OCD Hobbs

MIN F
SUMF F

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

HOBBS OCD
JUN 27 2018
RECEIVED

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☑ DRILL ☐ REENTER	5. Lease Serial No. NMLC0029415A
	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. PARTITION 24 FED IL 1H (321611)
2. Name of Operator BURNETT OIL COMPANY INCORPORATED (3080)	9. API Well No. 30-025-44932
3a. Address Burnett Plaza - Suite 1500, 801 Cherry Street 3b. Phone No. (include area code) (817)583-8730	10. Field and Pool, or Exploratory FREN / GLORIETS YESO (26770)
4. Location of Well (Report location clearly and in accordance with any State requirements.*) At surface LOT 3 / 2310 FSL / 144 FWL / LAT 32.819264 / LONG -103.814016 At proposed prod. zone TR L / 2310 FSL / 282 FWL / LAT 32.81924 / LONG -103.830763	11. Sec., T. R. M. or Blk. and Survey or Area SEC 19 / T17S / R32E / NMP
14. Distance in miles and direction from nearest town or post office* 4 miles	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) 144 feet	16. No. of acres in lease 640	17. Spacing Unit dedicated to this well 160
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 200 feet	19. Proposed Depth 5492 feet / 10473 feet	20. BLM/BIA Bond No. on file FED: NMB000197
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3923 feet	22. Approximate date work will start* 12/01/2018	23. Estimated duration 15 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) Leslie Garvis / Ph: (817)583-8730	Date 11/10/2017
Title Regulatory Coordinator		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Cody Layton / Ph: (575)234-5959	Date 05/22/2018
Title Supervisor Multiple Resources	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)

GCP Rec 06/14/18

APPROVED WITH CONDITIONS

Approval Date: 05/22/2018

KZ 06/28/18

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)

Additional Operator Remarks

Location of Well

1. SHL: LOT 3 / 2310 FSL / 144 FWL / TWSP: 17S / RANGE: 32E / SECTION: 19 / LAT: 32.819264 / LONG: -103.814016 (TVD: 0 feet, MD: 0 feet)
   PPP: TR I / 2310 FSL / 331 FEL / TWSP: 17S / RANGE: 31E / SECTION: 24 / LAT: 32.819265 / LONG: -103.815562 (TVD: 5533 feet, MD: 5804 feet)
   BHL: TR L / 2310 FSL / 282 FWL / TWSP: 17S / RANGE: 31E / SECTION: 24 / LAT: 32.81924 / LONG: -103.830763 (TVD: 5492 feet, MD: 10473 feet)

BLM Point of Contact

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

Approval Date: 05/22/2018

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

Operator Certification Data Report

05/29/2018

Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME: Leslie Garvis **Signed on:**

Title: Regulatory Coordinator

Street Address: Burnett Plaza - Suite 1500, 801 Cherry Street - Unit 9

City: Fort Worth **State:** TX **Zip:** 76102

Phone: (817)583-8730

Email address: lgarvis@burnettoil.com

Field Representative

Representative Name:

Street Address:

City: **State:** **Zip:**

Phone:

Email address:

AFMSS

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

Application Data Report

05/29/2018

APD ID: 10400023880 **Submission Date:** 11/10/2017

Operator Name: BURNETT OIL COMPANY INCORPORATED

Well Name: PARTITION 24 FED IL **Well Number:** 1H

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

Highlighted data reflects most recent changes

Show Final Text

Section 1 - General

APD ID: 10400023880 **Tie to previous NOS?** **Submission Date:** 11/10/2017

BLM Office: CARLSBAD **User:** Leslie Garvis **Title:** Regulatory Coordinator

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

Lease number: NMLC0029415A **Lease Acres:** 640

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

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

Agreement number:

Agreement name:

Keep application confidential? NO

Permitting Agent? NO **APD Operator:** BURNETT OIL COMPANY INCORPORATED

Operator letter of designation:

Operator Info

Operator Organization Name: BURNETT OIL COMPANY INCORPORATED

Operator Address: Burnett Plaza - Suite 1500, 801 Cherry Street - Unit 9 **Zip:** 76102

Operator PO Box:

Operator City: Fort Worth **State:** TX

Operator Phone: (817)583-8730

Operator Internet Address:

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: PARTITION 24 FED IL **Well Number:** 1H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** FREN **Pool Name:** GLORIETS YESO

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

Operator Name: BURNETT OIL COMPANY INCORPORATED

Well Name: PARTITION 24 FED IL **Well Number:** 1H

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:** PARTITION 24 FED **Number:** IL

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

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 4 Miles **Distance to nearest well:** 200 FT **Distance to lease line:** 144 FT

Reservoir well spacing assigned acres Measurement: 160 Acres

Well plat: P24FIL1H_Well_Pad_20171110075838.pdf

Well work start Date: 12/01/2018 **Duration:** 15 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	2310	FSL	144	FWL	17S	32E	19	Lot 3	32.819264	-103.814016	LEA	NEW MEXICO	NEW MEXICO	F	NMLC0029405A	3923	0	0
KOP Leg #1	2310	FSL	144	FWL	17S	32E	19	Lot 3	32.819264	-103.814016	LEA	NEW MEXICO	NEW MEXICO	F	NMLC0029405A	-1133	5056	5056
PPP Leg #1	2310	FSL	331	FEL	17S	31E	24	Tract I	32.819265	-103.815562	EDDY	NEW MEXICO	NEW MEXICO	F	NMLC0029415A	-1610	5804	5533

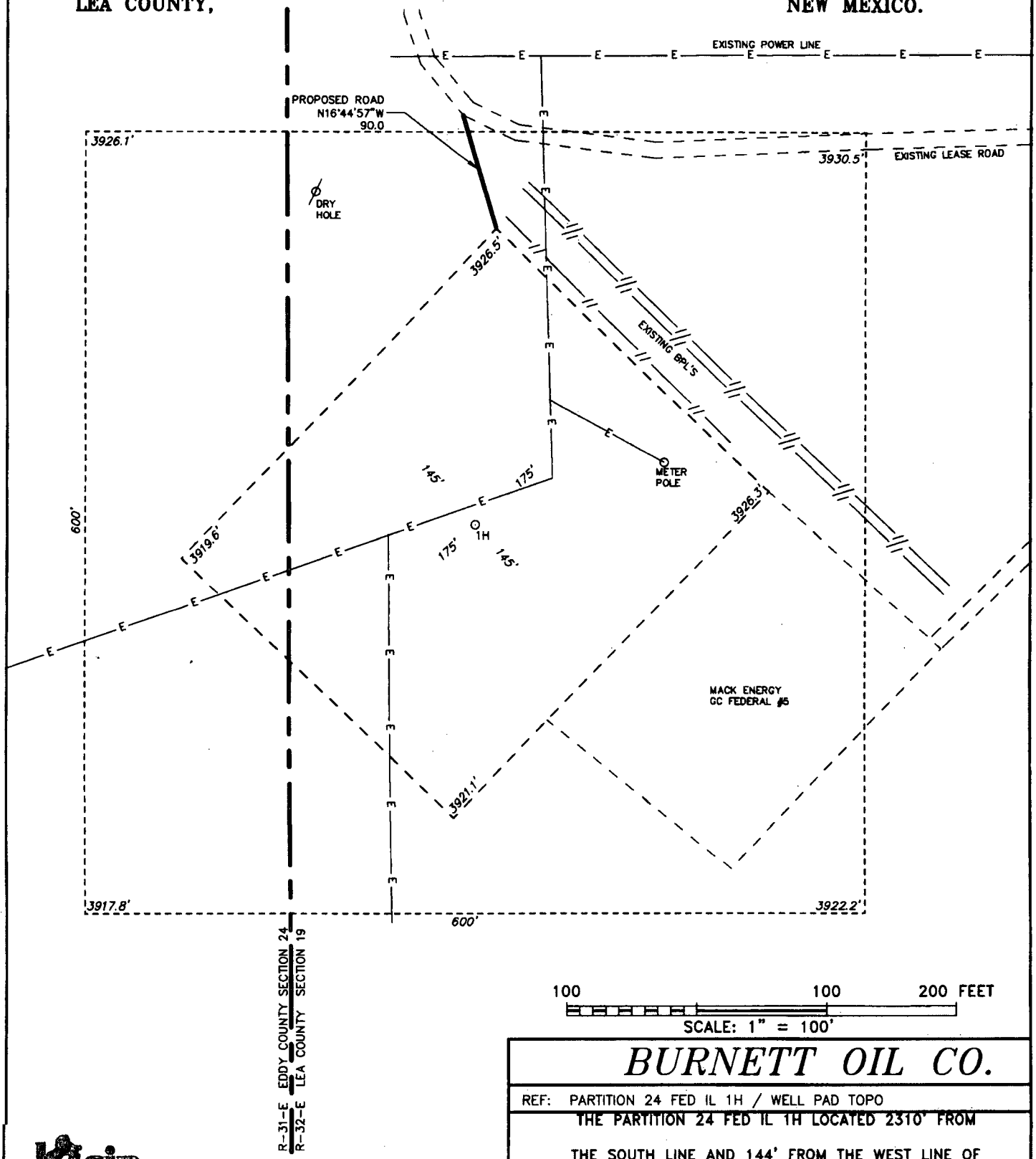
Operator Name: BURNETT OIL COMPANY INCORPORATED

Well Name: PARTITION 24 FED IL **Well Number:** 1H

	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
EXIT Leg #1	2310	FSL	331	FWL	17S	31E	24	Lot L	32.81924	-103.830604	EDDY	NEW MEXICO	NEW MEXICO	F	NMLC0029415A	-1570	10424	5493
BHL Leg #1	2310	FSL	282	FWL	17S	31E	24	Tract L	32.81924	-103.830763	EDDY	NEW MEXICO	NEW MEXICO	F	NMLC0029415A	-1569	10473	5492

SECTION 19, TOWNSHIP 17 SOUTH, RANGE 32 EAST, N.M.P.M.,

LEA COUNTY, **NEW MEXICO.**



100 100 200 FEET

SCALE: 1" = 100'

BURNETT OIL CO.

REF: PARTITION 24 FED IL 1H / WELL PAD TOPO

THE PARTITION 24 FED IL 1H LOCATED 2310' FROM THE SOUTH LINE AND 144' FROM THE WEST LINE OF SECTION 19, TOWNSHIP 17 SOUTH, RANGE 32 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO.

N.M.P.M.

basin surveys
focused on excellence in the oilfield
P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

W.O. Number: 33291	Drawn By: K. GOAD	Date: 09-19-2017	Survey Date: 4-10-2017	Sheet 1 of 1 Sheets

APD ID: 10400023880 **Submission Date:** 11/10/2017

Operator Name: BURNETT OIL COMPANY INCORPORATED

Well Name: PARTITION 24 FED IL **Well Number:** 1H

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	RUSTLER	0	0	0	ALLUVIUM	NONE	No
2	RUSTLER ANHYDRITE	-617	617	617	ANHYDRITE	NONE	No
3	SALADO	-794	794	794	SALT	NONE	No
4	BASE OF SALT	-1795	1795	1795	SALT	NONE	No
5	YATES	-1983	1983	1983	SHALE	NONE	No
6	SEVEN RIVERS	-2316	2316	2316	ANHYDRITE	OIL	No
7	QUEEN	-2915	2915	2915	SHALE	OIL	No
8	GRAYBURG	-3290	3290	3290	DOLOMITE	OIL	No
9	SAN ANDRES	-3607	3607	3607	DOLOMITE	OIL	No
10	GLORIETA	-5217	5217	5217	SHALE	OIL	Yes
11	YESO	-5302	5302	5302	SHALE	OIL	Yes

Section 2 - Blowout Prevention

Pressure Rating (PSI): 3M **Rating Depth:** 6000

Equipment: The blowout prevention equipment (BOPE) shown in the attached diagram will consist of a 3000 PSI Hydril Unit (annular) with hydraulic closing equipment. Other necessary BOP equipment will include a kelly cock, floor safety valve, choke line and choke manifold having 3000 PSI WP rating. See attached Wellhead Diagram

Requesting Variance? NO

Variance request:

Testing Procedure: The equipment will comply with Onshore Order #2. BOPE will be tested to 3,000 psi and the Annular tested to 1,500 psi and maintaining for at least ten (10) minutes. The 13 5/8" x 13 5/8" drilling head will be installed on the surface casing and in use continuously until total depth is reached. An independent testing company will be used for the testing.

Operator Name: BURNETT OIL COMPANY INCORPORATED

Well Name: PARTITION 24 FED IL **Well Number:** 1H

Choke Diagram Attachment:

P24FIL1H_Choke_Manifold_Diagram_20171110092309.pdf

BOP Diagram Attachment:

Wellhead_Running_Procedure_20171110091559.pdf

P24FIL1H_BOP_Schematic_APD_20171110092320.pdf

LandMX7001N_20180307135755.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	CONDUCTOR	24	20.0	NEW	API	N	0	90	0	90			90	OTHER	52.78	OTHER - null						
2	SURFACE	17.5	13.375	NEW	NON API	N	0	720	0	720			720	J-55	48	STC	1.125	1	DRY	1.8	DRY	1.8
3	INTERMEDIATE	12.25	9.875	NEW	API	N	0	2000	0	2000			2000	J-55	36	STC	1.125	1	DRY	1.8	DRY	1.8
4	PRODUCTION	8.5	7.0	NEW	API	N	0	4800	0	4800			4800	L-80	26	LTC	1.125	1	DRY	1.8	DRY	1.8
5	PRODUCTION	8.5	5.5	NEW	API	N	4800	10473	4800	10473			5673	L-80	17	LTC	1.125	1	DRY	1.8	DRY	1.8

Casing Attachments

Operator Name: BURNETT OIL COMPANY INCORPORATED

Well Name: PARTITION 24 FED IL **Well Number:** 1H

Casing Attachments

Casing ID: 1 **String Type:** CONDUCTOR

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Casing ID: 2 **String Type:** SURFACE

Inspection Document:

Spec Document:

J_55_API_Casing_20180307135836.pdf

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

P24FIL1H_Casing_Design_Worksheet_20171110092248.pdf

API_Casing_Inspection_Sheets_20171110092417.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

API_Casing_Inspection_Sheets_20171110092700.pdf

P24FIL1H_Casing_Design_Worksheet_20171110092711.pdf

Operator Name: BURNETT OIL COMPANY INCORPORATED

Well Name: PARTITION 24 FED IL **Well Number:** 1H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

P24FIL1H_Casing_Design_Worksheet_20171110092920.pdf

Casing ID: 5 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

P24FIL1H_Casing_Design_Worksheet_20171110093109.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
CONDUCTOR	Lead		0	0	0	0	0	0		0	0
PRODUCTION	Lead		0	0	0	0	0	0		0	See Below for Production Cement Info
SURFACE	Lead		0	720	330	1.75	13.5	94	100	ExtendaCem	CZ 0.1250 lbm Poly-EFLAKE

Operator Name: BURNETT OIL COMPANY INCORPORATED

Well Name: PARTITION 24 FED IL **Well Number:** 1H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Tail		0	720	340	1.35	14.8		100	HalCem 2% Calcium Chloride	Flake
INTERMEDIATE	Lead		0	2000	475	1.75	13.5	94	50	ExtendaCem	CZ 0.1250 lbm Poly-E-Flake
INTERMEDIATE	Tail		0	2000	205	1.33	14.8	0	50	HalCem	none
PRODUCTION	Lead		0	10473	255	2.46	14.24	94	35	EconoCem-C	0.1250 lbm Poly-E-Flake, 025 lbm D-Air 5000
PRODUCTION	Tail		0	10476	170	1.33	14.8	0	35	Halchem	0.50% LAP-1, 0.25 lbm D-Air 5000, 0.40% CFR-3,0.10% HR-800

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: The necessary mud products for weight addition and fluid loss will be on locations at all times

Describe the mud monitoring system utilized: Pason equipment will be used to monitor the mud system.

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
2000	10473	WATER-BASED MUD	9.5	10							
0	720	WATER-BASED MUD	8.4	9.5							
720	2000	WATER-BASED MUD	9.5	10							

Operator Name: BURNETT OIL COMPANY INCORPORATED

Well Name: PARTITION 24 FED IL **Well Number:** 1H

Section 6 - Test, Logging, Coring

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

No open hole log will be run.

