

Confidentiality Requested:

Yes No

**KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION**

Form ACO-1

January 2018

Form must be Typed

Form must be Signed

All blanks must be Filled

**WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE**

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

New Well Re-Entry Workover

Oil WSW SWD

Gas DH EOR

OG GSW

CM (Coal Bed Methane)

Cathodic Other (Core, Expl., etc.): _____

If Workover/Re-entry: Old Well Info as follows:

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

Deepening Re-perf. Conv. to EOR Conv. to SWD
 Plug Back Liner Conv. to GSW Conv. to Producer

Commingled Permit #: _____

Dual Completion Permit #: _____

SWD Permit #: _____

EOR Permit #: _____

GSW Permit #: _____

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE NW SE SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West

County: _____ Permit #: _____

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

Confidentiality Requested

Date: _____

Confidential Release Date: _____

Wireline Log Received Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT I II III Approved by: _____ Date: _____

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Geologist Report / Mud Logs <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run:	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
--	---

CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

1. Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*
3. Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? Yes No *(If No, fill out Page Three of the ACO-1)*

Date of first Production/Injection or Resumed Production/Injection:	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____			
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
---	---	------------------------------------

Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
----------------	-------	---------	------------	--

Form	ACO1 - Well Completion
Operator	Merit Energy Company, LLC
Well Name	CIRCLE 28-1
Doc ID	1356939

All Electric Logs Run

ANNULAR HOLE VOLUME LOG
ARRAY COMPENSATED TRUE RESISTIVITY LOG 1
ARRAY COMPENSATED TRUE RESISTIVITY TVD LOG 1
ARRAY COMPENSATED TRUE RESISTIVITY LOG 2
ARRAY COMPENSATED TRUE RESISTIVITY LOG 5
BOREHOLE SONIC ARRAY LOG
BOREHOLE SONIC ARRAY TVD LOG
MICROLOG TVD
MICROLOG
QUAD COMBO TVD LOG
QUIAD COMBO
REPEAT SECTION
SPECTRAL DENSITY DUAL SPACED NEUTRON LOG
SPECTRAL DENSITY DUAL SPACED TVD NEUTRON LOG

Form	ACO1 - Well Completion
Operator	Merit Energy Company, LLC
Well Name	CIRCLE 28-1
Doc ID	1356939

Tops

Name	Top	Datum
HEEBNER	924	
TORONTO	3945	
LANSING	4014	
MARMATON	4522	
PAWNEE	4612	
CHEROKEE	4655	
MORROW	4867	
CHESTER	4904	
ST GENEVIEVE	5007	
ST LOUIS	5046	

Form	ACO1 - Well Completion
Operator	Merit Energy Company, LLC
Well Name	CIRCLE 28-1
Doc ID	1356939

Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
4	5000-5006 Lower Morrow		5000-5006
3	4962-4973 Upper Morrow	Acid-3000 bbls 15% HCL, 30 bbls 2% KCL (bioacid)	4962-4973
		Frac-642 bbls total load, 13,000,00 total N2	4962-4973

Field Ticket Number: Lib1702161738	Field Ticket Date:	Thursday, February 16, 2017
---	---------------------------	-----------------------------

Bill To:
MERIT ENERGY COMPANY
Liberal, KS 67901
P O Box 1293 / 1900 W 2nd St

Job Name: 01 Surface **Set@1668**
Well Location: FINNEY, KS
Well Name: Circle
Well Number: 28-1
Well Type: New Well
Rig Number: Duke Drilling # 9
Shipping Point: Liberal, KS
Sales Office: Mid Con

PERSONEL		EQUIPMENT	
Gerardo Burciaga	Jose Calderon	868-4/642-6	955-4/554-5
Carlos Ibarra	Hector Esqueda	531-4/541-5	1039-2

SERVICES - SERVICES - SERVICES							
Description	QTY	UOM	Unit Amt	Gross Amt	Unit Net	Discount	Net Amount
PUMP, CASING CEMENT 1001-2000 FT	1.00	min. 4 hr	2,213.75	2213.75	774.81	65.0%	774.81
CMLP	1.00	per day	275.00	275.00	96.25	65.0%	96.25
PHDL	730.00	per cu. Ft.	2.48	1810.40	0.87	65.0%	633.64
DRYG	1576.00	ton-mile	2.75	4334.00	0.96	65.0%	1,516.90
MILV	50.00	per mile	4.40	220.00	1.54	65.0%	77.00
MIHV	50.00	per mile	7.70	385.00	2.70	65.0%	134.75

FLOAT EQUIPMENT -- FLOAT EQUIPMENT -- FLOAT EQUIPMENT							
GS-8.625	1.00	each	460.00	460.00	207.00	55.0%	207.00
SSFC-8.625	1.00	each	1,214.00	1,214.00	546.30	55.0%	546.30
TRP - 8.625	1.00	each	131.00	131.00	58.95	55.0%	58.95

MATERIALS - MATERIALS - MATERIALS							
--	10.00	bbl	0.00	0.00	0.00	65.0%	0.00
CB-AMDAL	430.00	sack	26.57	11,425.10	9.30	65.0%	3,998.79
CA-100	1213.00	pound	1.10	1,334.30	0.39	65.0%	467.01
CLC-CPF	215.00	pound	2.97	638.55	1.04	65.0%	223.49
CCAC	175.00	sack	17.90	3,132.50	6.27	65.0%	1,096.38
CA-100	329.00	pound	1.10	361.90	0.39	65.0%	126.67
CLC-CPF	88.00	pound	2.97	261.36	1.04	65.0%	91.48

ADDITIONAL ITEMS - ADDITIONAL ITEMS - ADDITIONAL ITEMS							
Sugar	50.00	per pound	3.15	157.50	1.10	65.0%	55.13

	Services Total	Gross 9,238.15	Discount 6,004.80	Final 3,233.35
	Equipment Total	1,805.00	992.75	812.25
	Materials Total	17,153.71	11,149.91	6,003.80
	Additional Items	157.50	102.38	55.13
	Final Total	28,354.36	18,249.83	10,104.53

Allied Rep _____
Customer Agent: _____

*This output does NOT include taxes. Applicable sales tax will be billed on the final invoice.
Customer hereby acknowledges receipt of the materials and services described above and on the attached documents.
I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the following page.*

X 
Customer Signature

Field Ticket Total (USD):

\$10,104.53



Cementing Services
Field Ticket

Well Circle 28-1
AFE 53585
GL 83001075
Office Garden City
Date 2-16-17



Cement Job Summary

TIME	PRESSURE - (PSI)		FLUID PUMPED DATA		COMMENTS
AM/PM	CASING	ANNULUS	VOLUME	RATE (BPM)	
13:00					arrived to location
					waiting on casing crew to finish running the casing
15:20					rig up the iron head and manifold
15:40					prime up the pump truck
15:55					safety meeting
16:02	2800				pressure test line to 2800PSI
16:20	80		10	6.5	start the 10bbls spacer of fresh water
16:28	150		195	7	start the lead cement @ 12.10#
16:50	160		39	6	start the tail cement @ 15.20#
17:01					shut down (drop the plug) wash up tub
17:04	0		103	4	start the 103bbl displacement of fresh water
17:09	100		20	6.5	20bbls gone
17:12	200		40	6.5	40bbls gone
17:16	300		60	6	60bbls gone
17:32	480		80	6	80bbls gone
17:34	500		90	3	90bbls gone slow down the rate to 3bpm to land the plug
17:38	1050		103		landed plug @ 1050PSI wait a few minutes to make sure the floats are holding
					released the pressure and the floats held got 1/2bbl back to tank
					30bbls of cement circulated to surface
					rig down released from location @ 18:30



Remit to:
 BJ Services LLC
 P.O. Box 733585
 Dallas, TX 75373-3585

Cementing Services
 Field Ticket

Printed on 2/22/2017 at 9:25 AM

TAX ID 81-1373543

Field Ticket Number: Lib170222900	Field Ticket Date: Wednesday, February 22, 2017
-----------------------------------	---

