOC = 4400' | | 75% Excess | | | 2 on btm jt, 1 on 2nd jt, 1 every 4th jt to top of tail cement (500' above TOC) |
| Production | Tail | 530 | 1.17 | 15.8 | Class H + Fluid Loss + Dispersant + Retarder + LCM |

Drilling Operations Plan
Dr. Ireland Fed Com #214H
Matador Resources Company
Sec. 19, 23S, 35E
Lea County, NM

| | | |
|---|---|---|
| TOC = 11600' | 25% Excess | 2 on btm jt, 1 on 2nd jt, 1 every other jt to top of curve |

Pressure Control Equipment:

See Exhibit E-1. A BOP consisting of 3 rams with 2 pipe rams, 1 blind ram and one annular preventer. The BOP will be utilized below surface casing to TD. See attachments for BOP and choke manifold diagrams. Also present will be an accumulator that meets the requirements of Onshore Order #2 for the pressure rating of the BOP stack. A rotating head will also be installed as needed. BOP will be inspected and operated as recommended in Onshore Order #2. A 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.

After setting surface casing and before drilling below the surface casing shoe, a minimum of a 2M BOPE system will be installed and tested to 250 psi low and 2000 psi high with the annular being tested to 250 psi low and 1000 psi high. After setting intermediate #1 casing, a minimum of a 5M system will be installed and tested to 250 psi low and 5000 psi high with the annular being tested to 250 psi low and 2500 psi high. After setting intermediate #2 casing, a minimum of a 5M system will be installed and tested to 250 psi low and 5000 psi high with the annular being tested to 250 psi low and psi high.

The operator requests a variance to have the option of running a speed head for setting the intermediate #1 and #2 strings. In the case of running a speed head with landing mandrel for 9-5/8" and 7" casing, a minimum of a 5M BOPE system will be installed after surface casing is set. BOP test pressures will be 250 psi low and 5000 psi high with the annular being tested to 250 psi low and 2500 psi high before drilling below surface shoe. After 7" casing is set in the speed head, the BOP will then be lifted to install another casing head section for the setting of the production string. We will nipple the casing head and BOP back up and a minimum of a 5M BOPE system will be installed. The pressure tests will be made to 250 psi low and 5000 psi high and the annular will be tested to 250 psi low and 2500 psi high. A diagram of the speed head is attached.

Matador Resources 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 (see Exhibit E-2). The hose is not required by the manufacturer to be anchored. In the event the specific hose is not available, one of equal or higher rating will be used.

Proposed Mud System:

| Name | Hole Size | Mud Weight | Visc | Fluid Loss | Type Mud |
|---|---|---|---|---|---|
| Surface | 17-1/2" | 8.30 | 28 | NC | FW Spud Mud |
| Intermediate | 12-1/4" | 10.00 | 30-32 | NC | Brine Water |
| Intermediate 2 | 8-3/4" | 9.00 | 30-32 | NC | FW/Cut Brine |
| Production | 6-1/8" | 12.50 | 50-60 | <10 | OBM |

Drilling Operations Plan
Dr. Ireland Fed Com #214H
Matador Resources Company
Sec. 19, 23S, 35E
Lea County, NM

All necessary mud products for weight addition and fluid loss control will be on location at all times. Mud program subject to change due to hole conditions.

The Mud Monitoring System is an electronic Pason system satisfying requirements of Onshore Order 1.

Testing, Logging & Coring Program:

- Mud Logging Program: 2 man unit from 5400 – TD
- Electric Logging Program: No electric logs are planned at this time. GR will be collected through the MWD tools from Inter. Csg to TD
- No DSTs or cores are planned at this time
- CBL w/ CCL from as far as gravity will let it fall to TOC

Potential Hazards:

No abnormal pressures or temperatures are expected. In accordance with Onshore Order 6, Matador does not anticipate that there will be enough $H_2S$ from the surface to the Bone Spring formations 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 we have an $H_2S$ safety package on all wells, attached is an "$H_2S$ Drilling Operations Plan". 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

Estimated BHP: 6450
Estimated BHT: 180°

Construction and Drilling:

Road and location construction will begin after BLM approval of APD. Anticipated spud date as soon as approved. Drilling expected to take 35 days. If production casing is run an additional 30 days will be required to complete and construct surface facilities

Exhibit E-2: Co-Flex Certifications
Dr. Ireland Fed Com #214H
Matador Resources Company

Midwest Hose & Specialty, Inc.