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

DS,MUDLOG

Coring operation description for the well:

No cores or DSTs are planned at this time.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 2435 **Anticipated Surface Pressure:** 1217.74

Anticipated Bottom Hole Temperature(F): 105

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:

P24FIL1H_H2S_20171110095521.pdf
P24FIL1H_H2S_Contingency_20171110095533.pdf
P24FIL1H_Emergency_Contact_20171110095543.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

P24FIL1H__Directional_Plan_20171110095612.pdf
P24FIL1H_Directional__Plot_Plan_20171110095627.pdf
P24FIL1H__Anticollision_Report_20171110095639.pdf

Other proposed operations facets description:

See Attached Drilling Plan

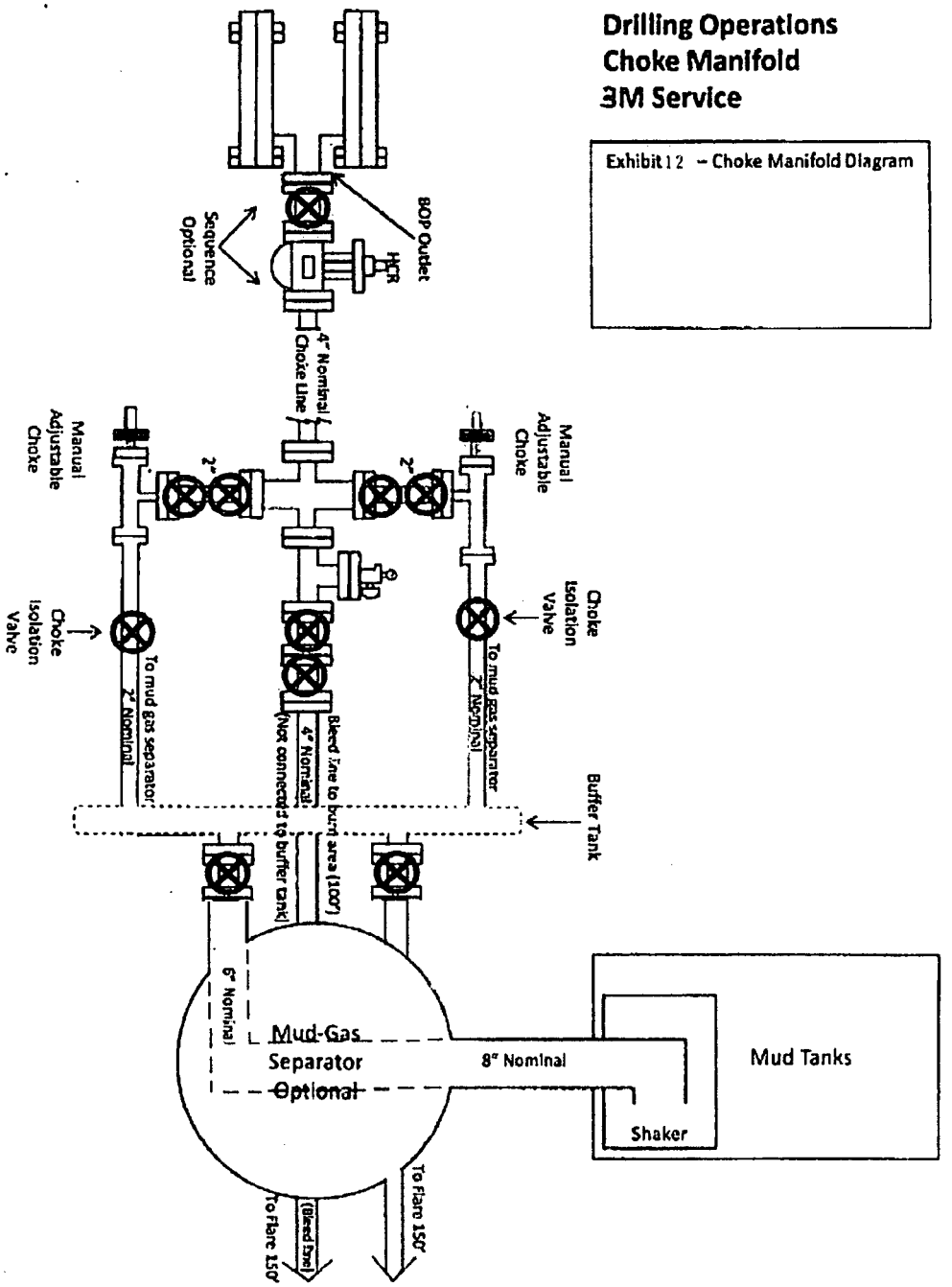
Other proposed operations facets attachment:

P24FIL_1H_Drlg_Plan_20171110100207.pdf

Other Variance attachment:

Drilling Operations
Choke Manifold
3M Service

Exhibit 12 – Choke Manifold Diagram



Cactus Wellhead

Installation Procedure Prepared For:

Mack Energy Corporation

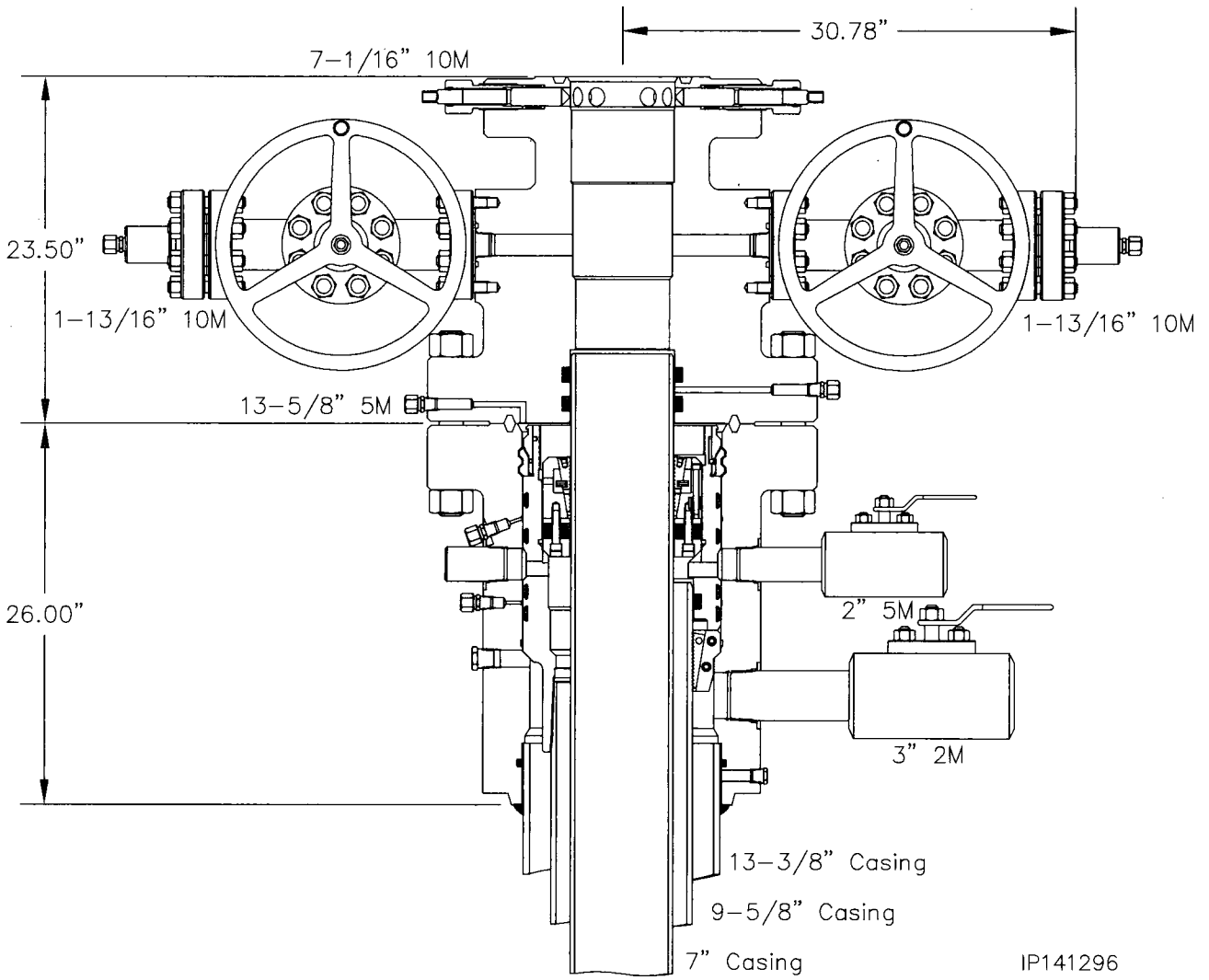
13-3/8" x 9-5/8" x 7" 10M
MBU-LR Wellhead System With
CTH-DBLHPS Tubing Head

Publication # IP0228

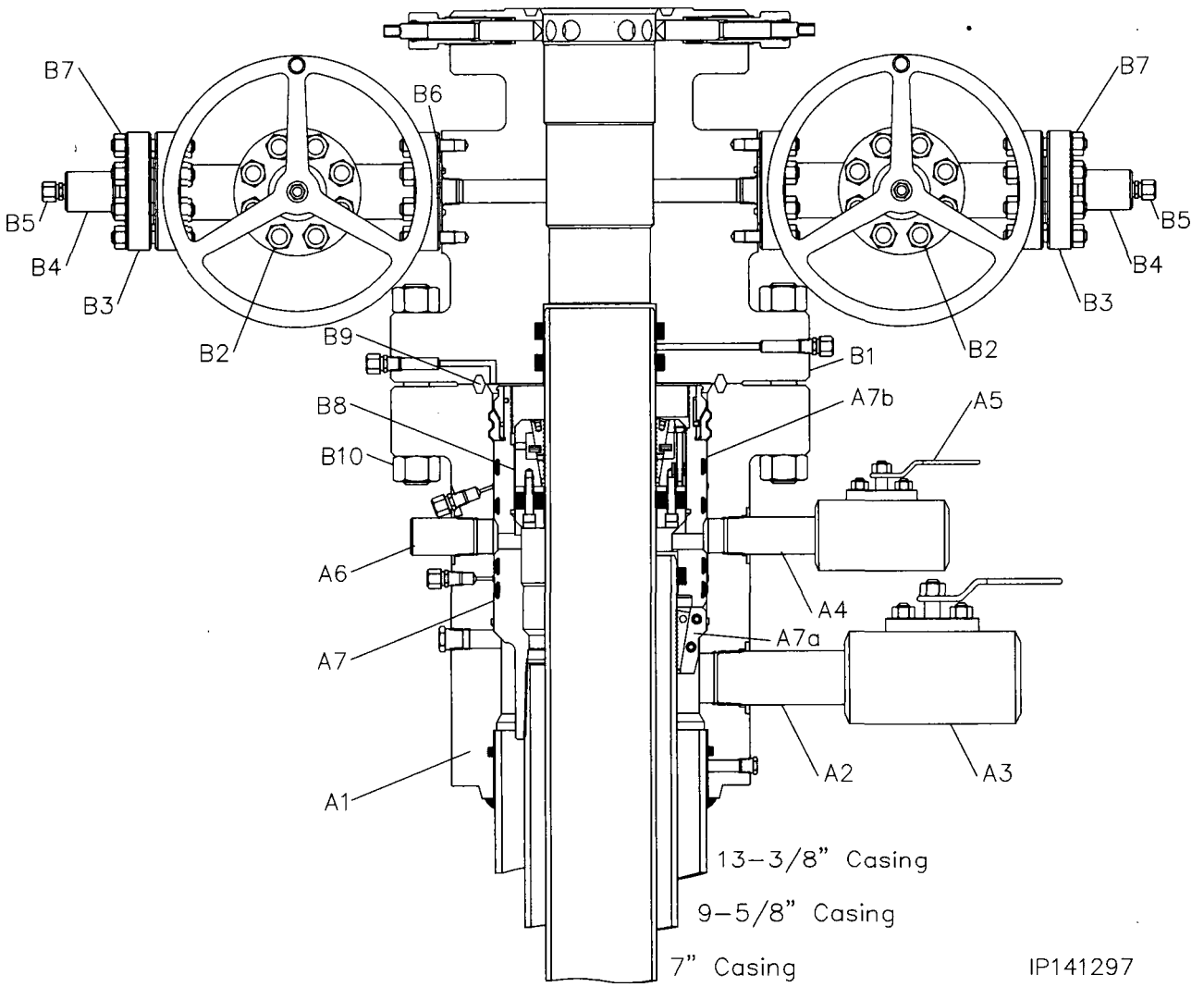
May, 2014

Table of Contents

System Drawing



Bill of Materials



MBU-LR HOUSING ASSEMBLY

Item	Qty	Description
A1	1	Housing, CW, MBU-LR, 13-5/8" 5M x 13-3/8" SOW, with two 2" line pipe upper outlets and one 3" line pipe lower outlet, one piece, 6A-PU-AA-1-1 Part # 102513
A2	1	Nipple, 3" line pipe x 12" long, XH Part # 101610
A3	1	Ball Valve, KF, AH, 3 RP 2M LP, DI: Body, CS: Trim, nylon seats, HNBR: seals, with handle standard non-nace service Part # 100535
A4	1	Nipple, 2" line pipe x 6" long, XH Part # NP6A
A5	1	Ball Valve, 2" RP, 5M LP x 2" LP, WCB body, 304SS ball, CR13 stem, RPTFE seats, API 596 Part # 103877
A6	1	Bull Plug, 2" line pipe solid, 4130 60K Part # BP2P
A7	1	Casing Hanger, CW, MBU-LR, 13-5/8" x 9-5/8" LC box bottom x 11.250" 4 Stub Acme 2G LH box top, mandrel, 6A-U-AA-1-1 Part # 100482

EMERGENCY EQUIPMENT

Item	Qty	Description
A7a	1	Casing Hanger, CW, MBU 13-5/8" x 9-5/8" 6A-PU-DD-3-1 Part # 100569
A7b	1	Packoff, CW, MBU-LR Emergency, 13-5/8" x 11" x 9-5/8" with 11.250" 4 Stub Acme 2G LH top, slotted for CL outlets, 6A-PU-AA-1-1 Part # 100538

TUBING HEAD ASSEMBLY

Item	Qty	Description
B1	1	Tubing Head, CW, CTH-DBLHPS, 7, 13-5/8" 5M x 7-1/16" 10M, with two 1-13/16" 10M studded outlets 6A-PU-EE-0,5-2-1 Part #
B2	2	Gate Valve, DSG-22, 1-13/16" 10M, flanged end, EE-0,5 trim, (6A-PU-EE-0,5-3-1) Part # 102284
B3	2	Companion Flange, 1-13/16" 10M x 2" line pipe (5,000 psi max WP), (6A-PU-EE-NL-1) Part # 200010
B4	2	Bull Plug, 2" line pipe x 1/2" line pipe, API 6A-DD-NL Part # BP2T
B5	2	Fitting, Grease, Vented Cap, 1/2" NPT, Alloy Non-Nace Part # FTG1
B6	4	Ring Gasket, 151, 1-13/16" 10M Part # BX151
B7	16	Studs, all thread with two nuts, black, 3/4" x 5-1/2" long, B7/2H Part # 780080
B8	1	Casing Hanger, C22, 11" x 7" Part # 50020
B9	1	Ring Gasket, 160, 13-5/8" 5M Part # BX160
B10	16	Studs, all thread with two nuts, black, 1-5/8" x 12-3/4" long, B7/2H Part # 780087

RECOMMENDED SERVICE TOOLS

Item	Qty	Description
ST1	1	Test Plug/Retrieving Tool, CW, 13-5/8" x 4-1/2" IF, 1-1/4" LP bypass and spring loaded lift dogs Part # 800002
ST2	1	Wear Bushing, CW, MBU-LR-LWR, 13-5/8" x 12.38" ID x 20.31" long Part # 100546
ST3	1	Casing Hanger Running Tool, CW, MBU-LR, 13-5/8" x 9-5/8" long casing box top x 11.250" 4 Stub Acme LH pin bottom, 4140 110K Part # 102304
ST4	1	Packoff Running Tool, CW, MBU-LR, 13-5/8" x 4-1/2" IF box bottom and top, with 11.250" 4 Stub Acme 2G LH pin bottom Part # 100556
ST5	1	Test Plug/Retrieving Tool, CW, 11" x 4-1/2" IF, 1-1/4" LP bypass and spring loaded lift dogs Part # 800001
ST6	1	Wear Bushing, MBU-LR-UPR, 13-5/8" x 11" x 9.00" I.D. x 16.0" long Part # 102789
ST7	1	Wash Tool, CW, Casing Hanger, MBU-LR/MBS2, fluted, 13-5/8" x 4-1/2" IF box top threads, fabricated Part # 102787

TA CAP ASSEMBLY

Item	Qty	Description
C1	1	Flange, Blind, 7-1/16" 10M X 1/2 LP ,With Two 3/4" Part # 101464
C2	1	Needle Valve, MFA, 1/2" Line Pipe, 10M Part # NVA
C3	12	Studs, All Thread With Two Nuts, Black, 1-1/2" X 11-3/4" Long, B7/H2 Part # 780082