Bill To:
 MERIT ENERGY COMPANY
 Liberal, KS 67901
 P O Box 1293 / 1900 W 2nd St

Job Name: 02 Production/Long String
Well Location: Finney, KS
Well Name: Circle
Well Number: 28-1
Well Type: New Well
Rig Number: Duke Drilling # 9
Shipping Point: Liberal, KS
Sales Office: Mid Con

Set@5167'
50sx RH

PERSONEL		EQUIPMENT	
James Peppin	Victor Garcia	994-4/550-5	868-4/642-5
Victor Corona Marta	Jaime Torrez		

SERVICES - SERVICES - SERVICES

Description	QTY	UOM	Unit Amt	Gross Amt	Unit Net	Discount	Net Amount
PUMP, CASING CEMENT 5001-6000 FT	1.00	min. 4 hr	3,099.25	3099.25	1,022.75	67.0%	1,022.75
CMLP	1.00	per day	275.00	275.00	90.75	67.0%	90.75
PHDL	386.00	per cu. Ft.	2.48	957.28	0.82	67.0%	315.90
DRYG	807.00	ton-mile	2.75	2219.25	0.91	67.0%	732.35
MILV	50.00	per mile	4.40	220.00	1.45	67.0%	72.60
MIHV	50.00	per mile	7.70	385.00	2.54	67.0%	127.05

FLOAT EQUIPMENT -- FLOAT EQUIPMENT -- FLOAT EQUIPMENT

GS-5.5	1.00	each	281.00	281.00	126.45	55.0%	126.45
SSFC-5.5	1.00	each	725.00	725.00	326.25	55.0%	326.25
TRP-5.5	1.00	each	85.00	85.00	38.25	55.0%	38.25

MATERIALS - MATERIALS - MATERIALS

CW-HVS	12.00	bbl	58.70	704.40	19.37	67.0%	232.45
CB-ASA	280.00	sack	23.50	6,580.00	7.76	67.0%	2,171.40
CFL-210	132.00	pound	18.90	2,494.80	6.24	67.0%	823.28
CLC-KOL	1400.00	pound	0.98	1,372.00	0.32	67.0%	452.76
CLC-CPF	70.00	pound	2.97	207.90	0.98	67.0%	68.61


ADDITIONAL ITEMS - ADDITIONAL ITEMS - ADDITIONAL ITEMS

Additional hours, in excess of set hours		per hour	440.00	0.00	145.20	67.0%	0.00
--	--	----------	--------	------	--------	-------	------

	Gross	Discount	Final
Services Total	7,155.78	4,794.37	2,361.41
Equipment Total	1,091.00	600.05	490.95
Materials Total	11,359.10	7,610.60	3,748.50
Additional Items	0.00	0.00	0.00
Final Total	19,605.88	13,005.02	6,600.86

Customer Agent: James Peppin
 Ronnie Gonzales

This output does NOT include taxes. Applicable sales tax will be billed on the final invoice.
 Customer hereby acknowledges receipt of the materials and services described above and on the attached documents.
 I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the following page.

x 
 Customer Signature

Field Ticket Total (USD):

\$6,600.86

GENERAL TERMS AND CONDITIONS

DEFINITIONS: In these terms and conditions, "ALLIED" shall mean Allied Oil & Gas Services, LLC, and "CUSTOMER" shall refer to the party identified by that term on the front of this contract. As applicable, "JOB" relates to the services described on the front side of this contract, "MERCHANDISE" refers to the material described on the front of this contract and to any other materials, products, or supplies used, sold, or furnished under the requirements of this contract.



Well Circle 28-1
AFE 53585
GL 8300 1075
Office Granden City
Date 2-22-17



BJ SERVICES, LLC NORTH AMERICAN TERMS AND CONDITIONS

All work orders for services ("Services" or "Work") and purchase orders for the supply of products or chemicals ("Products") (collectively, "Work Orders") to be provided by BJ Services LLC or its affiliates ("BJ") to its customers (each a "Customer") are subject to acceptance by BJ, and any Work Orders so accepted will be governed by the pricing proposal, the Work Order, and these Terms and Conditions, unless the Customer and BJ Services, LLC (collectively the "Parties") have executed a Master Service Agreement, which terms shall control.

1. PAYMENT TERMS

Unless alternate payment terms are specified or approved by the BJ Credit Department, all charges billed by BJ must be paid within thirty (30) days of the date of invoice. For invoices, unpaid after thirty (30) days, discounts from list price may be revoked, interest may be charged at the rate of ten percent (10%) per annum or the maximum legal rate, liens may be filed, and Customer shall pay BJ all costs of collection, including reasonable attorneys' fees and court costs, in addition to other amounts due. Operating, production or well conditions that prevent satisfactory operation of Services or Products do not relieve Customer of its payment responsibility.

2. CANCELLATION AND RETURNS

- A. Products: Product Orders may only be cancelled with written authorization from BJ. Customer may be charged a restocking charge of twenty-five percent (25%), plus any packing and transportation costs incurred. Products specially manufactured to Customer specifications, or orders for substantial quantities may not be cancelled. Delivered Products may only be returned for credit (less the restocking fee and transport costs) in unused, reusable condition, in original unopened containers.
- B. Services: In the event Customer cancels an order for Services without cause, Customer shall be liable for all reasonable costs incurred by BJ including mobilization/demobilization.

3. THIRD-PARTY CHARGES, TAXES

Customer shall pay all third-party charges, in compliance with BJ's current price list, and any sales, use, rental or other taxes that may be applicable. Customer shall pay all applicable customs, excise, import and other duties unless otherwise agreed in writing. Customer shall provide necessary import licenses and extensions.

4. INDEPENDENT CONTRACTOR

It is expressly understood that BJ is an independent contractor, and that neither BJ nor its principals, partners, employees or subcontractors are servants, agents or employees of Customer.

Where BJ provides Services in Louisiana, the Services provided by BJ and its subcontractors are an integral part of, and are essential to the ability of Customer to generate Customer's goods, products, and services, and therefore BJ and Customer agree that Customer is the statutory employer of BJ's employees and its subcontractor's employees under La. R.S. 23:1051 (A) (3).

5. LIABILITIES, RELEASES AND INDEMNIFICATION:

- A. In these Terms and Conditions (i) "BJ Group" means BJ, its parent, subsidiary, joint venturers, and affiliated or related companies; its subcontractors at any tier; and the officers, directors, employees, consultants, and agents of all of the foregoing; (ii) "Claims" means all claims, demands, causes of action, liabilities, damages, judgments, fines, penalties, awards, losses, costs, expenses (including, without limitation, attorneys' fees and costs of litigation) of any kind or character arising out of, or related to, the performance of the Services or Products provided; (iii) "Consequential Damages" means any indirect, special, punitive, exemplary or consequential damages or losses (even unforeseeable), and damages for lost production, lost revenue, loss of hold, control of well, lost profit, lost business, lost business opportunities, or charges for rig time, regardless of whether the same would be considered direct, indirect, special, punitive, exemplary or consequential damages or losses under applicable law; (iv) "Customer Group" means Customer, its parent, subsidiary and affiliated or related companies; its licensees, co-owners, partners, joint operators and joint venturers; its client or customer if it is not the end user of the Services or Products; its other contractors at any tier; and the officers, directors, employees, consultants, and agents of all of the foregoing; (v) "Pollution Claims" means all Claims relating to pollution or contamination of water, land, or air, including without limitation, adverse effects on the environment or any form of property, or any violation or alleged violation of environmental statutes, ordinances, laws, orders, rules and regulations; (vi) "Tools" means any of BJ Group's instruments, equipment, or tools, and (vii) "Waste" means any cuttings, muds, waste, water, or materials from the well that where Services are performed by BJ.
- B. BJ SHALL RELEASE, INDEMNIFY, DEFEND AND HOLD CUSTOMER GROUP HARMLESS FROM AND AGAINST ANY AND ALL CLAIMS ARISING OUT OF OR RELATED TO (I) PERSONAL OR BODILY INJURY, ILLNESS, SICKNESS, DISEASE OR DEATH OF ANY MEMBER OF BJ GROUP, AND (II) LOSS, DAMAGE OR DESTRUCTION OF REAL OR PERSONAL PROPERTY, WHETHER OWNED, LEASED, OR CHARTERED, OF ANY MEMBER OF BJ GROUP.
- C. CUSTOMER SHALL RELEASE, INDEMNIFY, DEFEND AND HOLD BJ GROUP HARMLESS FROM AND AGAINST ANY AND ALL CLAIMS ARISING OUT OF OR RELATED TO (I) PERSONAL OR

BODILY INJURY, ILLNESS, SICKNESS, DISEASE OR DEATH OF ANY MEMBER OF CUSTOMER GROUP, AND (II) LOSS, DAMAGE OR DESTRUCTION OF REAL OR PERSONAL PROPERTY, WHETHER OWNED, LEASED, OR CHARTERED, OF ANY MEMBER OF CUSTOMER GROUP.