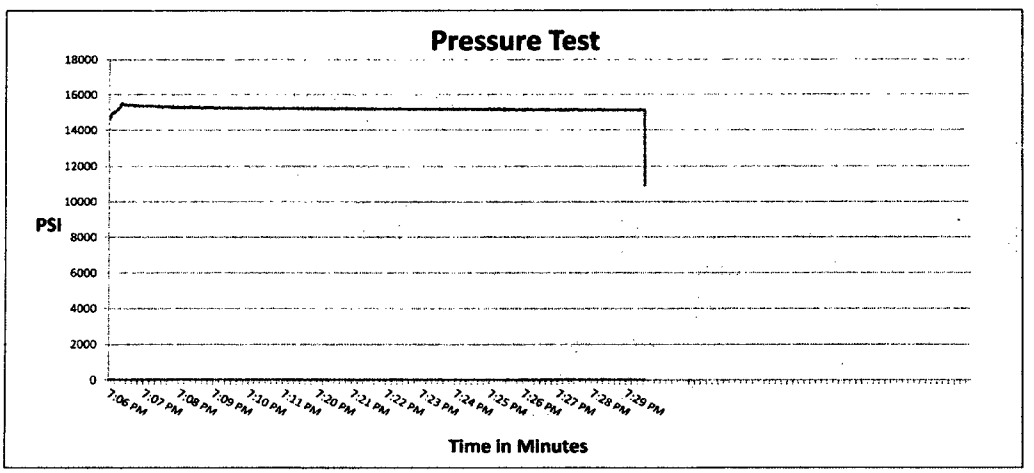
# Internal Hydrostatic Test Graph

**December 8, 2014**

**Customer:** Patterson

**Pick Ticket #:** 284918

| Hose Specifications | | Verification | |
|---|---|---|---|
| **Hose Type** | **Length** | **Type of Fitting** | **Coupling Method** |
| Ck | 10' | 4-1/16 10K | Swage |
| **I.D.** | **O.D.** | **Die Size** | **Final O.D.** |
| 3" | 4.79" | 5.37" | 5.37" |
| **Working Pressure** | **Burst Pressure** | **Hose Serial #** | **Hose Assembly Serial #** |
| 10000 PSI | Standard Safety Multiplier Applies | 10490 | 284918-2 |




| Test Pressure | Time Held at Test Pressure | Actual Burst Pressure | Peak Pressure |
|---|---|---|---|
| 15000 PSI | 15 2/4 Minutes | | 15732 PSI |

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

**Tested By:** *Tyler Hill*

x

**Approved By:** *Ryan Adams*

x

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 |
| Date Assembled | 12/8/2014 | Hose Grade | MUD |
| Location Assembled | OKC | Hose Working Pressure | 10000 |
| Sales Order # | 236404 | Hose Lot # and Date Code | 10490-01/13 |
| Customer Purchase Order # | 260471 | Hose I.D. (Inches) | 3" |
| Assembly Serial # (Pick Ticket #) | 287918-2 | Hose O.D. (Inches) | 5.30" |
| Hose Assembly Length | 10' | Armor (yes/no) | YES |

| Fittings | | | |
|---|---|---|---|
| End A | | End B | |
| Stem (Part and Revision #) | R3.0X64WB | Stem (Part and Revision #) | R3.0X64WB |
| Stem (Heat #) | 91996 | Stem (Heat #) | 91996 |
| Ferrule (Part and Revision #) | RF3.0 | Ferrule (Part and Revision #) | RF3.0 |
| Ferrule (Heat #) | 37DA5631 | Ferrule (Heat #) | 37DA5631 |
| Connection (Part #) | 4 1/16 10K | Connection (Part #) | 4 1/16 10K |
| Connection (Heat #) | | Connection (Heat #) | |
| Dies Used | 5.37 | Dies Used | 5.37 |

| Hydrostatic Test Requirements | | |
|---|---|---|
| Test Pressure (psi) | 15,000 | Hose assembly was tested with ambient water temperature. |
| Test Pressure Hold Time (minutes) | 15 1/2 | |

| Date Tested | Tested By | Approved By |
|---|---|---|
| 12/8/2014 | | |

Midwest Hose
& Specialty, Inc.