Stage 1 — Install the MBU-LR Wellhead Housing

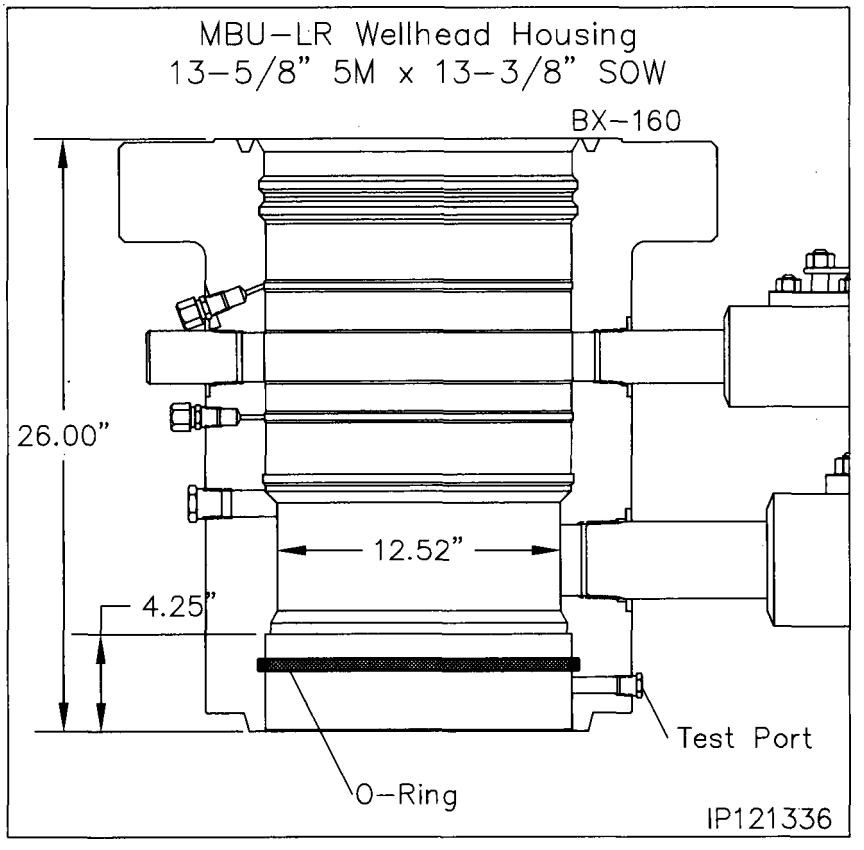
1. Run the conductor and 13-3/8" surface casing to the required depth and cement as required.
2. Determine the correct elevation for the MBU-LR Wellhead Assembly.
3. Cut the 13-3/8" at 53.5" below the cellar to accommodate the wellhead. Grind stub level with the horizon and place an 1/8" x 1/8" bevel on the OD of the stub.

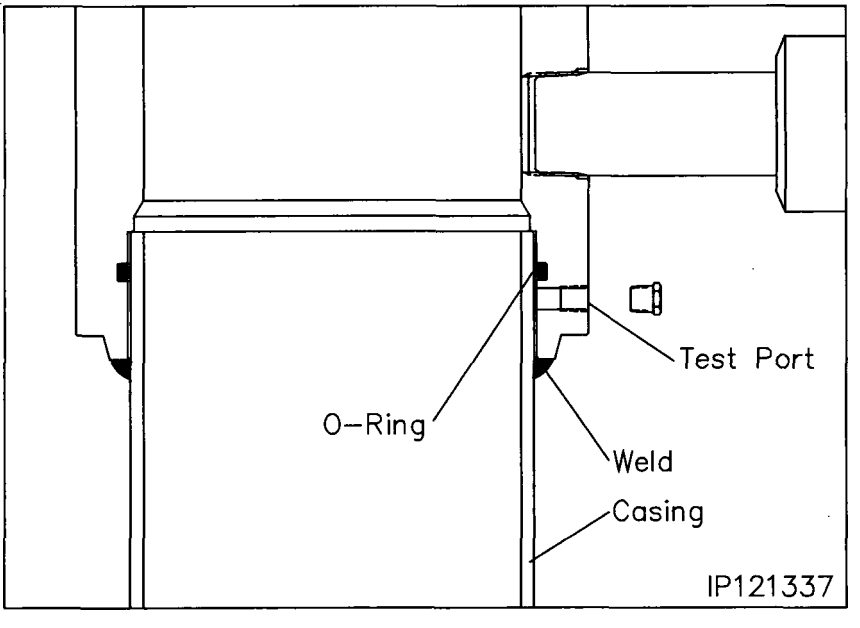
Note: The slip on and weld preparation is 4.25" in depth.

4. Examine the ***13-5/8" 5M x 13-3/8" SOW MBU-LR Wellhead Assembly (Item A1)***. Verify the following:
   - bore is clean and undamaged
   - weld socket is clean and free of grease and debris and o-ring is in place and in good condition
   - all seal areas are clean and undamaged
   - valves are intact and in good condition
5. Align and level the Wellhead Assembly over the casing stub, orienting the outlets so they will be compatible with the drilling equipment.
6. Remove the pipe plug from the port on the bottom of the Head.
7. Slowly and carefully lower the assembly over the casing stub, weld and test the MBU-LR housing to the surface casing.
8. Replace the pipe plug in the port on the bottom of the housing.

Note: The weld should be a fillet-type weld with legs no less than the wall thickness of the casing. Legs of 1/2" to 5/8" are adequate for most jobs.

Refer to the back of this publication for the **Recommended Procedure for Field Welding Pipe to Wellhead Parts for Pressure Seal** and for field testing of the weld connection.



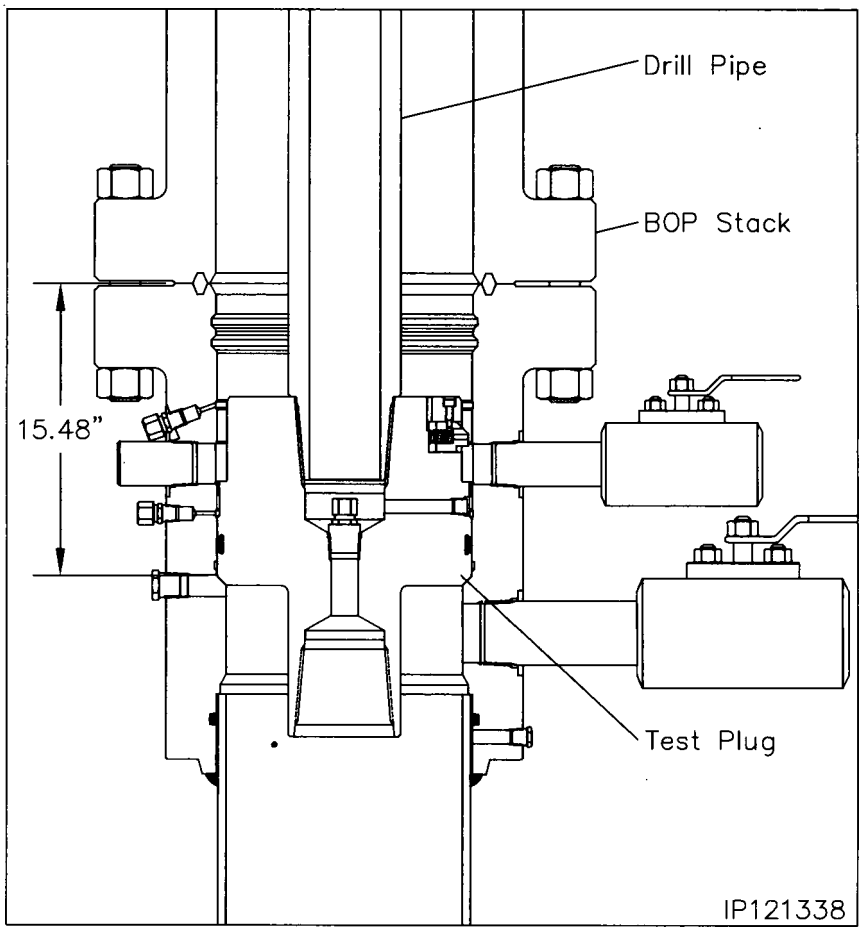


Stage 2 — Test the BOP Stack

Immediately after making up the BOP stack and periodically during the drilling of the well for the next casing string the BOP stack (connections and rams) must be tested.

1. Examine the ***13-5/8" Nominal x 4-1/2" IF CW Test Plug/ Retrieving Tool (Item ST1)***. Verify the following:
   - 1-1/4" VR plug and weep hole plug are in place and tightened securely
   - elastomer seal is in place and in good condition
   - retractable lift lugs are in place, clean, and free to move
   - drill pipe threads are clean and in good condition

Note: Prior to installing the BOP it is recommended to attain an accurate RKB dimension for future use for accurately landing test plugs and casing hangers. This dimension is attained by dropping a tape measure from the rig floor to the top of the wellhead flange. Pull tape taut and record the dimension from the wellhead to the top of the rig floor or kelly bushings. Ensure this dimension is placed on the BOP board in the dog house and on the drillers daily report sheet.



2. Position the test plug with the elastomer seal down and the lift lugs up and make up the tool to a joint of drill pipe.

WARNING: Ensure that the lift lugs are up and the elastomer seal is down

3. Remove the 1/2" NPT pipe plug from the weep hole if pressure is to be supplied through the drill pipe.
4. Open the housing side outlet valve.
5. Lightly lubricate the test plug seal with oil or light grease.
6. Carefully lower the test plug through the BOP and land it on the load shoulder in the housing, 15.48" below the top of the housing.
7. Close the BOP rams on the pipe and test the BOP to 5,000 psi.

Note: Any leakage past the test plug will be clearly visible at the open side outlet valve.

8. After a satisfactory test is achieved, release the pressure and open the rams.
9. Remove as much fluid as possible from the BOP stack and the retrieve the test plug with a straight vertical lift.

Note: When performing the BOP blind ram test it is highly recommended to suspend a stand of drill pipe below the test plug to ensure the plug stays in place while disconnecting from it with the drill pipe.

10. Repeat this procedure as required during the drilling of the hole section.

Stage 3 — Run the Lower Wear Bushing

Note: Always use a Wear Bushing while drilling to protect the load shoulders from damage by the drill bit or rotating drill pipe. The Wear Bushing **must be retrieved** prior to running the casing.

1. Examine the ***13-5/8" Nominal MBU-LR-LWR Wear Bushing (Item ST2).*** Verify the following
   - internal bore is clean and in good condition
   - o-ring is in place and in good condition
   - shear o-ring cord is in place and in good condition
   - paint anti-rotation lugs white and allow paint to dry

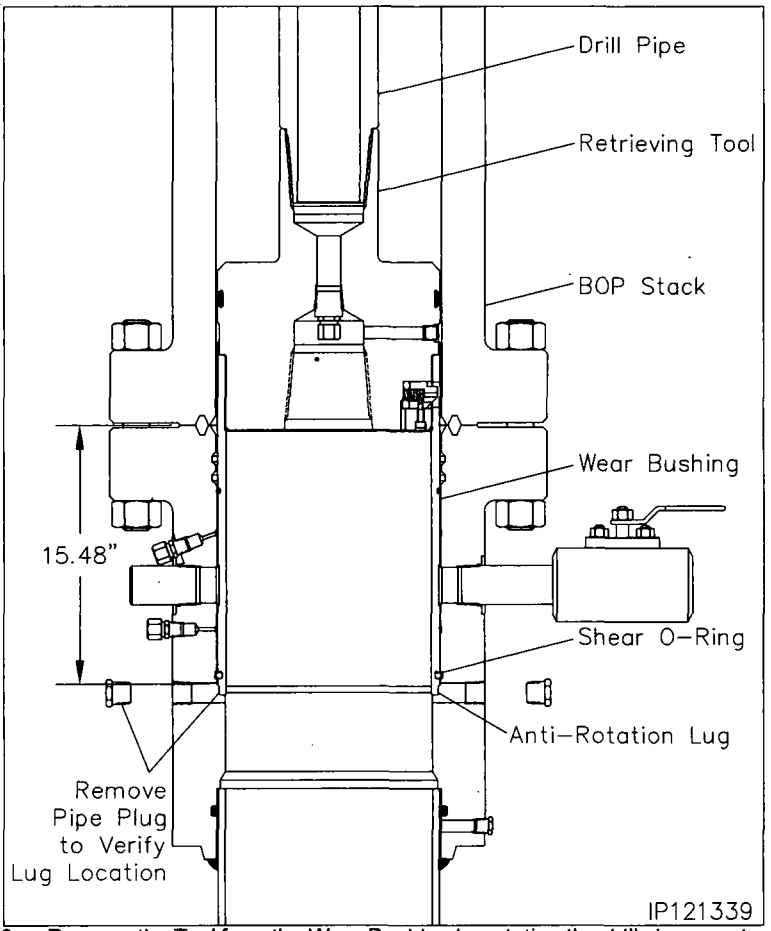
Run the Wear Bushing Before Drilling

2. Orient the ***13-5/8" Nominal x 4-1/2" IF CW Test Plug/Retrieving Tool (Item ST1)*** with drill pipe connection up.
3. Attach the Retrieving Tool to a joint of drill pipe.
4. Align the retractable lift lugs of the tool with the retrieval holes of the bushing and the carefully lower the tool into the Wear Bushing until the lugs snap into place.

Note: If the lugs did not align with the holes, rotate the tool in either direction until they snap into place.

5. Apply a heavy coat of grease, not dope, to the OD of the bushing.
6. Slowly lower the Tool/Bushing Assembly through the BOP stack and land it on the load shoulder in the housing, 15.48" below the top of the housing.
7. Rotate the drill pipe clockwise (right) to locate the stop lugs in their mating notches in the head. When properly aligned the bushing will drop an additional 1/2".
8. Remove one of the 1" sight port pipe plugs from the OD of the housing and look through the hole to verify the lug has engaged the slot. The painted lug will be clearly visible through the port. Reistall the pipe plug and tighten securely.

Note: The Shear O-Ring on bottom of the bushing will locate in a groove above the load shoulder in the head to act as a retaining device for the bushing.



9. Remove the Tool from the Wear Bushing by rotating the drill pipe counter clockwise (left) 1/4 turn and lifting straight up.
10. Once set is highly recommended to inject a minimum of two full tubes of grease through the housing test ports To keep trash from accumulating behind the bushing.
11. Drill as required.

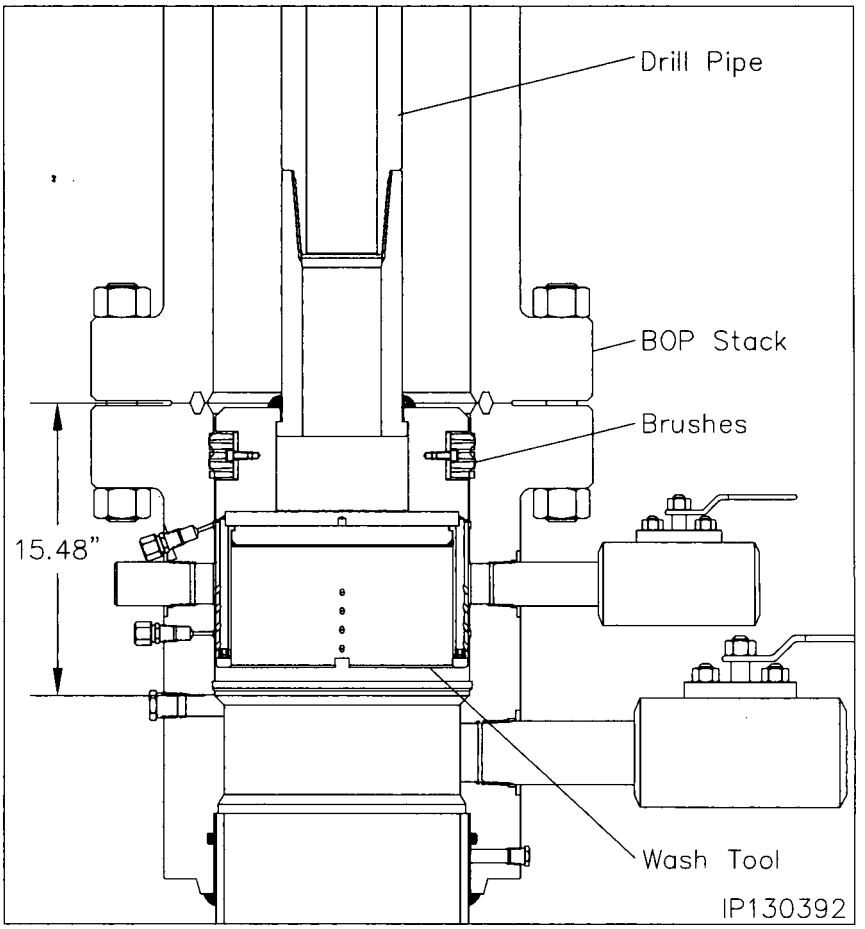
Note: It is highly recommended to retrieve, clean, inspect, grease, and reset the wear bushing each time the hole is tripped during the drilling of the hole section.