- D. SUBJECT TO THE PERSONAL INJURY PROVISIONS OF ARTICLE 5(B) ABOVE, BJ SHALL PROTECT, DEFEND AND INDEMNIFY CUSTOMER GROUP FROM AND AGAINST ALL CLAIMS, DEMANDS AND CAUSES OF ACTION, INCLUDING POLLUTION CLAIMS, ARISING FROM POLLUTION OR CONTAMINATION WHICH ORIGINATES ABOVE THE SURFACE OF THE LAND OR WATER AND IS DIRECTLY ASSOCIATED WITH BJ GROUP'S EQUIPMENT OR OTHER EQUIPMENT IN ITS CONTROL, AND SHALL ASSUME ALL RESPONSIBILITY FOR CONTROL AND REMOVAL OF SAME.
- E. SUBJECT TO THE PERSONAL INJURY PROVISIONS OF 5(C) ABOVE, CUSTOMER SHALL PROTECT, DEFEND AND INDEMNIFY BJ GROUP FROM AND AGAINST ALL CLAIMS, DEMANDS, AND CAUSES OF ACTION ARISING DIRECTLY OR INDIRECTLY FROM ANY EXISTING POLLUTION AT THE SITE AND FROM ALL OTHER POLLUTION OR CONTAMINATION, INCLUDING BUT NOT LIMITED TO POLLUTION RESULTING FROM FIRE, BLOWOUT, CRATERING, SEEPAGE OR OTHER UNCONTROLLED FLOW OF OIL, GAS, OR OTHER SUBSTANCE; OR RELATED TO THE TRANSPORTATION, STORAGE, TREATMENT, DISPOSAL OR HANDLING OF WASTE, AND SHALL ASSUME ALL RESPONSIBILITY FOR CONTROL AND REMOVAL OF SAME.
- F. CUSTOMER SHALL RELEASE, DEFEND, INDEMNIFY AND HOLD BJ GROUP HARMLESS FROM AND AGAINST ANY CLAIMS FOR CONSEQUENTIAL DAMAGES ASSERTED BY OR IN FAVOR OF ANY MEMBER OF CUSTOMER GROUP. BJ SHALL RELEASE, DEFEND, INDEMNIFY AND HOLD CUSTOMER GROUP HARMLESS FROM AND AGAINST ANY CLAIMS FOR CONSEQUENTIAL DAMAGES ASSERTED BY OR IN FAVOR OF ANY MEMBER OF BJ GROUP.
- G. THE EXCLUSIONS OF LIABILITY, RELEASES AND INDEMNITIES SET FORTH IN THIS ARTICLE 5 APPLY TO ANY CLAIM(S) WITHOUT REGARD TO THE CAUSE(S) THEREOF, INCLUDING BUT NOT LIMITED TO PRE-EXISTING CONDITIONS, WHETHER SUCH CONDITIONS BE PATENT OR LATENT, THE UNSEAWORTHINESS OF ANY VESSEL OR VESSELS, IMPERFECTION OF MATERIAL, DEFECT OR FAILURE OF PRODUCTS OR EQUIPMENT, BREACH OF REPRESENTATION OR WARRANTY (EXPRESS OR IMPLIED), ULTRAHAZARDOUS ACTIVITY, STRICT LIABILITY, TORT, BREACH OF CONTRACT, BREACH OF DUTY (STATUTORY OR OTHERWISE), BREACH OF ANY SAFETY REQUIREMENT OR REGULATION, OR THE NEGLIGENCE, GROSS NEGLIGENCE, OR OTHER LEGAL FAULT OR RESPONSIBILITY OF ANY PERSON, PARTY, OR ENTITY (INCLUDING THE INDEMNIFIED OR RELEASED PARTY), WHETHER SUCH FORM OF NEGLIGENCE BE SOLE, JOINT OR CONCURRENT, ACTIVE OR PASSIVE. THE INDEMNITY PROVISIONS SET FORTH IN THIS ARTICLE 5 SHALL BE THE EXCLUSIVE REMEDIES AVAILABLE TO THE PARTIES FOR THE CLAIMS COVERED.

6. INSURANCE

Each Party agrees to support the indemnity obligations contained in Article 5 by carrying insurance (or qualified self-insurance) with reputable insurance companies in the following minimum amounts:

- A. Workers' Compensation Insurance complying with applicable state laws, and Employers' Liability Insurance in the amount of \$1,000,000 each accident for bodily injury by accident/\$1,000,000 each employee for bodily injury by disease/\$1,000,000 policy limit.
- B. Commercial General Liability Insurance, including Products and Completed operations aggregate, sudden and accidental pollution (which may be provided for in a separate policy), in the amount of \$1,000,000 combined single limit per occurrence/\$2,000,000 in the aggregate.
- C. Automobile Liability Insurance in the amount of \$1,000,000 combined single limit for Bodily Injury and Property Damage, including coverage for all owned, hired, and non-owned vehicles.
- D. Excess Liability Insurance over that required in A (for Employer's Liability only), and C in the minimum amount of \$5,000,000 each occurrence and in the aggregate, specifically including contractual liability coverage.

Upon written request, each party shall furnish to the other party certificates of insurance evidencing that adequate insurance to support each party's obligations has been secured. To the extent of each party's release and indemnity obligations, each party agrees that all such insurance policies shall (i) be primary to the other party's insurance, (ii) include the other party, its parent, subsidiary and affiliated or related companies, its subcontractors and other contractors, and its and their respective officers, directors, employees, consultants and agents as additional insured, and (iii) be endorsed to waive subrogation against the other party, its parent, subsidiary and affiliated or related companies, its subcontractors and other contractors, and its and their respective officers, directors, employees, consultants and agents.

7. CONFIDENTIALITY

Each party shall maintain all data and information obtained from the other party in strict confidence, subject only to disclosure required by law or legal process. The design, construction, application and operation of BJ's Services and Products embody proprietary and confidential information. Customer shall maintain this information in strict confidence and shall not disclose it to others, subject only to disclosure required by law or legal process.

HEADQUARTERS
(281) 408 2361

www.BJservices.com

11211 FM 2920 Rd.
Tomball, Texas 77375



B. ACCESS TO WELL AND WELL SITE STORAGE

Customer shall provide at its expense adequate access to and from the well site, and shall obtain all permits, licenses or other authorization required for BJ to enter upon work areas for the purposes contemplated. Customer shall provide proper storage space at the well site, meeting all applicable safety and security requirements and consistent with good industry practices, for the Tools and Products, including, without limitation, all radioactive materials. BJ reserves the right not to perform Work if the job or conditions of the location render such performance inadvisable.

9. RADIOACTIVE SOURCES

Customer agrees to comply with all applicable governmental regulations governing the use and handling of radioactive sources. In the event a radioactive source becomes stuck in a well, Customer, at Customer's sole risk and expense will make a reasonable attempt to recover such radioactive source in accordance with 10 C.F.R. § 39.15(a)(1)-(4) or other applicable regulations and use special precautions to prevent damaging the source during recovery operations. If the source cannot be recovered, Customer, at Customer's sole risk and expense, will isolate the radioactive material by cementing it in place or by other means consistent with 10 C.F.R. § 39.15 or other applicable statutes or regulations.