## Certificate of Conformity

| | |
|---|---|
| *Customer:* **PATTERSON B&E** | *Customer P.O.#* **260471** |
| *Sales Order #* **236404** | *Date Assembled:* **12/8/2014** |

## Specifications

| | | | |
|---|---|---|---|
| *Hose Assembly Type:* | **Choke & Kill** | | |
| *Assembly Serial #* | **287918-2** | *Hose Lot # and Date Code* | **10490-01/13** |
| *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* |
|---|---|
| Ryan Adams | **12/9/2014** |

Exhibit E-2: Co-Flex Certifications
Dr. Ireland Fed Com #214H
Matador Resources Company

Midwest Hose & Specialty, Inc.

# Internal Hydrostatic Test Graph

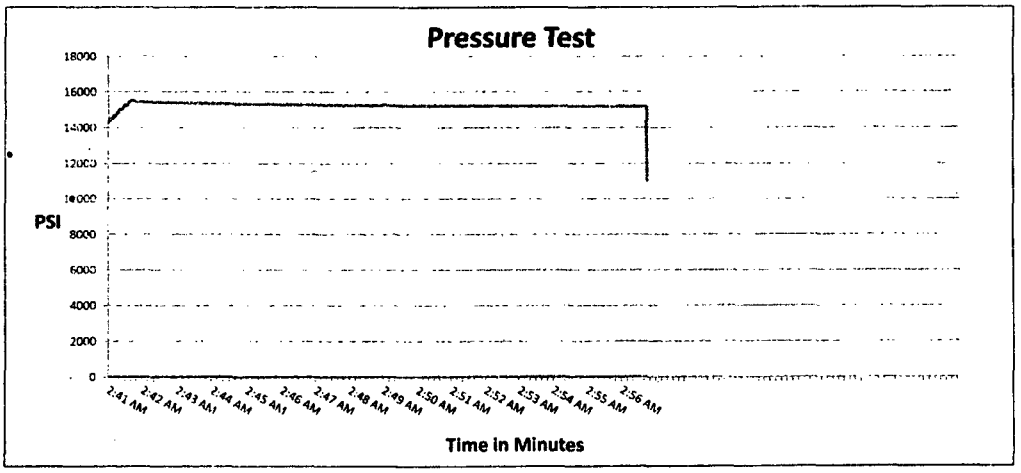
December 9, 2014

**Customer:** Patterson

**Pick Ticket #:** 284918

R297

| Hose Specifications | | Verification | |
|---|---|---|---|
| **Hose Type** | **Length** | **Type of Fitting** | **Coupling Method** |
| Ck | 20' | 4-1/16 10K | Swage |
| **I.D.** | **O.D.** | **Die Size** | **Final O.D.** |
| 3" | 4.77" | 5.37" | 5.40" |
| **Working Pressure** | **Burst Pressure** | **Hose Serial #** | **Hose Assembly Serial #** |
| 10000 PSI | Standard Safety Multiplier Applies | 10490 | 284918-1 |




| Test Pressure | Time Held at Test Pressure | Actual Burst Pressure | Peak Pressure |
|---|---|---|---|
| 15000 PSI | 15 2/4 Minutes | | 15893 PSI |

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

**Tested By:** *Tyler Hill*

X

**Approved By:** *Ryan Adams*

X

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 |
| Date Assembled | 12/8/2014 | Hose Grade | MUD |
| Location Assembled | OKC | Hose Working Pressure | 10000 |
| Sales Order # | 236404 | Hose Lot # and Date Code | 10490-01/13 |
| Customer Purchase Order # | 260471 | Hose I.D. (Inches) | 3" |
| Assembly Serial # (Pick Ticket #) | 287918-1 | Hose O.D. (Inches) | 5.30" |
| Hose Assembly Length | 20' | Armor (yes/no) | YES |

| Fittings | | | |
|---|---|---|---|
| End A | | End B | |
| Stem (Part and Revision #) | R3.0X64WB | Stem (Part and Revision #) | R3.0X64WB |
| Stem (Heat #) | A141420 | Stem (Heat #) | A141420 |
| Ferrule (Part and Revision #) | RF3.0 | Ferrule (Part and Revision #) | RF3.0 |
| Ferrule (Heat #) | 37DA5631 | Ferrule (Heat #) | 37DA5631 |
| Connection (Part #) | 4 1/16 10K | Connection (Part #) | 4 1/16 10K |
| Connection (Heat #) | V3579 | Connection (Heat #) | V3579 |
| Dies Used | 5.37 | Dies Used | 5.37 |

| Hydrostatic Test Requirements | | |
|---|---|---|
| Test Pressure (psi) | 15,000 | Hose assembly was tested with ambient water temperature. |
| Test Pressure Hold Time (minutes) | 15 1/2 | |

| Date Tested | Tested By | Approved By |
|---|---|---|
| 12/9/2014 | | |

Midwest Hose
& Specialty, Inc.