Retrieve the Wear Bushing After Drilling

12. Make up the Retrieving Tool to the drill pipe .
13. Slowly lower the Tool into the Wear Bushing.
14. Pick up and balance the riser weight.
15. Rotate the Retrieving Tool clockwise until a positive stop is felt. This indicates the lugs have snapped into the holes in the bushing.
16. Retrieve the Wear Bushing, and remove it and the Retrieving Tool from the drill string.

Stage 4 — Hang Off the 9-5/8" Casing

Due to the possible build up of debris in the bore and lockring groove of the MBU-LR wellhead it is recommended to run the 13-5/8" Wash Tool prior to running the 9-5/8 casing.



Running the 13-5/8" Wash Tool

1. Examine the ***13-5/8" x 4-1/2" IF Wash Tool (Item ST7).*** Verify the following:
   - drill pipe threads and bore are clean and in good condition
   - all ports are open and free of debris .
   - brushes are securely attached and in good condition
2. Orient the Wash Tool with drill pipe box up. Make up a joint of drill pipe to the tool.
3. Carefully lower the Wash Tool through the BOP and land it on top of the 9-5/8" casing hanger, 15.48" below the top flange of the housing.
4. Place a paint mark on the drill pipe level with the rig floor and then pick up on the tool approximately 1".
5. Attach a high pressure water line to the end of the drill pipe and pump water through the tool and up the Diverter stack.
6. While flushing, raise and lower the tool the full length of the wellhead and BOP stack. The drill pipe should be slowly rotate while raising and lowering to wash the inside of the housing and BOP stack to remove all caked on debris.
7. Once washing is complete, shut down pumps and then open the housing lower outlet valve and drain the BOP stack.

Note: If returns are not clean, continue flushing until they are.

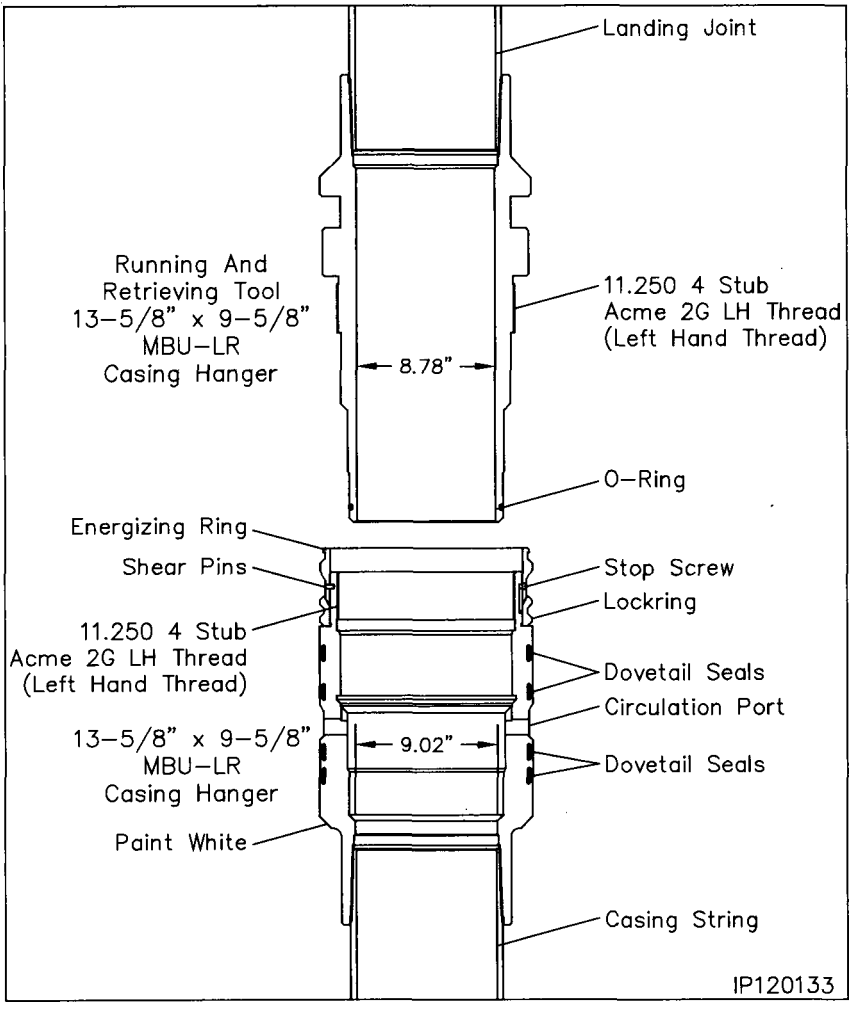
8. Once the returns are clean and free of debris, retrieve the tool to the rig floor.

Stage 4 — Hang Off the 9-5/8" Casing

The 9-5/8" MBU-LR casing hanger and running and retrieving tool should be shipped to location pre assembled as a full joint. If not, follow steps 1 through for assembling on the pipe rack.

1. Examine the ***13-5/8" x 9-5/8" LC MBU-LR Casing Hanger (Item A7)***. Verify the following:
   - bore and internal Acme threads are clean and in good condition
   - lockring is in place and free to rotate
   - energizing ring is in its upper most position and secured with shear pins
   - dovetail seals are clean and in good condition
   - pup joint is in good condition and properly made up. Thoroughly clean, inspect, and lubricate pin threads
   - paint the 45° load shoulder white as indicated

2. Examine the ***13-5/8" x 9-5/8" LC MBU-LR Casing Hanger Running and Retrieving Tool (Item ST3)***. Verify the following:
   - bore is clean and free of debris
   - O.D. Acme threads are clean and in good condition
   - o-ring is in place and in good condition
   - proper length landing joint is made up in top of the tool with thread lock compound



Stage 4 — Hang Off the 9-5/8" Casing

3. Thoroughly clean and lightly lubricate the mating Acme threads and seal surfaces of the hanger and running tool.

4. Carefully slide the running tool into the hanger and then rotate the tool clockwise (Right) to locate the thread start and then counter clockwise (Left) approximately 8 turns or until the tool makes contact with the top of the energizing ring.

WARNING: Do Not apply torque to the Hanger/Tool connection.

5. Run the 9-5/8" casing as required and space out appropriately for the mandrel casing hanger.

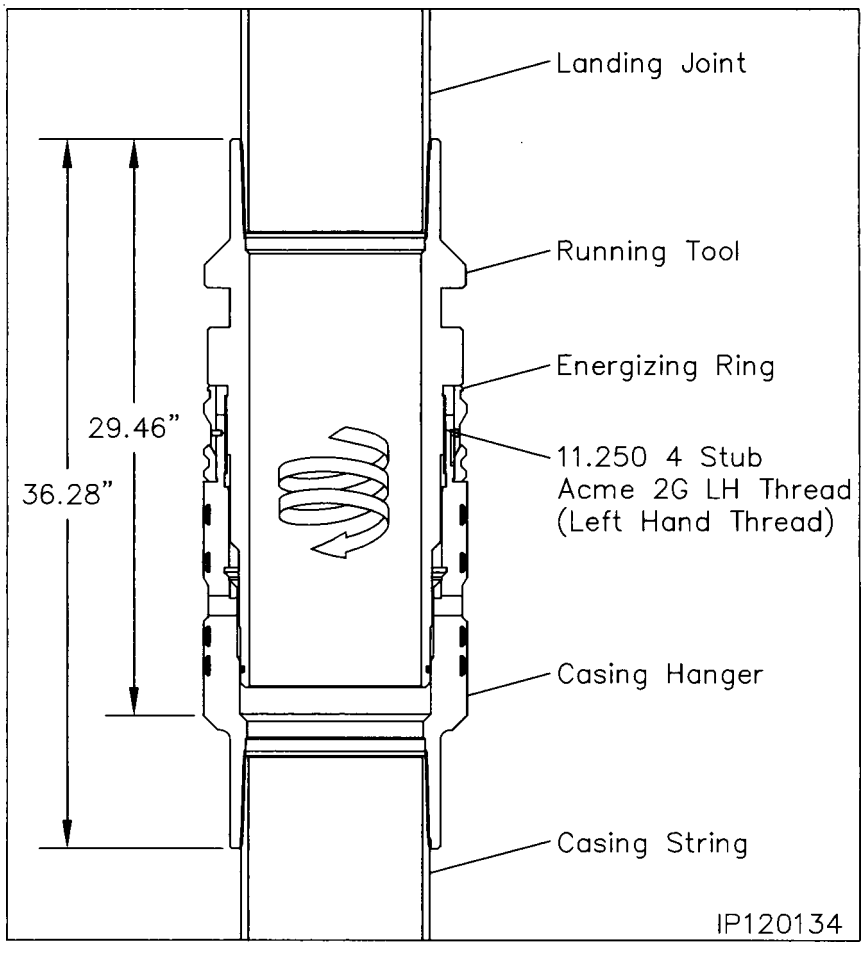
Note: If the 9-5/8" casing becomes stuck and the mandrel casing hanger can not be landed, Refer to **Stage 4A** for the emergency procedure.

6. Set the last joint of casing run in the floor slips.

7. Pick up the casing hanger/running tool assembly and make it up in the casing string. Torque connection to thread manufacturer's optimum make up torque.

8. ***Using chain tongs only,*** back off the running tool with clockwise rotation (Right) one full turn to verify ease of operation and then re make the connection with counter clockwise rotation (Left) just until contact with the energizing ring is.

WARNING: Do Not apply torque to the Hanger/Tool connection.



Stage 4 — Hang Off the 9-5/8" Casing

9. Calculate the total landing dimension by adding the previously attained RKB dimension and 15.48", the depth of the wellhead.

10. Drain the BOP stack and wellhead through the 3" ball valve.

11. Starting at the top of the 45° angle load shoulder of the casing hanger measure up 5 feet and place a horizontal paint mark on the landing joint and write 5 next to the mark.

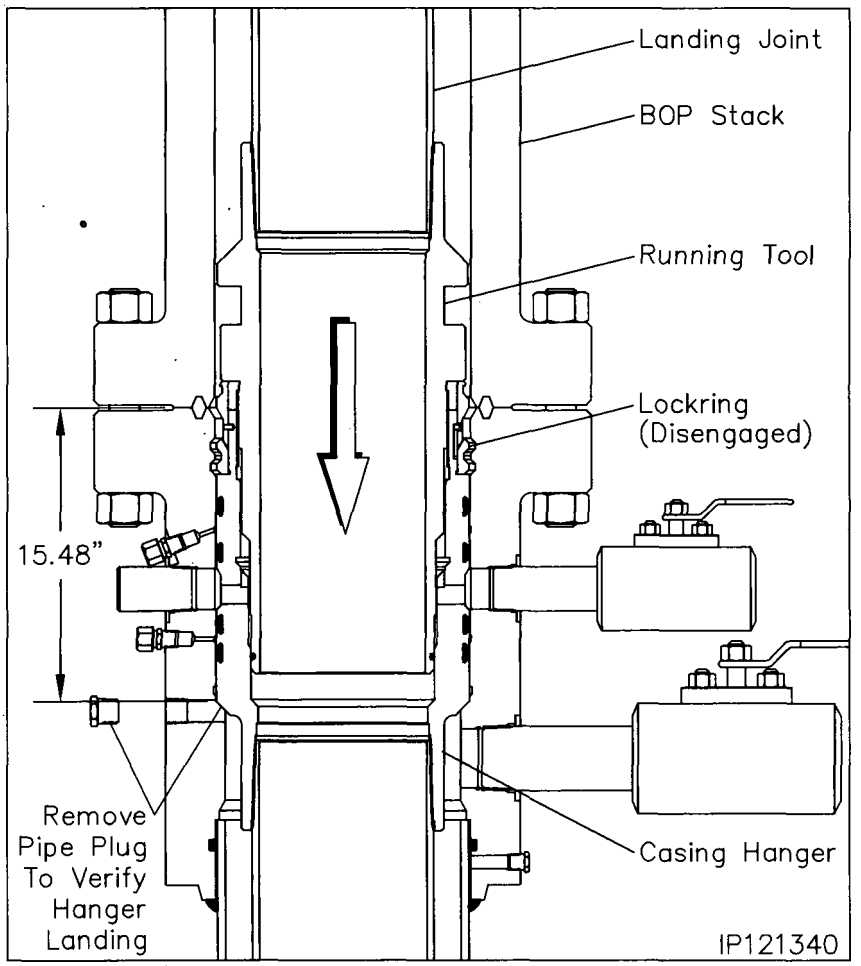
12. Using the 5 foot stick, slowly and carefully lower the Hanger through the BOP, marking the landing joint at five foot increments until you come to the calculated total landing dimension. Place a paint mark on the landing joint at that dimension and write the landing dimension next to the mark. Place an additional mark on the landing joint 1-1/2" above the first mark and write engaged.

13. Continue carefully lowering the hanger through the BOP stack and land it on the load shoulder in the housing, 15.48" below the top of the MBU-LR housing and slack off all weight and verify that the landing dimension paint mark has aligned with the rig floor.

14. Locate the 1" LP sight port on the lower O.D. of the housing and remove the pipe plug.

15. Look through the port to verify the hanger is properly landed. The white painted load shoulder will be clearly visible in the open port.

16. Reinstall the 1" pipe plug and tighten securely.



Stage 4 — Hang Off the 9-5/8" Casing

Seal Test

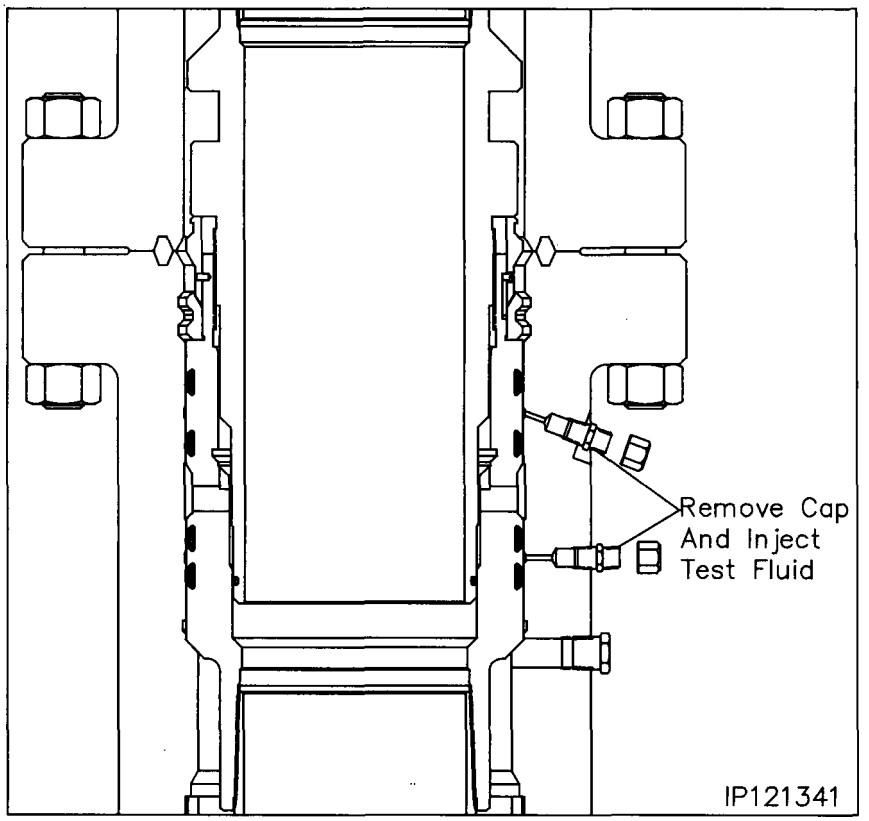
17. Locate the upper and lower seal test fittings on the O.D. of the housing and remove the dust caps from both fittings.

18. Attach a test pump to one of the open fittings and pump clean test fluid between the seals until a stable test pressure of 5,000 psi is attained.