10. STANDARD OF PERFORMANCE

E. Services: BJ warrants (i) that all Services shall be performed in compliance with all applicable laws, rules and regulations (including all safety codes, statutes, regulations, precautions, and procedures) and utilizing all necessary Protective equipment and devices, (ii) that all Services shall be done with the utmost skill, care and diligence, in a good and workmanlike manner, in accordance with the terms hereof, the specifications set forth in the applicable Order, and good industry standards of performance and in a timely manner; and (iii) that BJ, its subcontractors and their employees are sufficiently experienced and suitably trained to perform the Services. In the event that the Services fail to conform to such specifications, BJ shall re-perform that part of the non-conforming Services, provided BJ is notified in writing by Customer prior to demobilization.

F. Products: BJ warrants that the Products shall conform to BJ's published specifications or the specifications agreed to in writing. If any of the Products fail to conform, BJ shall repair or replace the non-conforming Products, or issue credit to the Customer. In the event BJ is requested to develop, manufacture, test or use Products that are intended to satisfy a unique need identified by Customer and are not "standard" Products of BJ ("Specialty Products"), Customer recognizes and agrees that Specialty Products may not have or contain the same or similar characteristics as BJ's standard Products, including historical performance against which future performance can be measured. In developing, manufacturing, testing and using any Specialty Product, BJ will be relying upon information and specifications provided by Customer regarding its unique needs and will have no responsibility for the design, manufacture or engineering of any such Specialty Product. Upon inspection, if the Specialty Product fails to meet the specifications agreed to in writing by Customer, then BJ shall, at its option, repair or replace the non-conforming specialty Products with the type originally furnished to Customer or substitute with standard Products. BJ's warranty obligations are non-transferable and void if the non-conformity were caused by (i) Customer's failure to properly store or maintain the Products, (ii) abnormal well conditions, abrasive materials, corrosion due to aggressive fluids or incorrect specifications provided by Customer, (iii) unauthorized alteration of the Products, (iv) loss or damage while on Customer's site due to any negligence, vandalism or force majeure, or (v) use or handling by Customer in a manner inconsistent with BJ's recommendations. Further, BJ's warranty obligations shall terminate if Customer fails to perform its obligations under these Terms and Conditions. All transportation charges and removal and reinstallation charges related to the repair or replacement of non-conforming Products shall be borne by Customer, including shipment to BJ's facility.

G. Goods: BJ shall assign any vendor or supplier's warranty to Customer for any Products or goods purchased, to the extent such warranties are assignable.

H. Recommendations. Interpretations, research, analysis, recommendations, advice or interpretational data (specifically including, without limitation, any engineering designs, geological studies or analyses, well programs, reservoir models, production optimization or management programs) ("Recommendations") furnished by BJ are opinions based upon inferences from measurements, empirical relationships and assumptions, and industry practice. The inferences, assumptions and practices are not infallible, and with respect to which professional geologists, engineers, drilling consultants, and analysts may differ. Accordingly, BJ does not warrant the accuracy, correctness, or completeness of any Interpretations or Recommendations, or that reliance on its Interpretations and/or Recommendations will accomplish any particular results. CUSTOMER ASSUMES FULL RESPONSIBILITY FOR THE USE OF SUCH RECOMMENDATIONS AND FOR ITS DECISIONS.

OTHER THAN THE PROVISIONS IN THIS ARTICLE 10, BJ MAKES NO WARRANTY OR GUARANTEE OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE REGARDING ANY SERVICES, EQUIPMENT OR PRODUCTS. IN NO EVENT SHALL BJ BE LIABLE FOR CONSEQUENTIAL DAMAGES INCURRED BY CUSTOMER GROUP AS A RESULT OF DEFECTIVE OR NON-CONFORMING SERVICES, EQUIPMENT OR PRODUCTS.

11. INTELLECTUAL PROPERTY

BJ intends to protect its intellectual property. Customer shall not resell the Products (or drawings related thereto) to others or reverse engineer or permit others to reverse engineer for the purpose of manufacturing similar Products. BJ owns and has legal rights to practice certain copyrights, marks, patents or pending applications on certain technology and items related to the Services or Products furnished. In the event that BJ makes any improvements on such technology, then BJ shall own all such improvements, including drawings, specifications, calculations and other documents.

BJ warrants that the use or sale of Products will not infringe valid patents of others by reason of the use or sale of such Products, and hereby agrees to RELEASE, DEFEND, INDEMNIFY AND HOLD CUSTOMER GROUP HARMLESS FROM AND AGAINST ALL CLAIMS for infringement of any such patent, provided that Customer shall promptly notify BJ in writing upon receipt of any claim for infringement, or upon the filing of any such suit for infringement, whichever first occurs, and shall afford BJ full opportunity, at BJ's option and expense, to answer such claim or threat of suit, assume the control of the defense of such suit, and settle or compromise same in any way BJ sees fit. BJ does not warrant that such Products: (i) will not infringe any such patent when not of BJ's manufacture, or specially made, in whole or in part, to the Customer's design specifications; or (ii) if used or sold in combination with other materials or apparatus not in the practice of processes, will not, as a result of such combination or use, infringe any such patent, and BJ shall not be liable; AND CUSTOMER SHALL RELEASE, DEFEND, INDEMNIFY AND HOLD BJ HARMLESS FOR DAMAGES OR LOSSES OF ANY NATURE WHATSOEVER RESULTING FROM ALLEGED PATENT INFRINGEMENT ARISING PURSUANT TO (I) AND (II) ABOVE.

12. FORCE MAJEURE

If either party is unable because of Force Majeure to carry out any of its obligations under these Terms and Conditions, other than obligations to pay money, then on such party giving notice and particulars in writing to the other party within a reasonable time after the occurrence of the cause relied upon, such obligations shall be suspended. "Force Majeure" shall include any event that is beyond the reasonable control of the party so affected including, without limitation, acts of God, laws and regulations, government action, war, civil disturbances, hijack, piracy, criminal action by a third party, threats or acts of terrorism, strikes and labor problems, delays of vendors or carriers, lightning, fire, flood, washout, storm, breakage or accident to equipment or machinery, and shortage of raw materials. If any suspension due to Force Majeure exceeds ten (10) consecutive days, either party may terminate these Terms and Conditions by written notice to the other party and Customer shall be liable for demobilization and any other reasonable costs incurred by BJ incidental to such termination.

13. LAWS, RULES, REGULATIONS, AND EXPORT CONTROL

BJ and Customer agree to comply with all laws, rules, regulations and decrees of any governmental or regulatory body having jurisdiction over the Services or Products to be provided by BJ or the work site or that may otherwise be applicable to BJ's or Customer's performance under these Terms and Conditions.

Services and Products and/or related technical data covered by these Terms and Conditions may be subject to U.S. and/or foreign trade controls. Customer agrees that it will not sell, re-export or transfer Products and/or related technical data except in full compliance with all governmental requirements including but not limited to economic sanctions and export controls administered by the U.S. Department of Treasury, U.S. Department of Commerce and U.S. Department of State. Customer agrees to comply with all BJ requests for trade compliance information, statements, and other assurances including, without limitation, requests for End-User and Routed Transaction certifications. BJ reserves the right to refuse to fulfill any Work Order or otherwise perform under these Terms and Conditions if BJ in its sole discretion determines that such action may violate any law or regulation.

14. GOVERNING LAW, JURY WAIVER, AND VENUE

The laws of the State of Texas shall apply and govern the validity, interpretation, and performance of these Terms and Conditions, any applicable Work Orders without regard to where work is provided. Any suit or proceeding regarding these Terms and Conditions or the Services or Products provided shall be brought exclusively in the state or federal courts located in the City of Houston and County of Harris, Texas. Each Party consents to the personal jurisdiction of the state and federal courts of Harris County, Texas, and waives any objection that such courts are an inconvenient forum or venue. References in these Terms and Conditions to any act, law, statute, rule, or regulation shall be deemed to include references to such as the same may be amended, replaced, or reenacted from time to time. EACH PARTY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN RESPECT TO ANY ACTION, SUIT OR PROCEEDING ARISING OUT OF OR RELATING TO THESE TERMS AND CONDITIONS.