## Certificate of Conformity

| | |
|---|---|
| *Customer:* **PATTERSON B&E** | *Customer P.O.#* **260471** |
| *Sales Order #* **236404** | *Date Assembled:* **12/8/2014** |

## Specifications

| | | | |
|---|---|---|---|
| *Hose Assembly Type:* | **Choke & Kill** | | |
| *Assembly Serial #* | **287918-1** | *Hose Lot # and Date Code* | **10490-01/13** |
| *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* |
|---|---|
| | **12/9/2014** |

Exhibit E-2: Co-Flex Certifications
Dr. Ireland Fed Com #214H
Matador Resources Company

Midwest Hose & Specialty, Inc.

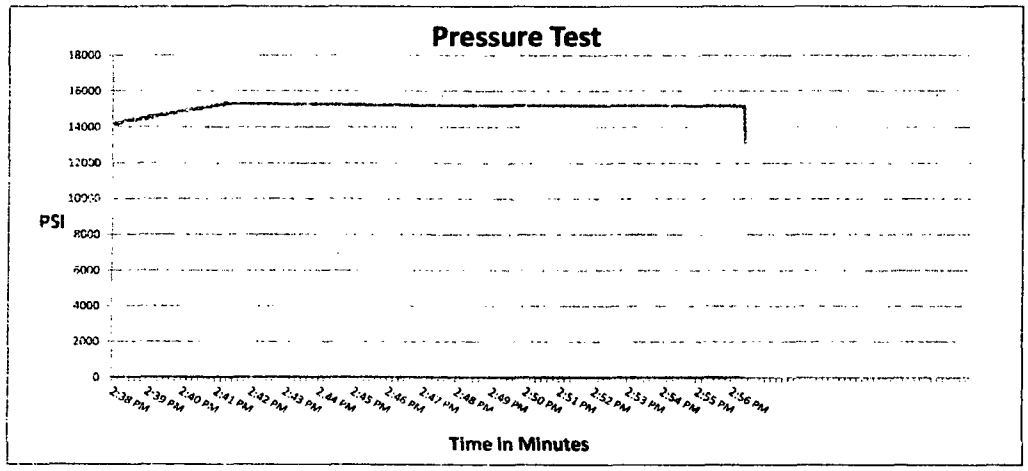
# Internal Hydrostatic Test Graph

December 9, 201

**Customer:** Patterson

**Pick Ticket #:** 284918

| Hose Specifications | | Verification | |
|---|---|---|---|
| **Hose Type** | **Length** | **Type of Fitting** | **Coupling Method** |
| Mud | 70' | 4 1/16 10K | Swage |
| **I.D.** | **O.D.** | **Die Size** | **Final O.D.** |
| 3" | 4.79" | 5.37" | 5.37" |
| **Working Pressure** | **Burst Pressure** | **Hose Serial #** | **Hose Assembly Serial #** |
| 10000 PSI | Standard Safety Multiplier Applies | 10490 | 284918-3 |




| Test Pressure | Time Held at Test Pressure | Actual Burst Pressure | Peak Pressure |
|---|---|---|---|
| 15000 PSI | 16 3/4 Minutes | | 15410 PSI |

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

**Tested By:** *Tyler Hill*

**Approved By:** *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 |
| Date Assembled | 12/8/2014 | Hose Grade | MUD |
| Location Assembled | OKC | Hose Working Pressure | 10000 |
| Sales Order # | 236404 | Hose Lot # and Date Code | 10490-01/13 |
| Customer Purchase Order # | 260471 | Hose I.D. (Inches) | 3" |
| Assembly Serial # (Pick Ticket #) | 287918-3 | Hose O.D. (Inches) | 5.23" |
| Hose Assembly Length | 70' | Armor (yes/no) | YES |

| Fittings | | | |
|---|---|---|---|
| End A | | End B | |
| Stem (Part and Revision #) | R3.0X64WB | Stem (Part and Revision #) | R3.0X64WB |
| Stem (Heat #) | A141420 | Stem (Heat #) | A141420 |
| Ferrule (Part and Revision #) | RF3.0 | Ferrule (Part and Revision #) | RF3.0 |
| Ferrule (Heat #) | 37DA5631 | Ferrule (Heat #) | 37DA5631 |
| Connection (Part #) | 4 1/16 10K | Connection (Part #) | 4 1/16 10K |
| Connection (Heat #) | | Connection (Heat #) | |
| Dies Used | 5.37 | Dies Used | 5.37 |

| Hydrostatic Test Requirements | | |
|---|---|---|
| Test Pressure (psi) | 15,000 | Hose assembly was tested with ambient water temperature. |
| Test Pressure Hold Time (minutes) | 16 3/4 | |

| Date Tested | Tested By | Approved By |
|---|---|---|
| 12/9/2014 | | |

Midwest Hose
& Specialty, Inc.