19. If a leak develops, bleed off test pressure, remove the hanger from the wellhead and replace the leaking seals.

20. Repeat steps 17 through 19 for the remaining seal test.

21. After satisfactory test are achieved, bleed off all test pressure, remove test pump and reinstall the dust caps on the open fittings



Stage 4 — Hang Off the 9-5/8" Casing

Engaging the Lockring

22. ***Using Chain Tongs Only located 180° apart***,, rotate the landing joint approximately 6 turns counter clockwise (Left) to engage the casing hanger lockring in its mating groove in the bore of the MBU-LR housing.

Note: Approximately 800 to 900 ft. lbs. of torque will be required to break over the shear pins in the hanger. The torque will drop off and then increase slightly when the energizing ring pushes the lockring out. A positive stop will be encountered when the lockring is fully engaged.

Note: When properly engaged the second paint mark on the landing joint will align with the rig floor.

WARNING: It is imperative that the landing joint remain concentric with the well bore when rotating to engage the lockring. This can be accomplished with the use of the air hoist.

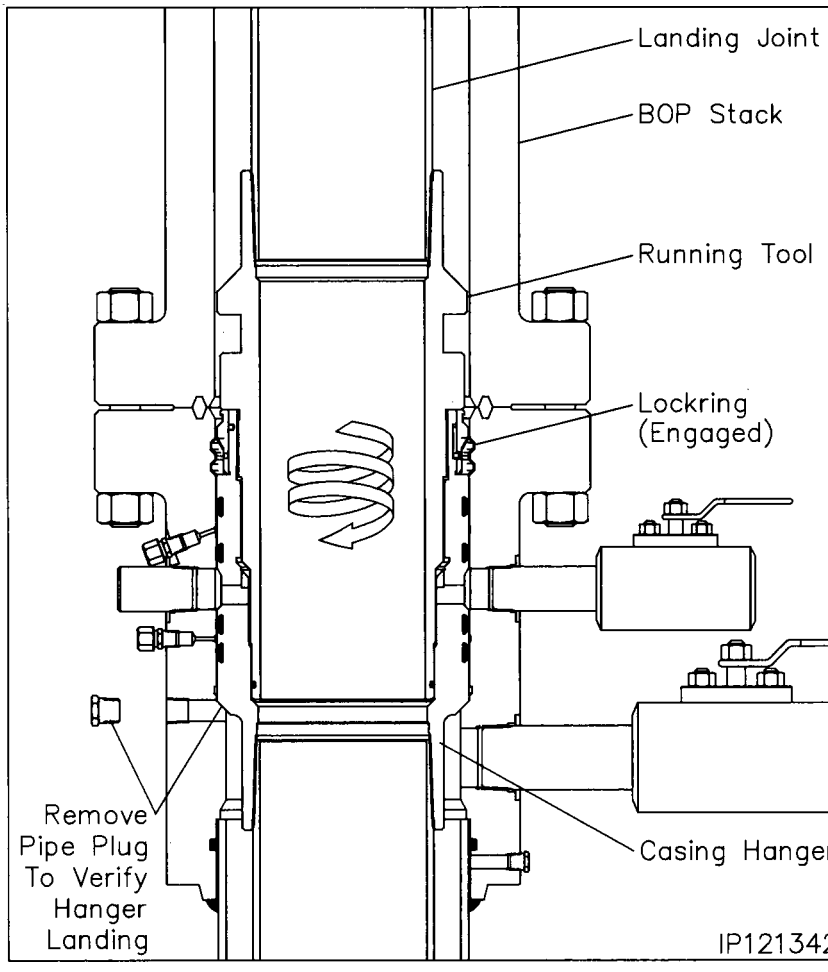
WARNING: If the required turns to engage the lockring or not met or excessive torque is encountered, remove the casing hanger and call Houston Engineering.

23. Back off the landing joint/running tool approximately three turns clockwise (Right). Using the elevators, exert a 30,000 lbs. over string weight pull on the landing joint to confirm positive lockring engagement.

24. Slack off all weight and place a vertical paint mark on the landing joint to verify if the casing string rotates during the cementing process.

Note: It is not necessary to remake the casing hanger running tool connection after the over pull. If desired two counter clockwise rotations may be made but full make up is not required.

25. Cement the casing as required, taking returns through the lower 3" outlet.



26. With cement in place, bleed off cement pressure and remove cementing equipment.

27. If well condition permit, remove the 1" sight port pipe plug to observe if the hanger rotates during the removal of the running tool.

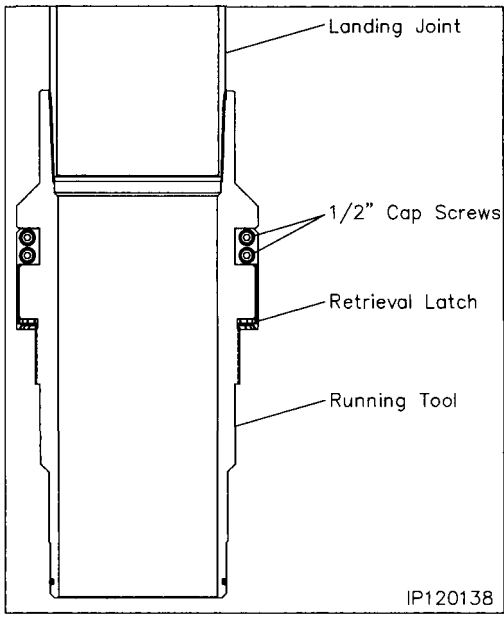
28. ***Using Chain Tongs Only located 180° apart***, retrieve the Running Tool and landing joint by rotating the landing joint clockwise (Right) an additional 11 turns or until the tool comes free of the hanger. Retrieve the tool with a straight vertical lift.

29. Reinstall the 1" pipe plug and tighten securely.

Stage 4 — Hang Off the 9-5/8" Casing

Retrieving The Casing Hanger

In the event that the casing hanger needs to be remove the 13-5/8" x 9-5/8" MBU-LR Casing Hanger Running and retrieving tool can be fitted with a retrieval latch that will lift the casing hanger energizing ring and allow the lockring to disengage.



1. Examine the ***13-5/8" x 9-5/8" LC MBU-LR Casing Hanger Running and Retrieving Tool (Item ST3)***. Verify the following:
   - bore is clean and free of debris
   - O.D. Acme threads are clean and in good condition
   - o-ring is in place and in good condition
   - proper length landing joint is made up in top of the tool with thread lock compound
   - retrieval latch is available and in good condition

2. Thoroughly clean and lightly the latch groove of the tool with oil or light grease.

3. Remove the (4) 1/2" cap screws retaining the two halves of the retrieval latch.

4. Install the retrieval latch around the Retrieving Tool body as indicated and reinstall the 1/2" cap screws. Tighten screws securely.

WARNING: Ensure the latch rotates freely on the tool. If not remove and check the latch and tool for burrs or imperfections in the groove.

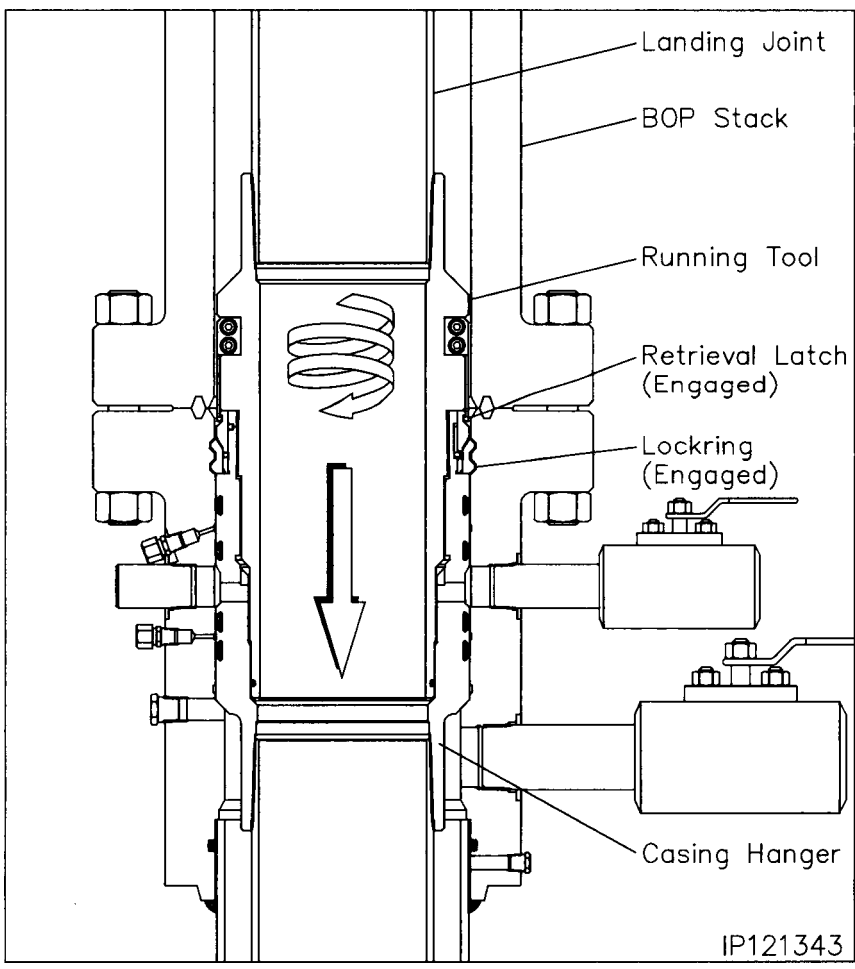
5. Thoroughly clean and lightly lubricate the seal surfaces and Acme threads of the tool with oil or a light grease.

6. Using the casing elevators, carefully lower the tool through the BOP stack and into the casing hanger bore until the tool contacts the top of the hanger Acme threads

Note: Contact should be made at previously attained RKB dimension.

7. **Using chain tongs only located 180° apart**, rotate the landing joint clockwise (Right) to locate the thread start then counter clockwise (Left) approximately 13 turns.

WARNING: Slowly make the last two revolutions. The torque will increase slightly as the latch passes over the top of the energizing ring and snaps into position under the lip of the ring.



Stage 4 — Hang Off the 9-5/8" Casing

WARNING: The landing joint must remain concentric with the well bore when screwing into the hanger.

8. With positive engagement attained, reposition the tongs for clockwise (Right) rotation and then rotate the landing joint approximately 6 turns to lift the energizing ring and release the lockring.

Note: The landing joint should rise approximately 1-1/2" and come to a positive stop against the stop screws.

9. Halt rotation and remove the chain tongs.

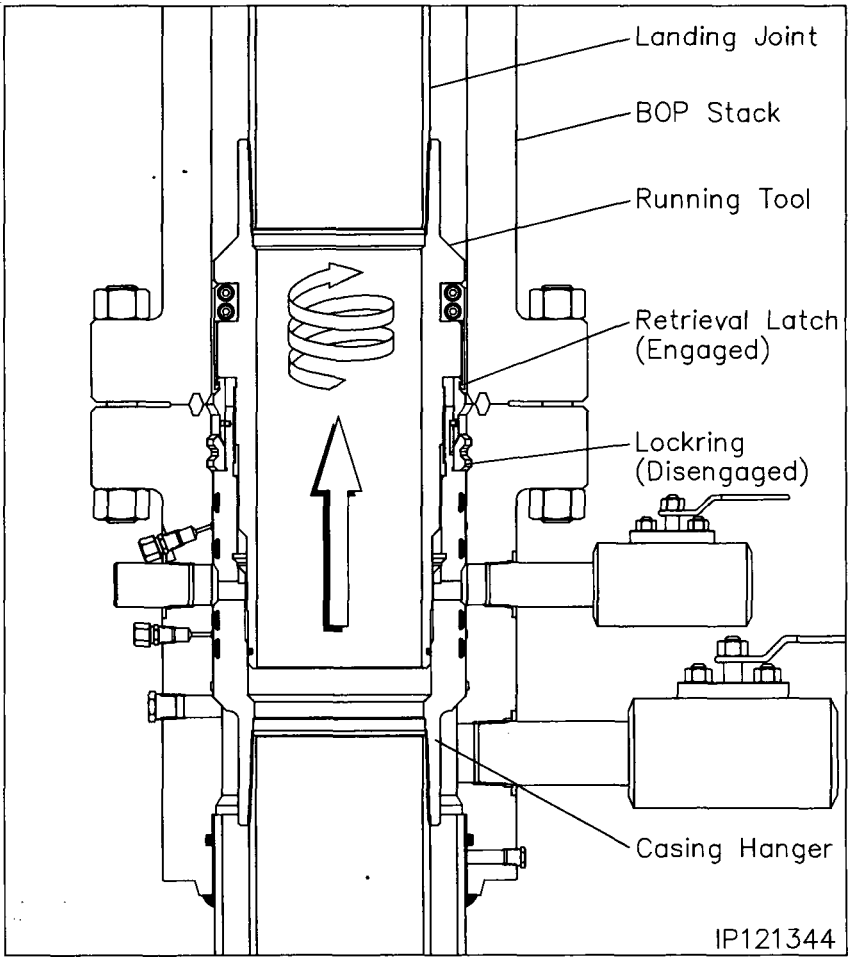
10. Using the drill pipe elevators, slowly pick up on the casing hanger and retrieve it from the wellhead.

11. With the tool and hanger at the rig floor, set the casing in the floor slips and slack off.

12. Rotate the landing joint counter clockwise (Left) one turn.

13. Remove the (4) 1/2" cap screws from the retrieval latch and remove the latch assembly from the tool.

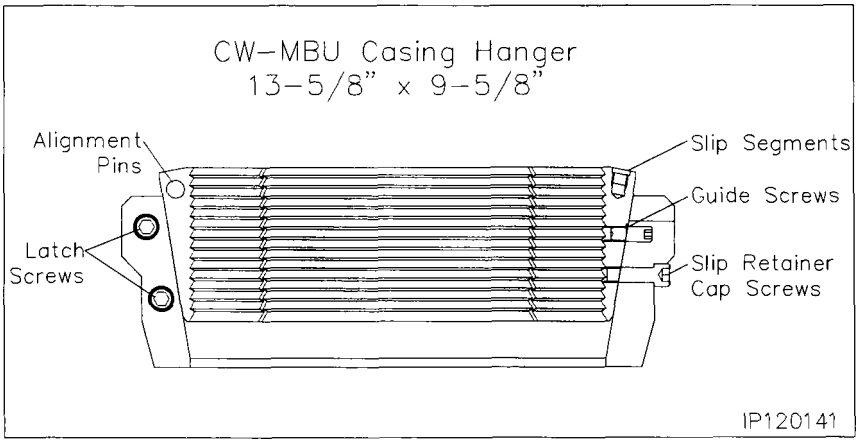
14. Remove the casing hanger and running tool from the casing string.

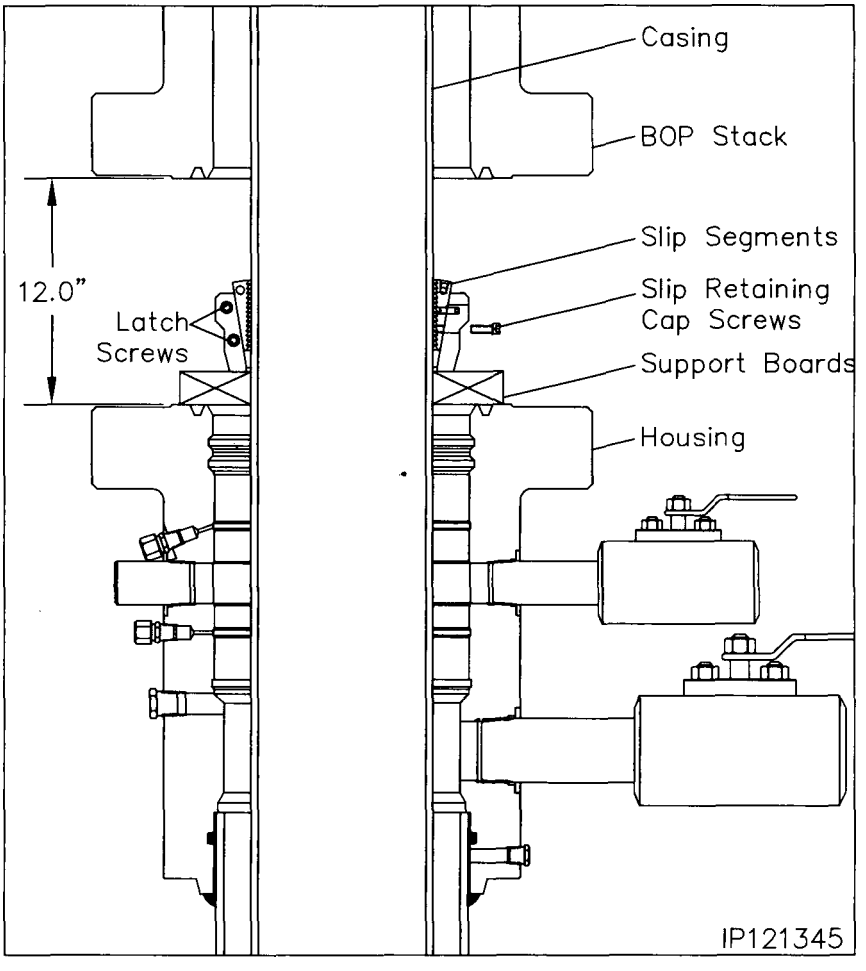


Stage 4A — Hang Off the 9-5/8" Casing (Emergency)

Note: The following procedure should be followed **ONLY** if the 9-5/8" casing should become stuck in the hole. If the casing did not get stuck and is hung off with the Mandrel Casing Hanger, skip this stage.