16. ASSIGNMENT

BJ shall have the right to assign these Terms and Conditions to any of its affiliated companies without the consent of Customer.

17. GENERAL

Failure of either party to enforce any of these Terms and Conditions shall not be a waiver of the right to enforce. These Terms and Conditions contain all representations of the Parties and supersedes all prior oral or written agreements or representations and may only be amended by an agreement executed by both Parties. In the event of conflict between the provisions of these Terms and Conditions and any other terms in Customer's purchase orders, field work orders, work tickets, invoices, statements, or any other type of memoranda or other documents used by Customer, whether oral or written, the provisions of these Terms and Conditions shall govern.

Cement Job Summary

7:43	20		10	2	swapping lines and plugging rat hole 30sk
7:51	20		7	2	Pumping mouse hole 20sk
					Pumping down casing with 230sk of cement
7:55	130		78	4.5	mixing @13.6#
8:27					Shut down to wash pumping lines to the pit
8:33	30			5	Started displacement of 119 bbls
8:34	30		30	5	30bbls gone
8:43	100		60	5	60bbls gone
8:50	450		90	5	90bbls gone
8:57	825		10	3	105bbls gone slowing down to land plug
8:59	1357				119 bbls gone and landed plug checked floats
9:02	2500				now testing casing for 2500psi for 5mins
					Test was good and rigging down
					FULL RETURNS DURNING WHOLE JOB
					Leaving location @10am

DecisionSpace[®] Well Engineering Report

Merit Energy

Well Name: Circle 28-1
Wellbore: Wellbore #1
Design: Plan 3
Case: Vertical Section

Date: January 13, 2017 at 10:07 AM

Created By: Mohamed Hussein

1. General Information

1.1 General Case Information

Company	Merit Energy		
Project	Finney County, KS (NAD27)	Site	Circle 28-1 Pad (Grid)
Well	Circle 28-1	Wellbore	Wellbore #1
Design	Plan 3	Case	Vertical Section
Hole MD	5200.1 ft	Hole TVD	5150.0 ft
Air Gap	13.0 ft	Ground Elevation	2895.4 ft
Reference Point	PLAT @ 2908.4ft	Well Type	Onshore

1.2 Active Fluid

1.2.1 Fluid Data

Fluid	Mud #1	Type	Mud
Mud Base Type	Water	Base Fluid	Water
Rheology Model	Bingham Plastic	Foamed	

1.2.2 Rheology Data

Temperature (°F)	Pressure (psi)	Base Density (ppg)	Ref Fluid Properties	PV (Munf) (cp)	YP (Tau0) (lbf/100ft ²)	Fann Data	
						Speed (rpm)	Dial (°)
70	14.7	9.1	Yes	20	14		

1.3 Hole Section

Section Type	Section Depth (ft)	Section Length (ft)	Shoe Depth (ft)	ID (in)	Drift (in)	Eff. Hole Diameter (in)	Coefficient of Friction	Linear Capacity (bbl/ft)	Volume Excess (%)
Casing	1650.0	1650.00	1650.0	8.097	7.972		0.25	0.0637	
Open Hole	5200.1	3550.08		7.875		7.875	0.30	0.0602	0.00

1.4 String Details

Type	Length (ft)	Depth (ft)	Body		Stabilizer / Tool Joint				Weight (ppf)	Material	Grade	Class
			OD (in)	ID (in)	Avg Joint Length (ft)	Length (ft)	OD (in)	ID (in)				
Drill Pipe	4,640	4,640	4.5	3.826	30	1.42	5.781	3.75	18.34	CS_API 5D/7	X	2
Sub	3	4,643	4.44	1.92	3				43.43	CS_API 5D/7	4145H MOD	
Drill Collar	493	5,136	6.25	1.75	30				96.21	CS_API 5D/7	4145H MOD	
Stabilizer	5	5,141	6.25	2.95	5	1	7.5		64.15	CS_API 5D/7	4145H MOD	
MWD	30	5,171	6.75	2.875	30				100.8	SS_15-15LC	15-15LC MOD (1)	
Sub	3	5,174	6.72	2.4	3				105.07	CS_API 5D/7	4145H MOD	
Mud Motor	25	5,199	6.75	4.498	25.3				87.63	CS_API 5D/7	4145H MOD	
Bit	1	5,200	7.875		0.8				146.64			

1.4.1 Grade in Use

Grade	Minimum Yield Stress (psi)
15-15LC MOD (1)	110,000
4145H MOD	110,000
X	95,000

1.4.2 String Nozzles

Component	MD (ft)	Port Open	Diverted Flow	Amount Diverted (%)	Nozzle (32nd")	TFA (in ²)
Polycrystalline Diamond Bit	5,200	NA	NA	NA	5.0X14.0	0.752

1.5 Wellpath - Calculation Method: Minimum Curvature

MD (ft)	INC (°)	AZ (°)	TVD (ft)	DLS (°/100ft)	AbsTort (°/100ft)	RelTort (°/100ft)	Vsect (ft)	NS (ft)	EW (ft)	Build (°/100ft)	Walk (°/100ft)
0.0	0.00	358.50	0.0	0.00	0.00	0.00	0.0	0.0	0.0	0.00	0.00
100.0	0.00	358.50	100.0	0.00	0.00	0.00	0.0	0.0	0.0	0.00	0.00
200.0	0.00	358.50	200.0	0.00	0.00	0.00	0.0	0.0	0.0	0.00	0.00