## Certificate of Conformity

| | |
|---|---|
| *Customer:* **PATTERSON B&E** | *Customer P.O.#* **260471** |
| *Sales Order #* **236404** | *Date Assembled:* **12/8/2014** |

## Specifications

| | | | |
|---|---|---|---|
| *Hose Assembly Type:* | **Choke & Kill** | | |
| *Assembly Serial #* | **287918-3** | *Hose Lot # and Date Code* | **10490-01/13** |
| *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*** |
|---|---|
| Ryan Adams | **12/9/2014** |

**APD ID:** 10400028893 **Submission Date:** 03/30/2018

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR IRELAND FED COM **Well Number:** 214H

**Well Type:** OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

## Section 1 - Existing Roads

**Will existing roads be used?** YES

**Existing Road Map:**

EP_DR_IRELAND_FED_COM_ROAD_EASEMENT_34_S_20180214143930.PDF
EP_DR_IRELAND_FED_COM_ROAD_EASEMENT_33_S_20180214143929.PDF
EP_DR_IRELAND_FED_COM_ROAD_EASEMENT_36_S_20180214143932.PDF
EP_DR_IRELAND_FED_COM_ROAD_EASEMENT_24_S_20180214143927.PDF
EP_DR_IRELAND_FED_COM_ROAD_EASEMENT_25_S_20180214143928.PDF
EP_DR_IRELAND_FED_COM_ROAD_EASEMENT_19_S_20180214155448.PDF
EP_DR_IRELAND_FED_COM_ROAD_EASEMENT_35_S_20180214143930.PDF

**Existing Road Purpose:** ACCESS,FLUID TRANSPORT **Row(s) Exist?** NO

### ROW ID(s)

**ID:**

**Do the existing roads need to be improved?** YES

**Existing Road Improvement Description:** Caliche cap

**Existing Road Improvement Attachment:**

## Section 2 - New or Reconstructed Access Roads

**Will new roads be needed?** YES

**New Road Map:**

Project_Area_APD_Layout_20180226_20180226113622.jpg

**New road type:** LOCAL

**Length:** 1395 Feet **Width (ft.):** 30

**Max slope (%):** 0 **Max grade (%):** 1

**Army Corp of Engineers (ACOE) permit required?** NO

**ACOE Permit Number(s):**

**New road travel width:** 14

**New road access erosion control:** Crowned and ditched

**New road access plan or profile prepared?** NO

**New road access plan attachment:**

**Access road engineering design?** NO

**Access road engineering design attachment:**

**Access surfacing type:** OTHER

**Access topsoil source:** ONSITE

**Access surfacing type description:** Caliche

**Access onsite topsoil source depth:** 6

**Offsite topsoil source description:**

**Onsite topsoil removal process:** Grader

**Access other construction information:**

**Access miscellaneous information:**

**Number of access turnouts:** **Access turnout map:**

## Drainage Control

**New road drainage crossing:** OTHER

**Drainage Control comments:** No drainages present

**Road Drainage Control Structures (DCS) description:** Ditches on either side of road

**Road Drainage Control Structures (DCS) attachment:**

## Access Additional Attachments

**Additional Attachment(s):**

## Section 3 - Location of Existing Wells

**Existing Wells Map?** YES

**Attach Well map:**

Existing_Well_Map_Slot_4_20180329095822.JPG

**Existing Wells description:**

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

**Submit or defer a Proposed Production Facilities plan?** SUBMIT

**Production Facilities description:**

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR IRELAND FED COM **Well Number:** 214H