1. Cement the hole as required.
2. Drain the BOP stack through the housing side outlet valve.
3. Separate the connection between the BOP and the MBU-LR housing.
4. Pick up on the BOP stack a minimum of 12" and secure with safety slings.
5. Washout as required.
6. Examine the ***13-5/8" x 9-5/8" MBU Slip Casing Hanger (Item A7a).*** Verify the following:
   - slips and internal bore are clean and in good condition
   - all screws are in place
7. There are two latch screws located in the top of the casing hanger. Using a 5/16" Allen wrench, remove the two latch screws located 180° apart and separate the hanger into two halves.
8. Place two boards on the housing flange against the casing to support the Hanger.
9. Pick up one half of the hanger and place it around the casing and on top of the boards.
10. Pick up the second hanger half and place it around the casing adjacent the first half.
11. Slide the two hanger halves together ensuring the slip alignment pins properly engage the opposing hanger half.
12. Reinstall the latch screws and tighten securely.





Stage 4A — Hang Off the 9-5/8" Casing (Emergency)

13. Prepare to lower the Hanger into the housing bowl.

WARNING: Do Not Drop the Casing Hanger!

14. Grease the Casing Hanger's body and remove the slip retaining screws.

15. Remove the boards and allow the Hanger to slide into the housing bowl. When properly positioned the top of the hanger will be *approximately 14.05" below the top* of the housing.

16. Pull tension on the casing to the desired hanging weight and then slack off.

Note: A sharp decrease on the weight indicator will signify that the Hanger has taken weight and at what point, If this does not occur, pull tension again and slack off once more.

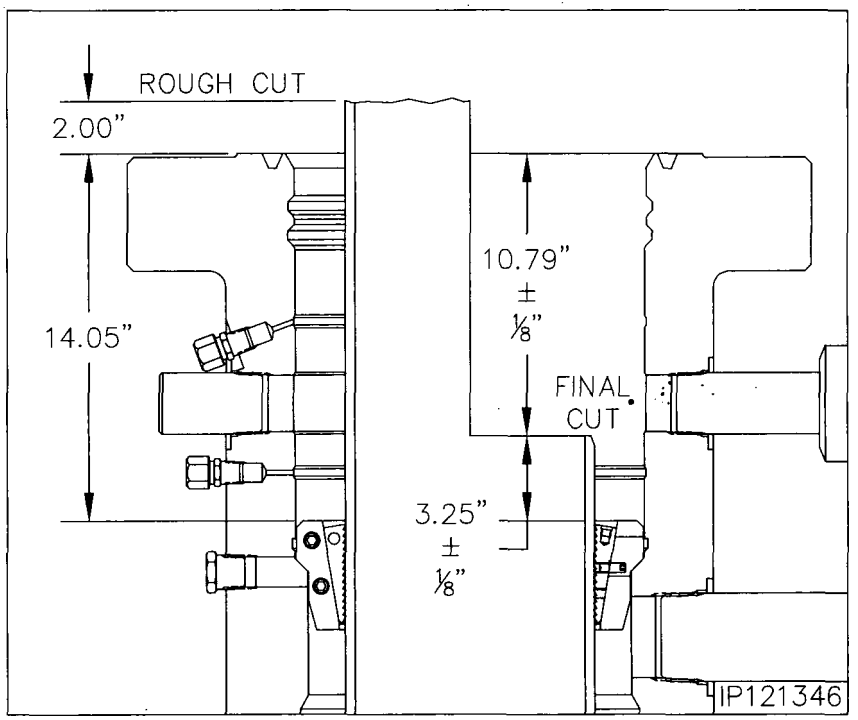
WARNING: Because of the potential fire hazard and the risk of loss of life and property, It is highly recommended to check the casing annulus and pipe bore for gas with an approved sensing device prior to cutting off the casing. If gas is present, do not use an open flame torch to cut the casing. It will be necessary to use a air driven mechanical cutter which is spark free.

17. Rough cut the casing approximately 2" above the top flange and move the excess casing out of the way.

WARNING: Install the long wear bushing in the housing to ensure the housing bore is not damaged with the torch or cutting debris.

18. Final cut the casing at 10.79" ± 1/8" below the housing flange or 3.25" ± 1/8" above the hanger body.

19. Grind the casing stub level and then place a 3/16" x 3/8" bevel on the O.D. and a I.D. chamfer to match the minimum bore of the packoff to be installed.



Note: There must not be any rough edges on the casing or the seals of the Packoff will be damaged.

20. Remove the wear bushing and then thoroughly clean the housing bowl, removing all cement and cutting debris.

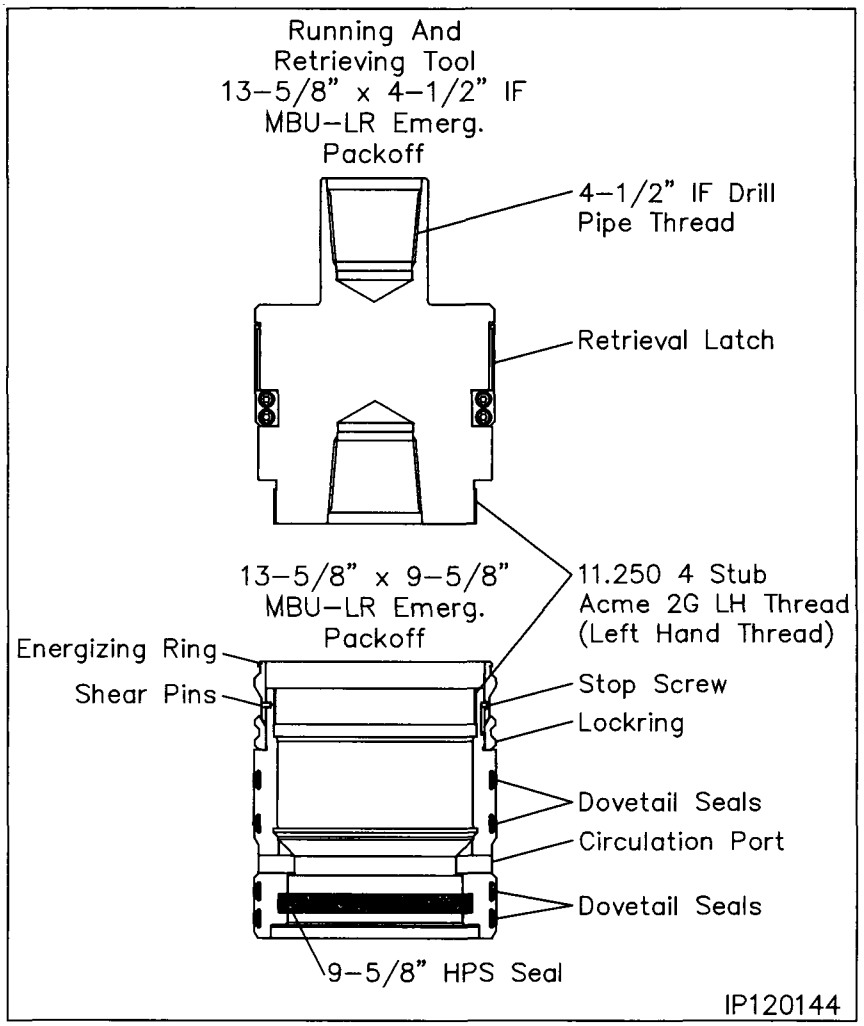
Stage 4B — Install the 9-5/8" MBU-LR Emergency Packoff

The following steps detail the installation of the CW MBU-LR Packoff Assembly for the emergency casing hanger.

1. Examine the ***13-5/8" Nominal x 9-5/8" x 11.250" 4 Stub Acme 2G LH box top MBU-LR Packoff Assembly (Item A7b).*** Verify the following:
   - all elastomer seals are in place and undamaged
   - internal bore, and ports, are clean and in good condition
   - lockring is fully retracted
   - energizer ring is in its upper most position and retained with shear pins
   - anti-rotation plunger is in place, free to move

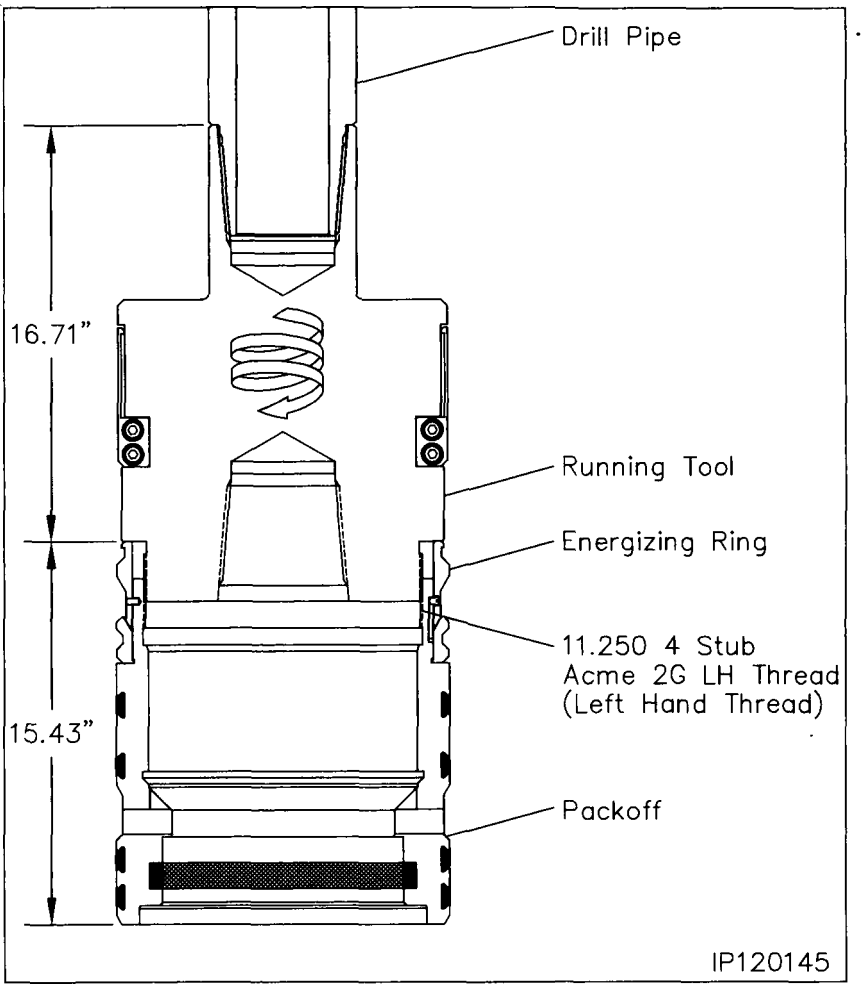
2. Lubricate the ID of the 'HPS' seal and the OD of the dovetail seals liberally with a light oil or grease.

3. Examine the ***13-5/8" Nominal x 4-1/2" IF x 11.250" 4 Stub Acme 2G LH box top MBU-LR Packoff Running Tool (Item ST4).*** Verify the following:
   - Acme threads are clean and in good condition
   - actuation sleeve is clean, in good condition and rotates freely
   - retrieval latch is removed and stored is safe place



Stage 4B — Install the 9-5/8" MBU-LR Emergency Packoff

4. Make up a 4-1/2" IF drill collar to the top of the Running Tool and tighten connection to thread manufacturer's maximum make up torque.
5. Run in the hole with two stands of drill pipe and set in floor slips.
6. Thoroughly clean and lightly lubricate the mating Acme threads of the running tool and packoff with oil or light grease.
7. Pick up the packoff and carefully pass it over the drill pipe and set it on top of the floor slips.
8. Pick up the Running Tool with landing joint and make it up to the drill pipe in the floor slips.
9. Pick up the packoff and thread it onto the running tool with clockwise (Right) rotation until the Energizing Ring makes contact with the bottom shoulder of the tool. Approximately 4 turns.
10. Thoroughly clean and lightly lubricate the packoff ID 'HPS' seal and the OD dovetail seals with oil or light grease.



Stage 4B — Install the 9-5/8" MBU-LR Emergency Packoff

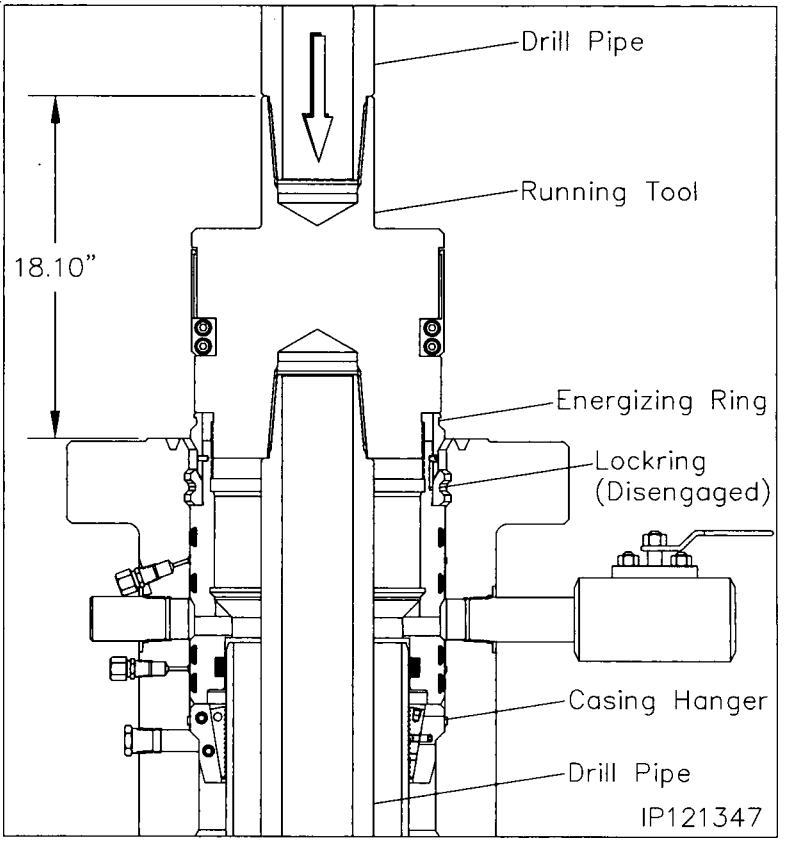
Landing the Packoff

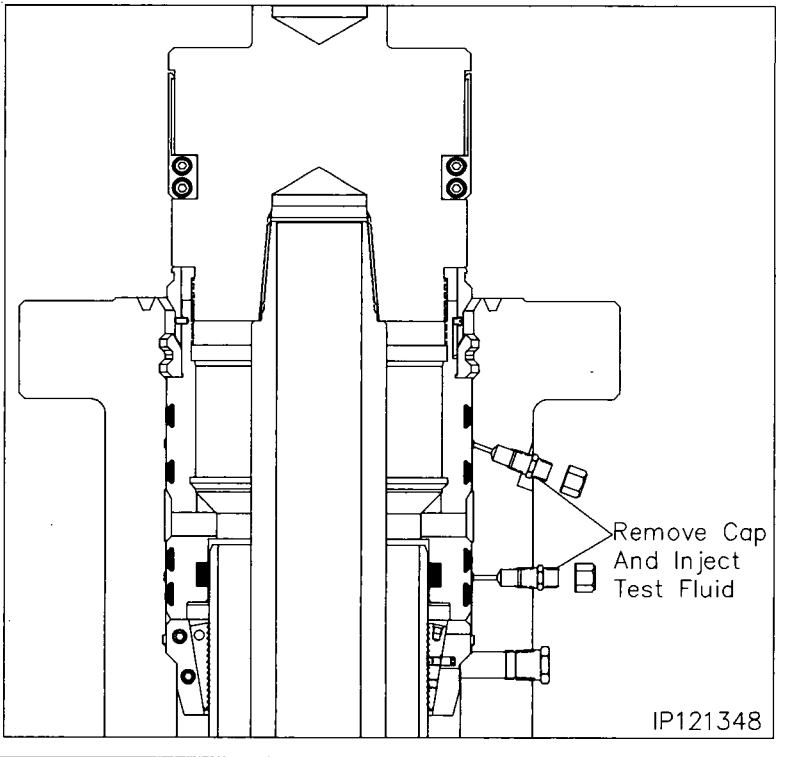
1. Pick up the drill string and remove the floor slips.
2. Carefully lower the packoff through the rig floor and into the housing until it lands on top of the slip hanger.