MD (ft)	INC (°)	AZ (°)	TVD (ft)	DLS (°/100ft)	AbsTort (°/100ft)	RelTort (°/100ft)	VSect (ft)	NS (ft)	EW (ft)	Build (°/100ft)	Walk (°/100ft)
300.0	0.00	358.50	300.0	0.00	0.00	0.00	0.0	0.0	0.0	0.00	0.00
400.0	0.00	358.50	400.0	0.00	0.00	0.00	0.0	0.0	0.0	0.00	0.00
500.0	0.00	358.50	500.0	0.00	0.00	0.00	0.0	0.0	0.0	0.00	0.00
600.0	0.00	358.50	600.0	0.00	0.00	0.00	0.0	0.0	0.0	0.00	0.00
700.0	0.00	358.50	700.0	0.00	0.00	0.00	0.0	0.0	0.0	0.00	0.00
800.0	0.00	358.50	800.0	0.00	0.00	0.00	0.0	0.0	0.0	0.00	0.00
900.0	0.00	358.50	900.0	0.00	0.00	0.00	0.0	0.0	0.0	0.00	0.00
1000.0	0.00	358.50	1000.0	0.00	0.00	0.00	0.0	0.0	0.0	0.00	0.00
1100.0	0.00	358.50	1100.0	0.00	0.00	0.00	0.0	0.0	0.0	0.00	0.00
1200.0	0.00	358.50	1200.0	0.00	0.00	0.00	0.0	0.0	0.0	0.00	0.00
1300.0	0.00	358.50	1300.0	0.00	0.00	0.00	0.0	0.0	0.0	0.00	0.00
1400.0	0.00	358.50	1400.0	0.00	0.00	0.00	0.0	0.0	0.0	0.00	0.00
1500.0	0.00	358.50	1500.0	0.00	0.00	0.00	0.0	0.0	0.0	0.00	0.00
1600.0	0.00	358.50	1600.0	0.00	0.00	0.00	0.0	0.0	0.0	0.00	0.00
1700.0	0.00	358.50	1700.0	0.00	0.00	0.00	0.0	0.0	0.0	0.00	0.00
1750.0	0.00	358.50	1750.0	0.00	0.00	0.00	0.0	0.0	0.0	0.00	0.00
1800.0	1.00	165.02	1800.0	2.00	0.06	0.00	0.4	-0.4	0.1	2.00	0.00
1900.0	3.00	165.02	1899.9	2.00	0.16	0.00	3.9	-3.8	0.9	2.00	0.00
2000.0	5.00	165.02	1999.7	2.00	0.25	0.00	10.9	-10.6	2.5	2.00	0.00
2100.0	7.00	165.02	2099.1	2.00	0.33	0.00	21.4	-20.8	5.0	2.00	0.00
2200.0	9.00	165.02	2198.2	2.00	0.41	0.00	35.3	-34.3	8.2	2.00	0.00
2300.0	11.00	165.02	2296.6	2.00	0.48	0.00	52.6	-51.2	12.3	2.00	0.00
2346.9	11.94	165.02	2342.6	2.00	0.51	0.00	62.0	-60.3	14.4	2.00	0.00
2400.0	11.94	165.02	2394.5	0.00	0.50	0.00	72.9	-70.9	17.0	0.00	0.00
2500.0	11.94	165.02	2492.4	0.00	0.48	0.00	93.6	-91.1	21.8	0.00	0.00
2600.0	11.94	165.02	2590.2	0.00	0.46	0.00	114.3	-111.2	26.6	0.00	0.00
2700.0	11.94	165.02	2688.1	0.00	0.44	0.00	135.0	-131.3	31.5	0.00	0.00
2800.0	11.94	165.02	2785.9	0.00	0.43	0.00	155.7	-151.4	36.3	0.00	0.00
2900.0	11.94	165.02	2883.7	0.00	0.41	0.00	176.4	-171.5	41.1	0.00	0.00
3000.0	11.94	165.02	2981.6	0.00	0.40	0.00	197.1	-191.6	45.9	0.00	0.00
3100.0	11.94	165.02	3079.4	0.00	0.39	0.00	217.7	-211.8	50.7	0.00	0.00
3200.0	11.94	165.02	3177.2	0.00	0.37	0.00	238.4	-231.9	55.6	0.00	0.00
3300.0	11.94	165.02	3275.1	0.00	0.36	0.00	259.1	-252.0	60.4	0.00	0.00
3400.0	11.94	165.02	3372.9	0.00	0.35	0.00	279.8	-272.1	65.2	0.00	0.00
3500.0	11.94	165.02	3470.8	0.00	0.34	0.00	300.5	-292.2	70.0	0.00	0.00
3600.0	11.94	165.02	3568.6	0.00	0.33	0.00	321.2	-312.3	74.8	0.00	0.00
3700.0	11.94	165.02	3666.4	0.00	0.32	0.00	341.9	-332.5	79.7	0.00	0.00
3800.0	11.94	165.02	3764.3	0.00	0.31	0.00	362.6	-352.6	84.5	0.00	0.00
3900.0	11.94	165.02	3862.1	0.00	0.31	0.00	383.2	-372.7	89.3	0.00	0.00
4000.0	11.94	165.02	3959.9	0.00	0.30	0.00	403.9	-392.8	94.1	0.00	0.00
4100.0	11.94	165.02	4057.8	0.00	0.29	0.00	424.6	-412.9	98.9	0.00	0.00
4200.0	11.94	165.02	4155.6	0.00	0.28	0.00	445.3	-433.0	103.8	0.00	0.00
4263.1	11.94	165.02	4217.4	0.00	0.28	0.00	458.4	-445.7	106.8	0.00	0.00
4300.0	11.20	165.02	4253.5	2.00	0.29	0.00	465.8	-452.9	108.5	-2.00	0.00
4400.0	9.20	165.02	4351.9	2.00	0.33	0.00	483.5	-470.2	112.7	-2.00	0.00
4500.0	7.20	165.02	4450.9	2.00	0.37	0.00	497.7	-484.0	116.0	-2.00	0.00
4600.0	5.20	165.02	4550.3	2.00	0.41	0.00	508.5	-494.5	118.5	-2.00	0.00
4700.0	3.20	165.02	4650.0	2.00	0.44	0.00	515.9	-501.7	120.2	-2.00	0.00
4800.0	1.20	165.02	4749.9	2.00	0.47	0.00	519.7	-505.4	121.1	-2.00	0.00
4860.1	0.00	358.50	4810.0	2.00	0.49	0.00	520.3	-506.0	121.3	-2.00	0.00
4900.0	0.00	358.50	4849.9	0.00	0.49	0.00	520.3	-506.0	121.3	0.00	0.00
5000.0	0.00	358.50	4949.9	0.00	0.48	0.00	520.3	-506.0	121.3	0.00	0.00
5100.0	0.00	358.50	5049.9	0.00	0.47	0.00	520.3	-506.0	121.3	0.00	0.00
5200.1	0.00	358.50	5150.0	0.00	0.46	0.00	520.3	-506.0	121.3	0.00	0.00

1.6 Pore Pressure

True Vertical Depth (TVD) (ft)	Pore Pressure (psi)	Equivalent Mud Weight (EMW) (ppg)
13.0	5.63	8.33

1.7 Fracture Gradient

True Vertical Depth (TVD) (ft)	Fracture Pressure (psi)	Equivalent Mud Weight (EMW) (ppg)
13.0	6.75	10.00

1.8 Geothermal Gradient Data

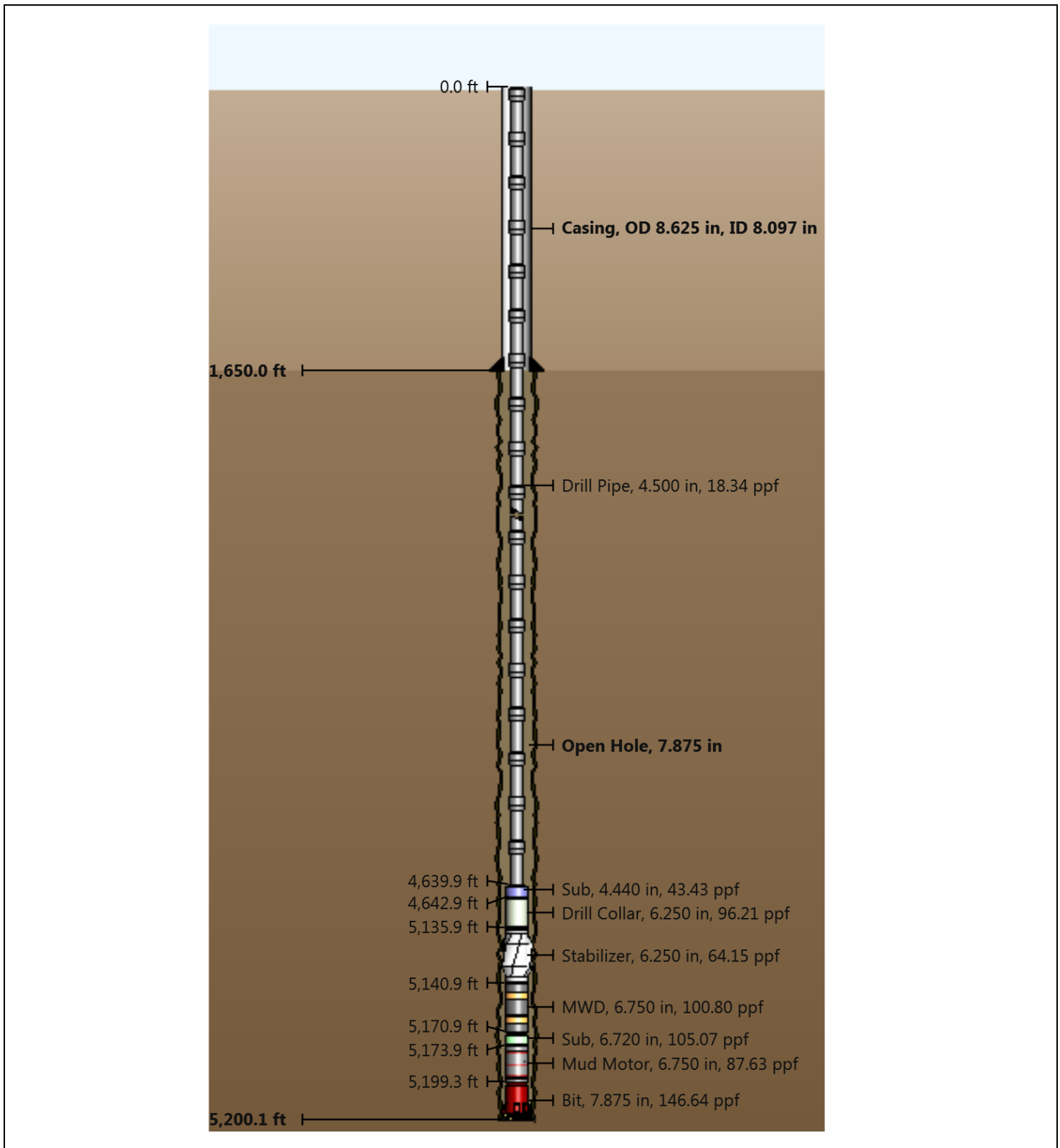
Ambient Temperature	75.00 °F	Mudline Temperature	°F
Temperature @ Depth	185.00 °F @ 5150.0 ft	Gradient	2.14 °F/100ft