**Production Facilities map:**

Location_Layout_20180329095846.pdf

44924p01_Facility_Layout_S4_20180329_20180329162542.jpg

## Section 5 - Location and Types of Water Supply

### Water Source Table

**Water source use type:** DUST CONTROL, INTERMEDIATE/PRODUCTION CASING, STIMULATION, SURFACE CASING

**Water source type:** RECYCLED

**Describe type:**

**Source longitude:**

**Source latitude:**

**Source datum:**

**Water source permit type:** PRIVATE CONTRACT

**Source land ownership:** PRIVATE

**Water source transport method:** TRUCKING

**Source transportation land ownership:** PRIVATE

**Water source volume (barrels):** 180000

**Source volume (acre-feet):** 23.200758

**Source volume (gal):** 7560000

**Water source and transportation map:**

Dr._Ireland_Water_Information_20180213161731.jpg

**Water source comments:**

**New water well?** NO

### New Water Well Info

**Well latitude:** **Well Longitude:** **Well datum:**

**Well target aquifer:**

**Est. depth to top of aquifer(ft):** **Est thickness of aquifer:**

**Aquifer comments:**

**Aquifer documentation:**

**Well depth (ft):** **Well casing type:**

**Well casing outside diameter (in.):** **Well casing inside diameter (in.):**

**New water well casing?** **Used casing source:**

**Drilling method:** **Drill material:**

**Grout material:** **Grout depth:**

**Casing length (ft.):** **Casing top depth (ft.):**

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR IRELAND FED COM **Well Number:** 214H

**Well Production type:** **Completion Method:**

**Water well additional information:**

**State appropriation permit:**

**Additional information attachment:**

## Section 6 - Construction Materials

**Construction Materials description:** Caliche from BLM approved source.

**Construction Materials source location attachment:**

## Section 7 - Methods for Handling Waste

**Waste type:** DRILLING

**Waste content description:** Drill cuttings, mud, salts, and other chemicals

**Amount of waste:** 2000 barrels

**Waste disposal frequency :** Daily

**Safe containment description:** Steel tanks

**Safe containmant attachment:**

**Waste disposal type:** HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE

**Disposal type description:**

**Disposal location description:** Halfway, NM

## Reserve Pit

**Reserve Pit being used?** NO

**Temporary disposal of produced water into reserve pit?**

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

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

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

**Reserve pit liner**

**Reserve pit liner specifications and installation description**

## Cuttings Area

**Cuttings Area being used?** NO

**Are you storing cuttings on location?** NO

**Description of cuttings location**

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

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

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

**WCuttings area liner**

**Cuttings area liner specifications and installation description**

## Section 8 - Ancillary Facilities

**Are you requesting any Ancillary Facilities?:** NO

**Ancillary Facilities attachment:**

**Comments:**

## Section 9 - Well Site Layout

**Well Site Layout Diagram:**

Location_Layout_20180329105208.pdf

**Comments:**

## Section 10 - Plans for Surface Reclamation

**Type of disturbance:** New Surface Disturbance **Multiple Well Pad Name:** DR IRELAND FEDERAL

**Multiple Well Pad Number:** 4

**Recontouring attachment:**

**Drainage/Erosion control construction:** Crowned and ditched

**Drainage/Erosion control reclamation:** Harrowed on the contour

| | | |
|---|---|---|
| **Well pad proposed disturbance (acres):** 5.72 | **Well pad interim reclamation (acres):** 1.58 | **Well pad long term disturbance (acres):** 4.14 |
| **Road proposed disturbance (acres):** 0 | **Road interim reclamation (acres):** 0 | **Road long term disturbance (acres):** 0 |
| **Powerline proposed disturbance (acres):** 0 | **Powerline interim reclamation (acres):** 0 | **Powerline long term disturbance (acres):** 0 |
| **Pipeline proposed disturbance (acres):** 0 | **Pipeline interim reclamation (acres):** 0 | **Pipeline long term disturbance (acres):** 0 |
| **Other proposed disturbance (acres):** 0 | **Other interim reclamation (acres):** 0 | **Other long term disturbance (acres):** 0 |
| **Total proposed disturbance:** 5.72 | **Total interim reclamation:** 1.58 | **Total long term disturbance:** 4.14 |

**Disturbance Comments:**

**Reconstruction method:** Interim reclamation will be completed within 6 months of completing the last well on the pad. Disturbed areas will be contoured to match pre-construction grades. Once the last well is plugged, then the rest of the pad

will be similarly reclaimed within 6 months of plugging.

**Topsoil redistribution:** Soil and brush will be evenly spread over disturbed areas and harrowed on the contour. Disturbed areas will be seeded in accordance with the surface owner's requirements.
**Soil treatment:** None planned.