Note: When properly positioned the top of the running tool will be approximately 18.10" above the top of the MBU-LR Housing

Seal Test

3. Locate the upper and lower seal test fittings on the O.D. of the housing and remove the dust caps from both fittings.
4. Attach a test pump to one of the open fittings and pump clean test fluid between the seals until a stable test pressure of 5,000 psi is attained.
5. If a leak develops, bleed off test pressure, remove the hanger from the wellhead and replace the leaking seals.
6. Repeat steps 3 through 5 for the remaining seal test.
7. After satisfactory test are achieved, bleed off all test pressure, remove test pump and reinstall the dust caps on the open fittings





Stage 4B — Install the 9-5/8" MBU-LR Emergency Packoff

Engaging the Lockring

8. Using only chain tongs, rotate the landing joint approximately 6 turns counter clockwise (Left) to engage the packoff lockring in its mating groove in the bore of the MBU-LR housing.

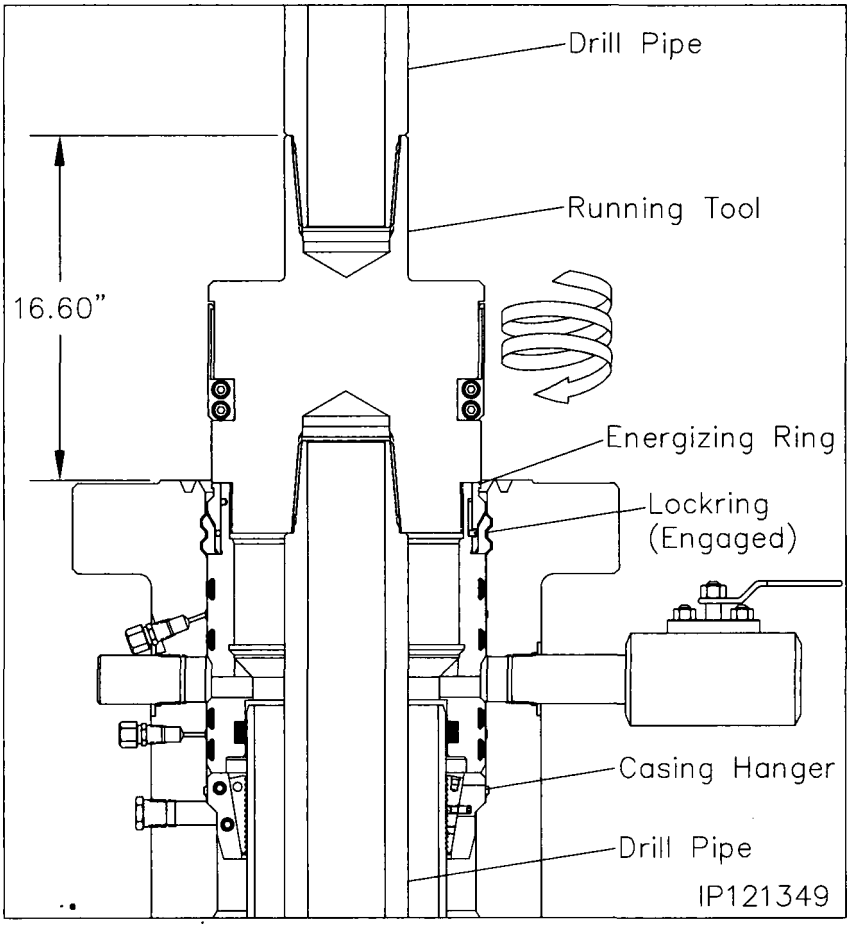
Note: Approximately 800 to 900 ft. lbs. of torque will be required to break over the shear pins in the packoff. The torque will drop off and then increase slightly when the energizing ring pushes the lockring out. A positive stop will be encountered when the lockring is fully engaged.

WARNING: It is imperative that the drill pipe landing joint remain concentric with the well bore when rotating to engage the lockring. This can be accomplished with the use of the air hoist.

WARNING: If the required turns to engage the lockring or not met or excessive torque is encountered, remove the packoff and call Houston Engineering.

9. Back off the landing joint/running tool approximately three turns. Using the drill pipe elevators, exert a 20,000 lbs. pull on the landing joint.

10. Using only chain tongs, rotate the landing joint clockwise until the tool comes free of the packoff (approximately 9 turns) and then retrieve the tool with a straight vertical lift.



Stage 4B — Install the 9-5/8" MBU-LR Emergency Packoff

In the event the packoff is required to be removed after the lockring is engaged the following procedure is to be followed.

Retrieving the Packoff

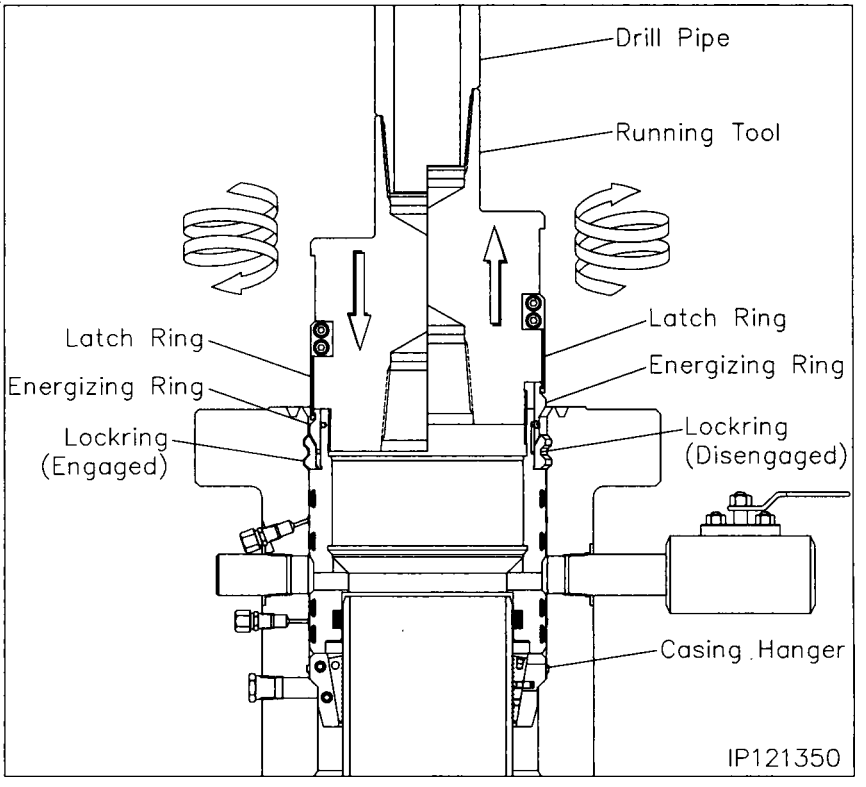
1. Locate the retrieval latch assembly with (4) 1/2" cap screws
2. Install the retrieval latch onto the running tool with the latch fingers facing down and install the cap screws and tighten them securely.
3. Ensure the retrieval latch freely rotates on the running tool actuation sleeve.
4. Carefully lower the running tool into the packoff.
5. Rotate the drill pipe clockwise (Right)to locate the thread start and then counter clockwise (Left) (approximately 10 turns) to a positive stop.

Note: At this point the retrieval latches will have passed over the energizing ring and snapped into place.

6. Rotate the drill pipe clockwise (approximately 6-1/2 turns) to a positive stop. The drill pipe should rise approximately 1-1/2".

Warning: Do not exceed the 6-1/2 turns or the packoff may be seriously damaged.

7. Carefully pick up on the drill pipe and remove the packoff from the MBU-LR wellhead with a straight vertical lift.
8. Redress the Packoff and reset as previously outlined.



Stage 5 — Test the BOP Stack

Immediately after making up the BOP stack and periodically during the drilling of the well for the next casing string the BOP stack (connections and rams) must be tested.

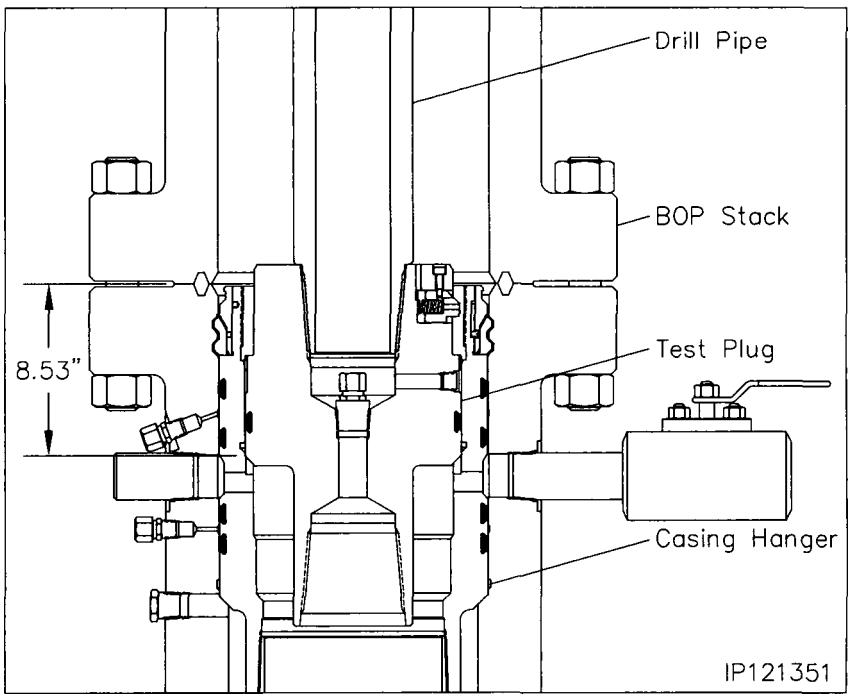
1. Examine the ***11" Nominal x 4-1/2" IF CW Test Plug/Retrieving Tool (Item ST5)***. Verify the following:
   - 1-1/4" VR plug and weep hole plug are in place and tightened securely
   - elastomer seal is in place and in good condition
   - retractable lift lugs are in place, clean, and free to move
   - drill pipe threads are clean and in good condition

Note: Prior to installing the BOP it is recommended to attain an accurate RKB *dimension for future use for* accurately landing test plugs and casing hangers. This dimension is attained by dropping a tape measure from the rig floor to the top of the wellhead flange. Pull tape taut and record the dimension from the wellhead to the top of the rig floor or kelly bushings. Ensure this dimension is placed on the BOP board in the dog house and on the drillers daily report sheet.

2. Position the test plug with the elastomer seal down and the lift lugs up and make up the tool to a joint of drill pipe.

WARNING: Ensure that the lift lugs are up and the elastomer seal is down

3. Remove the 1/2" NPT pipe plug from the weep hole if pressure is to be supplied through the drill pipe.



4. Open the housing upper side outlet valve.

5. Lightly lubricate the test plug seal with oil or light grease.

6. Carefully lower the test plug through the BOP and land it on the load shoulder in the packoff, 8.53" below the top of the housing.

7. Close the BOP rams on the pipe and test the BOP to 5,000 psi.

Note: Any leakage past the test plug will be clearly visible at the open side outlet valve.

8. After a satisfactory test is achieved, release the pressure and open the rams.

9. Remove as much fluid as possible from the BOP stack and the retrieve the test plug with a straight vertical lift.

Note: When performing the BOP blind ram test it is highly recommended to suspend a stand of drill pipe below the test plug to ensure the plug stays in place while disconnecting from it with the drill pipe.

10. Repeat this procedure as required during the drilling of the hole section.

Stage 6 — Run the Upper Wear Bushing

Note: Always use a Wear Bushing while drilling to protect the load shoulders from damage by the drill bit or rotating drill pipe. The Wear Bushing **must be retrieved** prior to running the casing.

1. Examine the ***13-5/8" x 11" x 9.00" ID MBU-LR-UPR Wear Bushing(Item ST6).*** Verify the following
   - internal bore is clean and in good condition
   - o-ring is in place and in good condition
   - shear o-ring cord is in place and in good condition
   - paint anti-rotation lugs white and allow paint to dry

Run the Wear Bushing Before Drilling

2. Orient the ***13-5/8" Nominal x 4-1/2" IF CW Test Plug/Retrieving Tool (Item ST1)*** with drill pipe connection up.

3. Attach the Retrieving Tool to a joint of drill pipe.

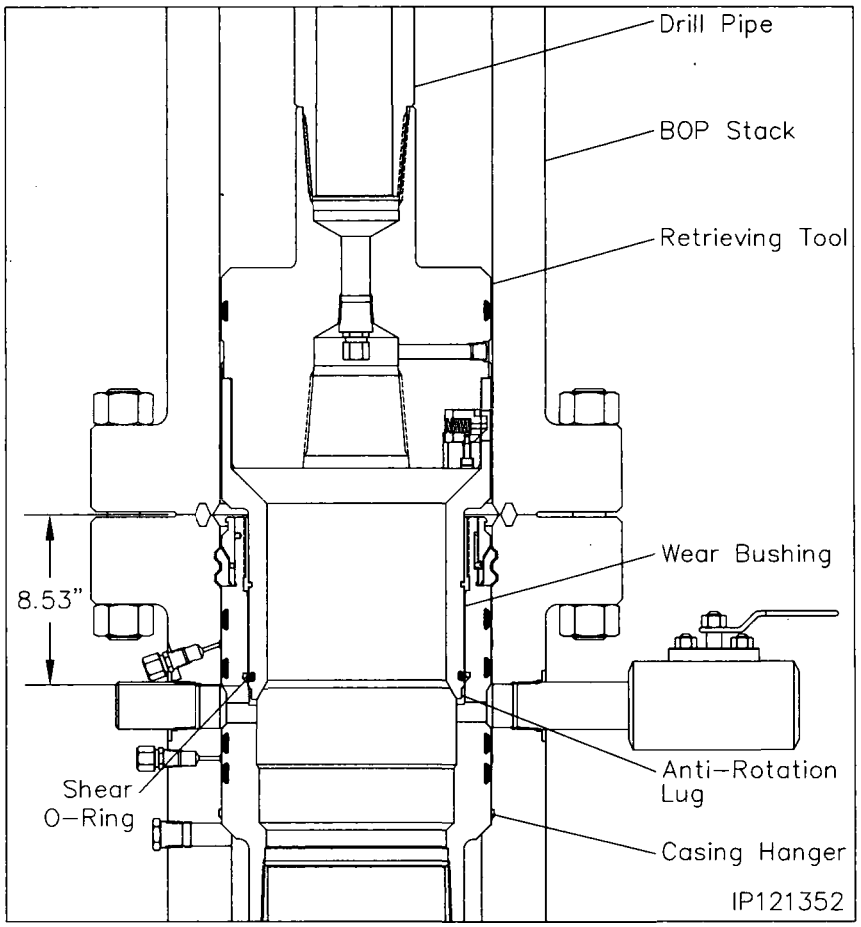
4. Align the retractable lift lugs of the tool with the retrieval holes of the bushing and the carefully lower the tool into the Wear Bushing until the lugs snap into place.

Note: If the lugs did not align with the holes, rotate the tool in either direction until they snap into place.

5. Apply a heavy coat of grease, not dope, to the OD of the bushing.

6. Slowly lower the Tool/Bushing Assembly through the BOP stack and land it on the load shoulder in the packoff, 8.53" below the top of the housing.

7. Rotate the drill pipe clockwise (right) to locate the stop lugs in their mating notches in the packoff. When properly aligned the bushing will drop an additional 1/2".



Note: The Shear O-Ring on bottom of the bushing will locate in a groove above the load shoulder in the head to act as a retaining device for the bushing.

8. Remove the Tool from the Wear Bushing by rotating the drill pipe counter clockwise (left) 1/4 turn and lifting straight up

9. Drill as required.

Note: It is highly recommended to retrieve, clean, inspect, grease, and reset the wear bushing each time the hole is tripped during the drilling of the hole section.

Retrieve the Wear Bushing After Drilling

10. Make up the Retrieving Tool to the drill pipe .

11. Slowly lower the Tool into the Wear Bushing.

12. Pick up and balance the riser weight.

13. Rotate the Retrieving Tool clockwise until a positive stop is felt. This indicates the lugs have snapped into the holes in the bushing.