1.9 Formation Properties

Total Vertical Depth (ft)	Measured Depth (ft)
1600.0	1600.0
1825.0	1825.0
3875.0	3913.2
3970.0	4010.3
4280.0	4327.0
4450.0	4499.1
4545.0	4594.7
4595.0	4644.9
4715.0	4765.1
4820.0	4870.1
4910.0	4960.1
4950.0	5000.1

2. Schematics

Well: Circle 28-1	Wellbore: Wellbore #1	Case: Vertical Section	String Name: Assembly
--------------------------	------------------------------	-------------------------------	------------------------------



3. Torque & Drag Setup Data

3.1 Settings

Measured Depth of Bit	5200.1 ft	Bending Stress Magnification	No
Block Weight	43.0 kip	Stiff String Analysis	No
Enable Sheave Friction Correction	No	Viscous Torque and Drag	No
Pump Rate	500.0 gpm	Contact Force Normalization Length	31.0 ft
Mechanical Efficiency (Single Sheave)	97.00	Lines Strung	12
		Side Force	lbf
Offset from Wellhead	ft	Angle at Wellhead	°

3.2 Run Parameters

Start MD	0.0 ft	End MD	5200.0 ft
Step Size	100.0 ft		

3.3 Normal Analysis Operational Parameters

Drilling	WOP/Overpull (kip)	Torque at Bit (ft-lbf)
Rotating On Bottom	25.0	3200.0
Slide Drilling	25.0	800.0
Backreaming	NA	NA
Rotating Off Bottom	Y	
Tripping	Speed (ft/min)	RPM (rpm)
Tripping In	60.0	0
Tripping Out	60.0	0

3.4 Friction Factors

Section Type	Coefficient of Friction
Casing	0.25
Open Hole	0.30

4. Torque and Drag Results

4.1 Mechanical Limitations

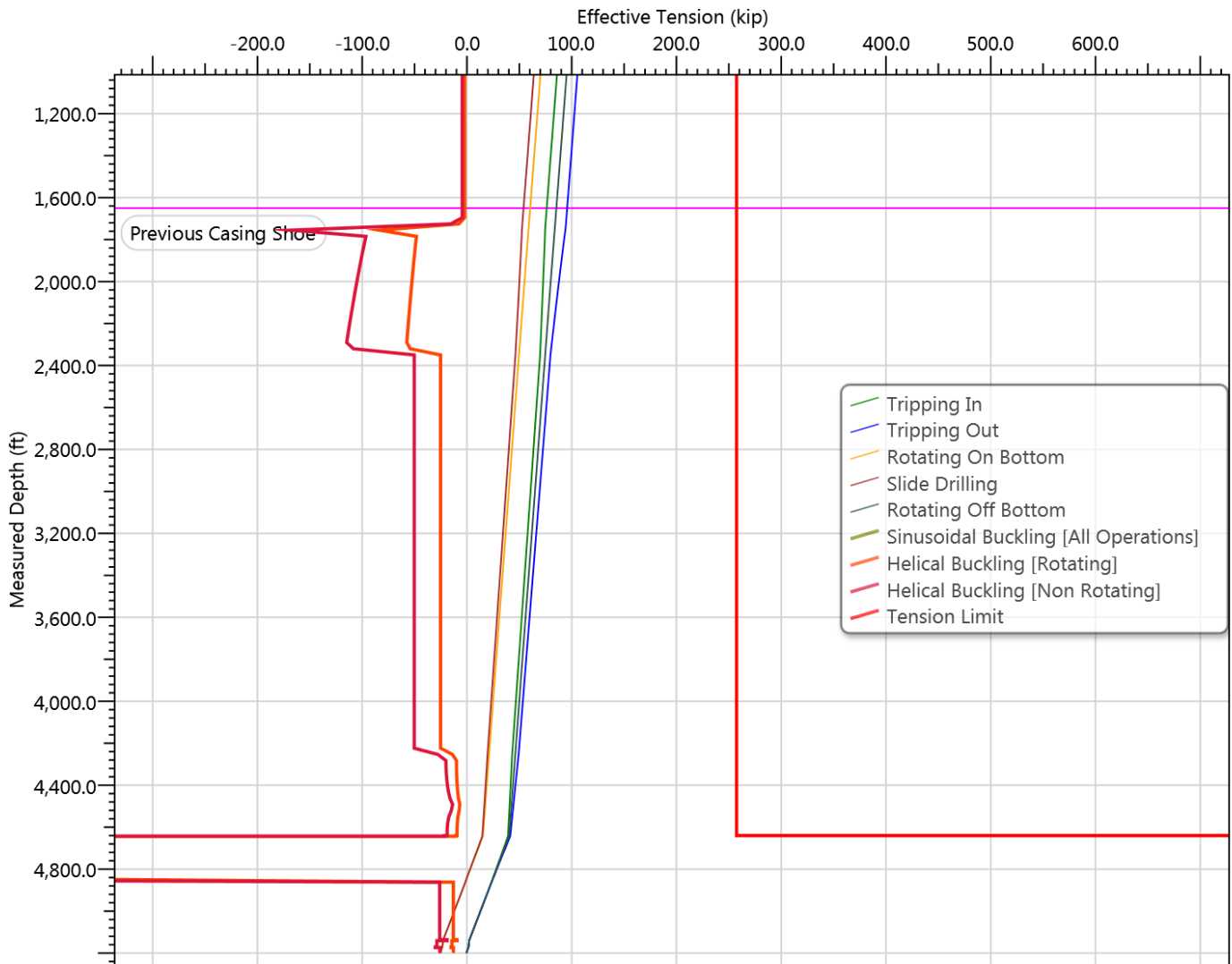
Overpull Margin during a Tripping Out operation	118.2 kip	using	90.00% of yield
Minimum Weight on Bit to Sinusoidal Buckle during a rotating on bottom operation	8.6 kip	at	5200.1 ft
Minimum Weight on Bit to Helical Buckle during a rotating on bottom operation	11.6 kip	at	5140.9 ft
Pick-Up Drag	10.3 kip		
Slack-Off Drag	9.2 kip		
Block Rating (Hoisting System)	kip		
Torque Rating (Rotating Equipment)	ft-lbf		