**Existing Vegetation at the well pad:**

**Existing Vegetation at the well pad attachment:**

**Existing Vegetation Community at the road:**

**Existing Vegetation Community at the road attachment:**

**Existing Vegetation Community at the pipeline:**

**Existing Vegetation Community at the pipeline attachment:**

**Existing Vegetation Community at other disturbances:**

**Existing Vegetation Community at other disturbances attachment:**

**Non native seed used?** NO

**Non native seed description:**

**Seedling transplant description:**

**Will seedlings be transplanted for this project?** NO

**Seedling transplant description attachment:**

**Will seed be harvested for use in site reclamation?** NO

**Seed harvest description:**

**Seed harvest description attachment:**

## Seed Management

### Seed Table

**Seed type:**

**Seed source:**

**Seed name:**

**Source name:**

**Source address:**

**Source phone:**

**Seed cultivar:**

**Seed use location:**

**PLS pounds per acre:** **Proposed seeding season:**

| Seed Summary | |
|---|---|
| **Seed Type** | **Pounds/Acre** |

**Total pounds/Acre:**

**Seed reclamation attachment:**

## Operator Contact/Responsible Official Contact Info

**First Name:** **Last Name:**

**Phone:** **Email:**

**Seedbed prep:**

**Seed BMP:**

**Seed method:**

**Existing invasive species?** NO

**Existing invasive species treatment description:**

**Existing invasive species treatment attachment:**

**Weed treatment plan description:** To BLM standards

**Weed treatment plan attachment:**

**Monitoring plan description:** To BLM standards

**Monitoring plan attachment:**

**Success standards:** To BLM satisfaction

**Pit closure description:** No pit

**Pit closure attachment:**

## Section 11 - Surface Ownership

**Disturbance type:** WELL PAD

**Describe:**

**Surface Owner:** PRIVATE OWNERSHIP

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:** **USFS Ranger District:**

**Disturbance type:** EXISTING ACCESS ROAD

**Describe:**

**Surface Owner:** PRIVATE OWNERSHIP,STATE GOVERNMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:** CARLSBAD, NM

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:** **USFS Ranger District:**

**Disturbance type:** NEW ACCESS ROAD

**Describe:**

**Surface Owner:** PRIVATE OWNERSHIP

**Other surface owner description:**

**BIA Local Office:**

**Operator Name:** MATADOR PRODUCTION COMPANY

**Well Name:** DR IRELAND FED COM **Well Number:** 214H

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:** **USFS Ranger District:**