4.2 Load Summary

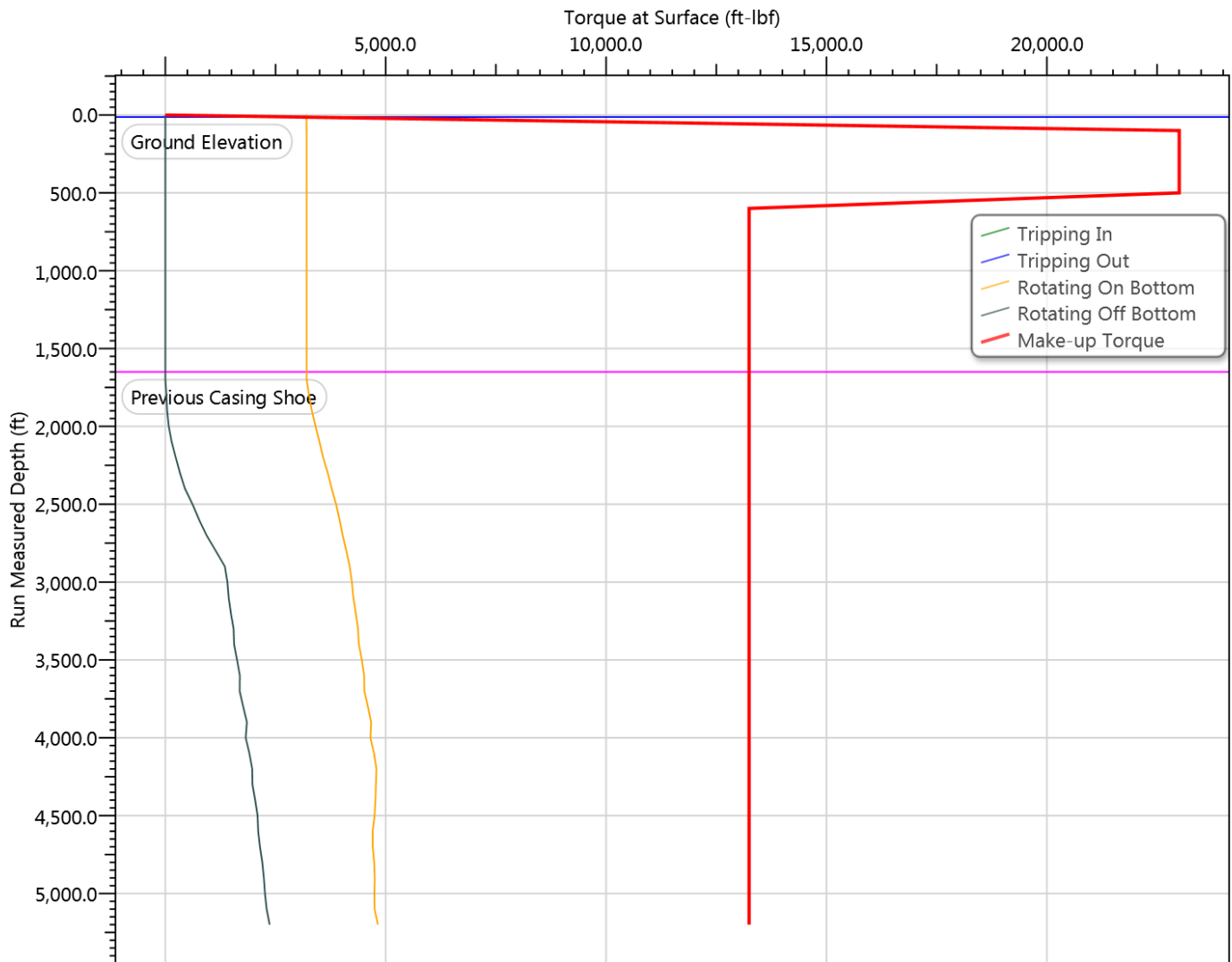
Load Condition	Stress Failure			Buckling Limits			Torque Failure	Torque at the Rotary Table (ft-lbf)	Total Windup with Bit Torque (revs)	Total Windup without Bit Torque (revs)	Measured Weight (kip)	Total Stretch (ft)	Axial Stress = 0		Neutral Point Distance from surface (ft)	Neutral Point Distance from Bit (ft)
	Fatigue	90% Yield	100% Yield	Sinusoidal	Helical	Lockup							Distance from Surface (ft)	Distance from Bit (ft)		
Tripping In								0.0	0.0	0.0	144.5	2.7	4642.9	557.1	5200.1	0.0
Tripping Out								0.0	0.0	0.0	164.0	3.1	4642.9	557.1	5200.1	0.0
Rotating On Bottom				X	X			4820.9	2.0	0.5	128.7	2.0	4639.9	560.1	4840.9	359.1
Slide Drilling				X	X			800.0	0.4	0.0	122.4	1.9	4639.9	560.1	4838.2	361.9
Rotating Off Bottom								2366.0	0.7	0.7	153.7	2.9	4642.9	557.1	5200.1	0.0

5. Torque and Drag Plots

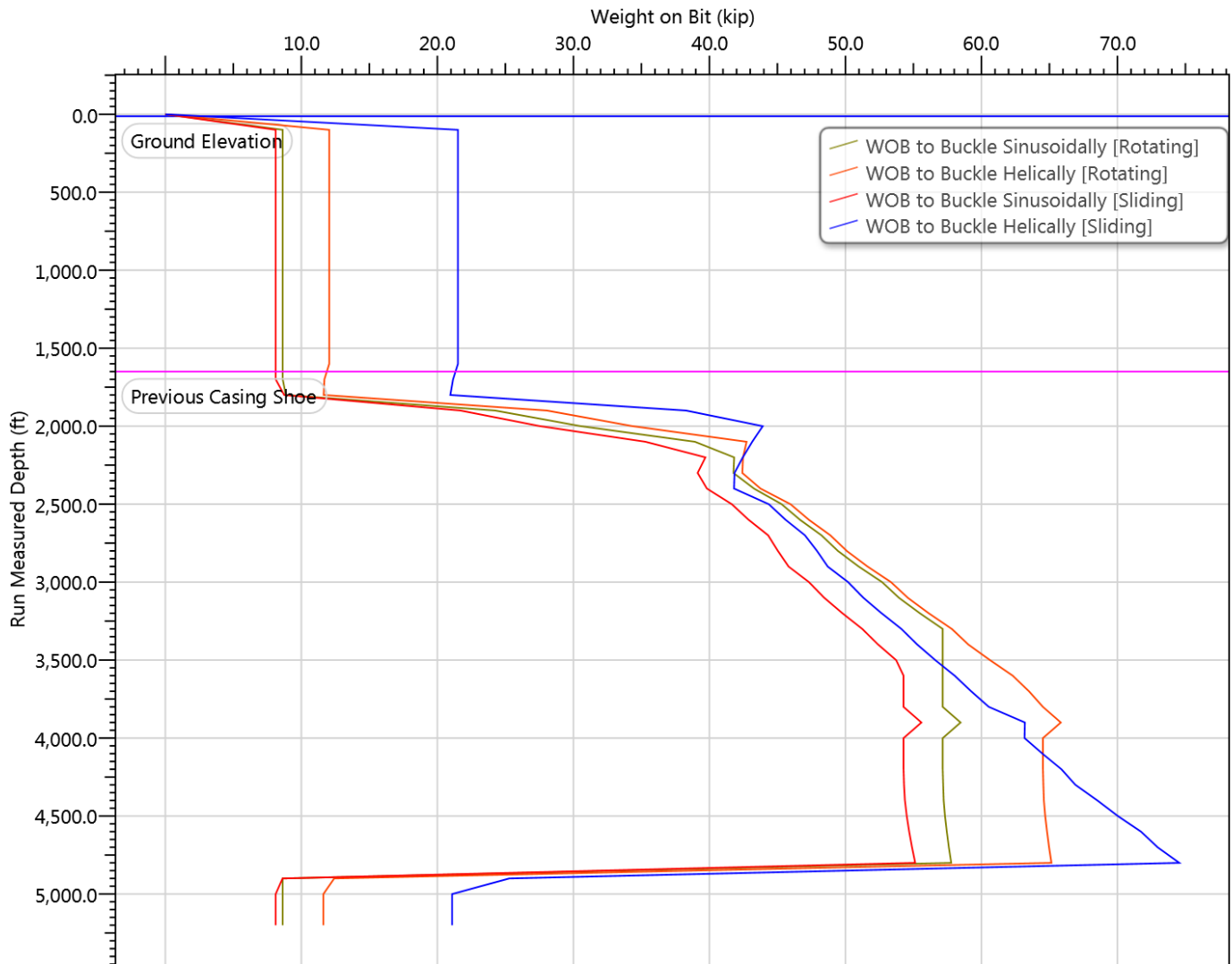
5.1 Effective Tension



5.3 Torque Point



5.4 Minimum WOB



5.5 T&D Well Schematic