## Section 12 - Other Information

**Right of Way needed?** NO **Use APD as ROW?**

**ROW Type(s):**

## ROW Applications

**SUPO Additional Information:**

**Use a previously conducted onsite?** YES

**Previous Onsite information:** Onsite conducted for four slots and water tank with Vance Wolf on 10/5/2017.

## Other SUPO Attachment

## Section 1 - General

**Would you like to address long-term produced water disposal?** NO

## Section 2 - Lined Pits

**Would you like to utilize Lined Pit PWD options?** NO

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:**

**PWD disturbance (acres):**

**Lined pit PWD on or off channel:**

**Lined pit PWD discharge volume (bbl/day):**

**Lined pit specifications:**

**Pit liner description:**

**Pit liner manufacturers information:**

**Precipitated solids disposal:**

**Decribe precipitated solids disposal:**

**Precipitated solids disposal permit:**

**Lined pit precipitated solids disposal schedule:**

**Lined pit precipitated solids disposal schedule attachment:**

**Lined pit reclamation description:**

**Lined pit reclamation attachment:**

**Leak detection system description:**

**Leak detection system attachment:**

**Lined pit Monitor description:**

**Lined pit Monitor attachment:**

**Lined pit: do you have a reclamation bond for the pit?**

**Is the reclamation bond a rider under the BLM bond?**

**Lined pit bond number:**

**Lined pit bond amount:**

**Additional bond information attachment:**

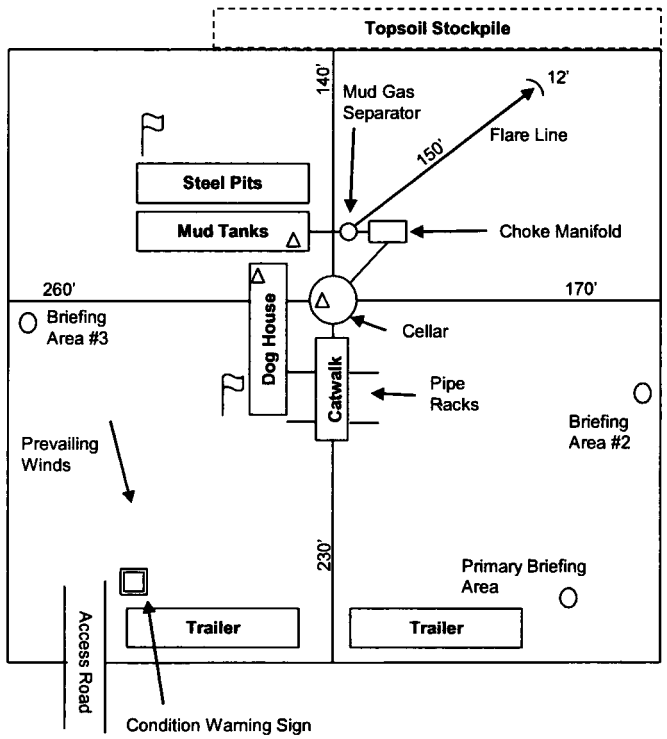
# Rig Diagram

Exhibit E-3: Rig Diagram
Dr. Ireland Fed Com #214H
Matador Resources Company
19-23S-35E
SHL 257' FSL & 399' FEL
BHL 240' FNL & 330' FEL
Lea County, NM

Wind Direction Indicator

H2S Monitors

Briefing Areas



## Section 3 - Unlined Pits

**Would you like to utilize Unlined Pit PWD options?** NO

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:** **PWD disturbance (acres):**

**Unlined pit PWD on or off channel:**

**Unlined pit PWD discharge volume (bbl/day):**

**Unlined pit specifications:**

**Precipitated solids disposal:**

**Decribe precipitated solids disposal:**

**Precipitated solids disposal permit:**

**Unlined pit precipitated solids disposal schedule:**

**Unlined pit precipitated solids disposal schedule attachment:**

**Unlined pit reclamation description:**

**Unlined pit reclamation attachment:**

**Unlined pit Monitor description:**

**Unlined pit Monitor attachment:**

**Do you propose to put the produced water to beneficial use?**

**Beneficial use user confirmation:**

**Estimated depth of the shallowest aquifer (feet):**

**Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?**

**TDS lab results:**

**Geologic and hydrologic evidence:**

**State authorization:**

**Unlined Produced Water Pit Estimated percolation:**

**Unlined pit: do you have a reclamation bond for the pit?**

**Is the reclamation bond a rider under the BLM bond?**

**Unlined pit bond number:**

**Unlined pit bond amount:**

**Additional bond information attachment:**

## Section 4 - Injection

**Would you like to utilize Injection PWD options?** NO

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:** **PWD disturbance (acres):**

**Injection PWD discharge volume (bbl/day):**

**Injection well mineral owner:**

**Injection well type:**

**Injection well number:** **Injection well name:**

**Assigned injection well API number?** **Injection well API number:**

**Injection well new surface disturbance (acres):**

**Minerals protection information:**

**Mineral protection attachment:**

**Underground Injection Control (UIC) Permit?**

**UIC Permit attachment:**

## Section 5 - Surface Discharge

**Would you like to utilize Surface Discharge PWD options?** NO

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:** **PWD disturbance (acres):**

**Surface discharge PWD discharge volume (bbl/day):**

**Surface Discharge NPDES Permit?**

**Surface Discharge NPDES Permit attachment:**

**Surface Discharge site facilities information:**

**Surface discharge site facilities map:**

## Section 6 - Other

**Would you like to utilize Other PWD options?** NO

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:** **PWD disturbance (acres):**

**Other PWD discharge volume (bbl/day):**

**Other PWD type description:**

**Other PWD type attachment:**

**Have other regulatory requirements been met?**

**Other regulatory requirements attachment:**

AFMSS

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

# Bond Info Data Report

07/19/2018

## Bond Information

**Federal/Indian APD:** FED

**BLM Bond number:** NMB001079

**BIA Bond number:**

**Do you have a reclamation bond?** NO

**Is the reclamation bond a rider under the BLM bond?**

**Is the reclamation bond BLM or Forest Service?**

**BLM reclamation bond number:**

**Forest Service reclamation bond number:**

**Forest Service reclamation bond attachment:**

**Reclamation bond number:**

**Reclamation bond amount:**

**Reclamation bond rider amount:**

**Additional reclamation bond information attachment:**