14. Retrieve the Wear Bushing, and remove it and the Retrieving Tool from the drill string.

Stage 7 — Hang Off the 7" Casing

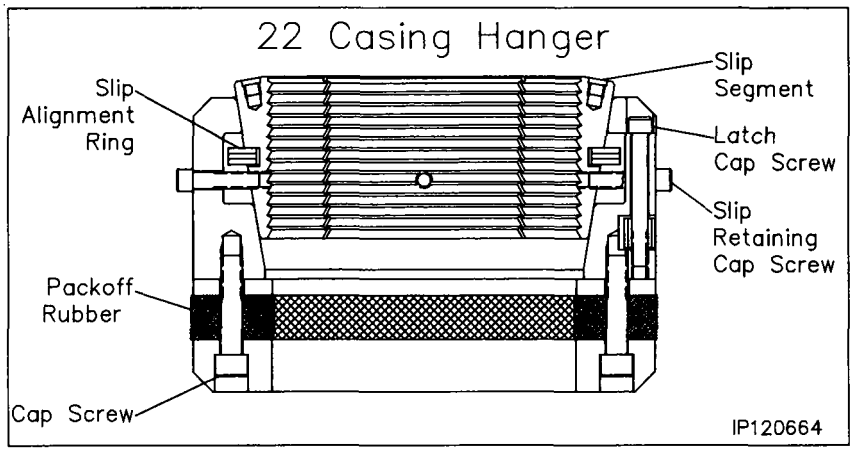
1. Run the 7" casing string as required and cement in place.
2. Drain the housing bowl through the upper side outlet.
3. Separate the BOP from the MBU-LR housing and lift the BOP approximately 14" above the housing and secure BOP with safety slings.
4. Using a fresh water hose, thoroughly wash out the packoff bowl.

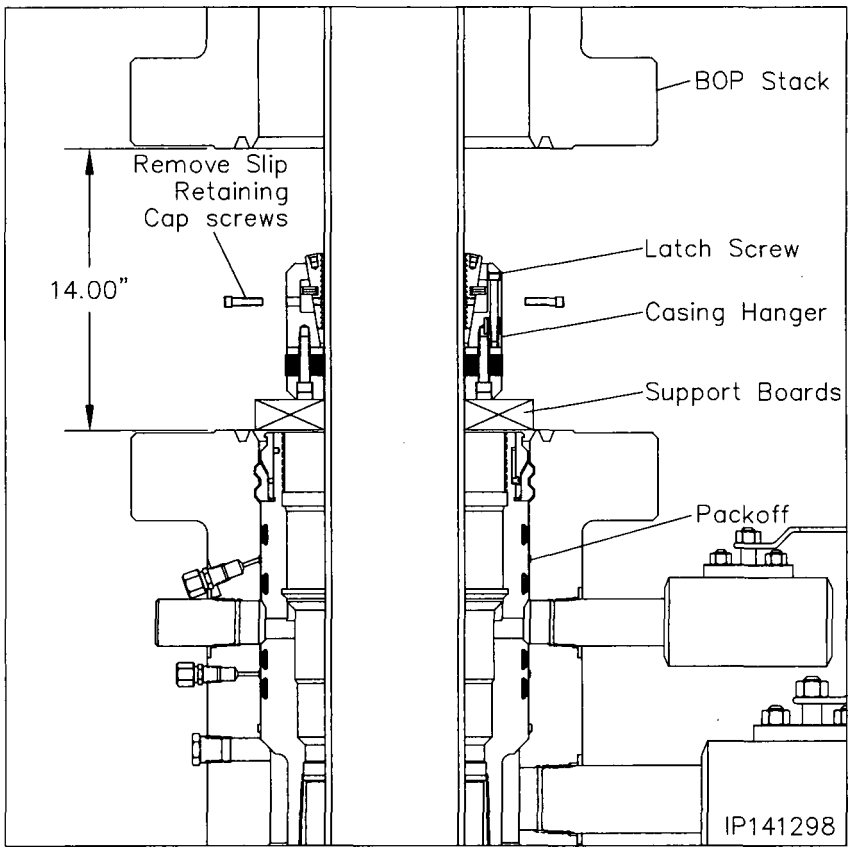
Note: Casing Head side outlet valve to remain open while setting the casing hanger.

5. Examine the ***11" X 7" C22 Casing Hanger (Item B9).*** Verify the following:
   - slips and internal bore are clean and in good condition
   - all screws are in place
   - seal element is in good condition

Note: Ensure that the packoff rubber does not protrude beyond the O.D. of the casing hanger body. If it is, loosen the compression cap screws in the top of the hanger.

6. Remove the latch screw to open the Hanger.
7. Place two boards on the Casing Head flange against the casing to support the Hanger.
8. Wrap the Hanger around the casing and replace the latch screw.
9. Prepare to lower the Hanger into the Casing Head bowl.
10. Grease the Casing Hanger's body and remove the slip retaining cap screws.





Stage 7 — Hang Off the 7" Casing

11. Remove the boards and allow the Hanger to slide into the packoff bowl. When the Hanger is down, the top of the hanger body will be approximately 2.27" below the top of the housing, pull tension on the casing to the desired hanging weight and then slack off..

Note: A sharp decrease on the weight indicator will signify that the Hanger has taken weight and at what point, If this does not occur, pull tension again and slack off once more.

WARNING: Because of the potential fire hazard and the risk of loss of life and property, It is highly recommended to check the casing annulus and pipe bore for gas with an approved sensing device prior to cutting off the casing. If gas is present, do not use an open flame torch to cut the casing. It will be necessary to use a air driven mechanical cutter which is spark free.

12. Rough cut the casing approximately 12" above the top flange and move the excess casing and BOP out of the way.

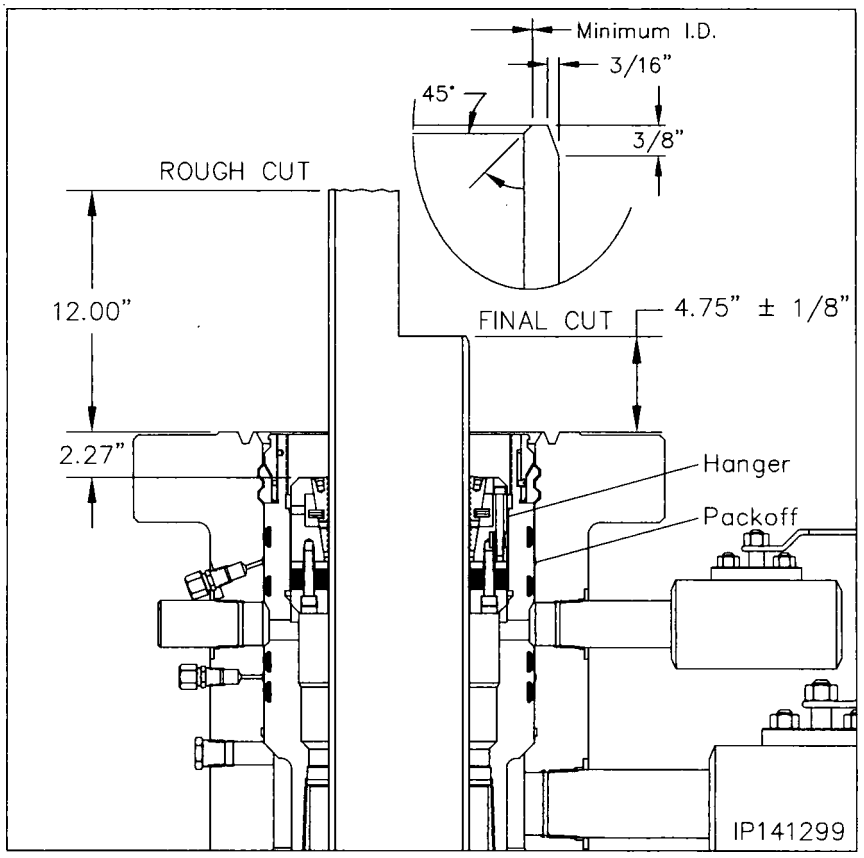
13. Final cut the casing at 4.75" ± 1/8" above the top flange of the housing.

14. Grind the casing stub level and then place a 3/16" x 3/8" bevel on the O.D. and a I.D. chamfer to match the minimum bore of the tubing head to be installed.

15. Using a high pressure water hose thoroughly clean the top of the casing hanger and void area above the hanger. Ensure all cutting debris are removed .

16. Fill the void above the hanger with clean test fluid to the top of the flange.

WARNING: Do Not over fill the void with test fluid - trapped fluid under the ring gasket may prevent a good seal from forming



Stage 8 — Install the Tubing Head

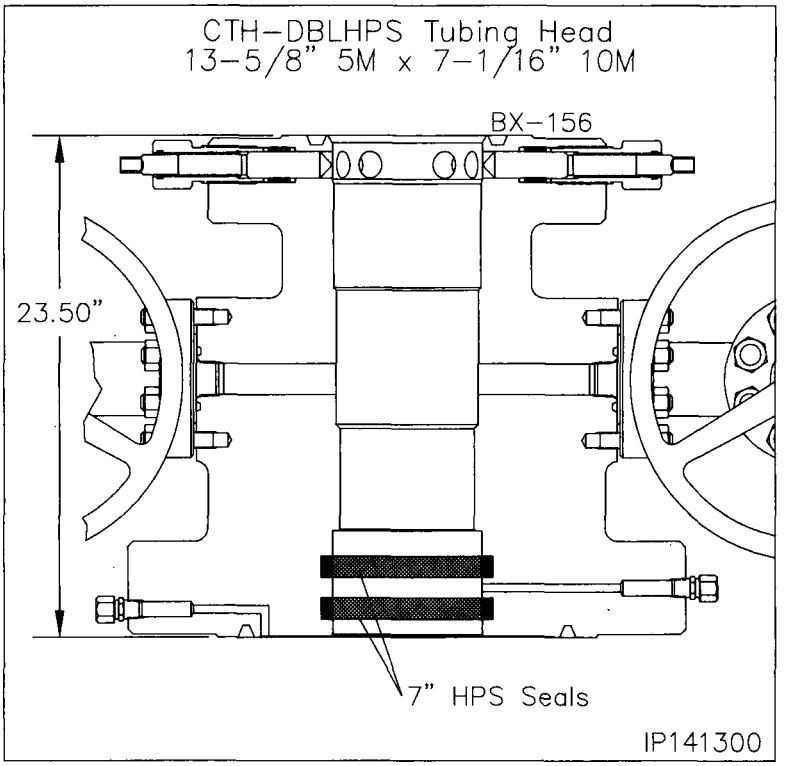
1. Examine the ***13-5/8" 5M x 7-1/16" 10M CW, CTH-DBLHPS Tubing Head (Item B1).*** Verify the following:
   - seal area and bore are clean and in good condition
   - ***HPS Secondary Seals*** are in place and in good condition
   - all peripheral equipment is intact and undamaged
2. Clean the mating ring grooves of the MBU-LR and Tubing Head.
3. Lightly lubricate the ID of the Tubing Head HPS Seals, and the casing stub with a light grease.

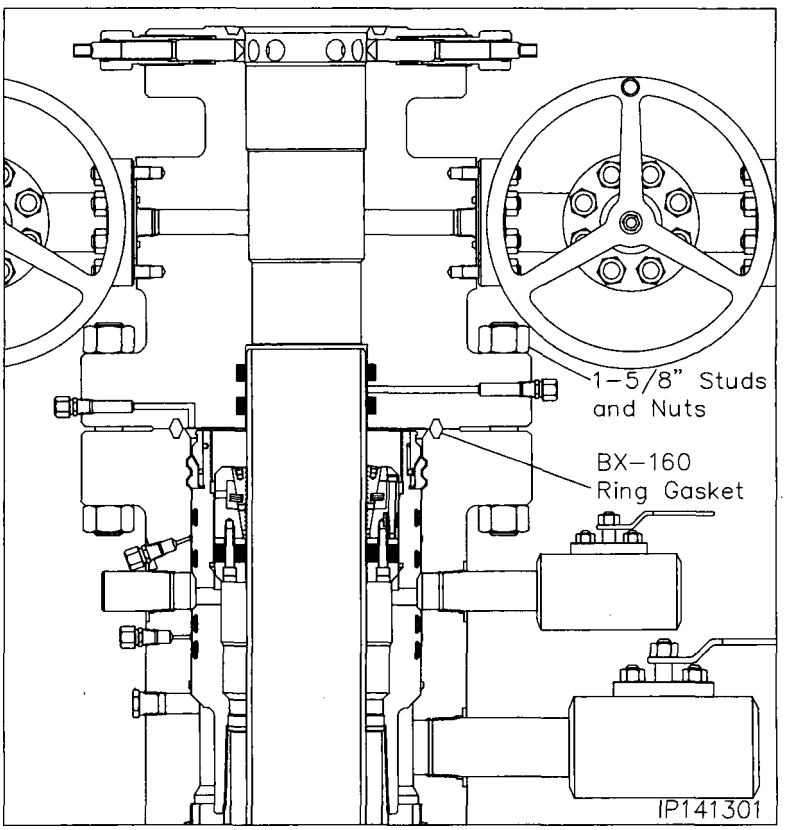
Note: Excessive grease may prevent a good seal from forming!

4. Install a new ***BX-160 Ring Gasket (Item B14)*** in the ring groove of the MBU-LR Housing.
5. Pick up the Tubing Head and suspend it above the MBU-LR Housing and casing stub.
6. Orient the Tubing Head so the outlets are in the proper position and then carefully lower the head and DSPA over the casing stub and land it on the ring gasket.

Warning: Do Not damage the HPS Seal or their sealing ability will be impaired!

7. Make up the flange connection using the DSPA studs and nuts, tightening them in an alternating cross pattern.

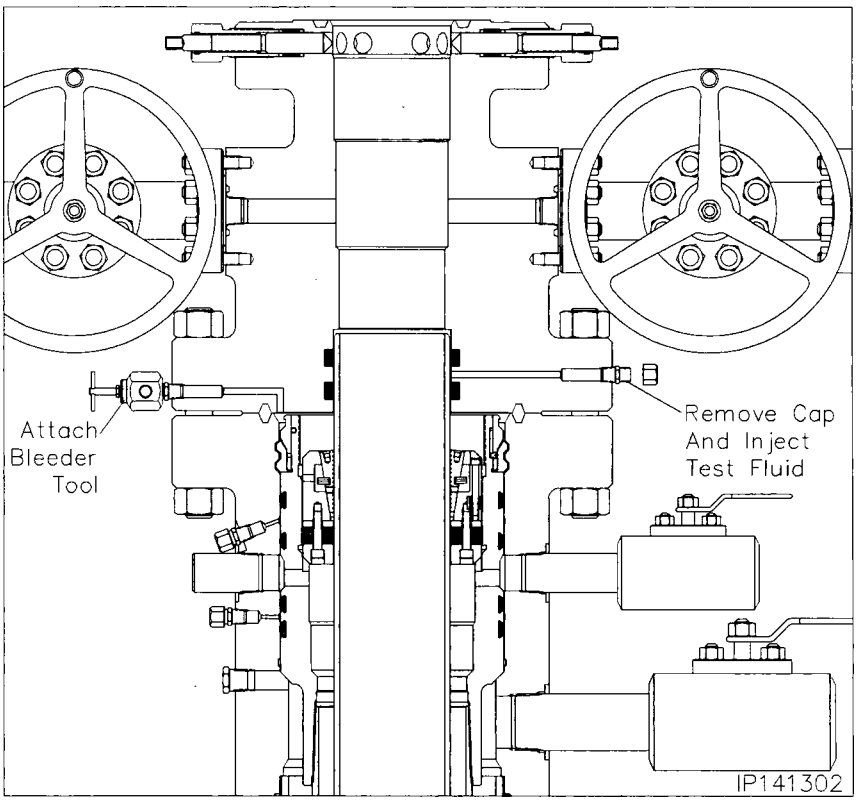




Stage 8 — Install the Tubing Head

Seal Test

1. Locate the "SEAL TEST" fitting and one of the "FLG TEST" fittings on the Tubing Head and remove the dust cap from both fittings.
2. Attach a Bleeder Tool to the open "FLG TEST" fitting and open the Tool.
3. Attach a Hydraulic Test Pump to the "SEAL TEST" fitting and pump clean test fluid between the HPS Seals until a test pressure of ***10,000 psi. or 80% of casing collapse — whichever is less***
4. Hold the test pressure for fifteen (15) minutes or as desired by the drilling supervisor.
5. If pressure drops a leak has developed. Take the appropriate action in the table below.
6. Repeat steps 1 - 5 until a satisfactory test is achieved.
7. When a satisfactory test is achieved, remove Test Pump, drain test fluid, and reinstall the dust cap on the open "SEAL TEST" fitting.

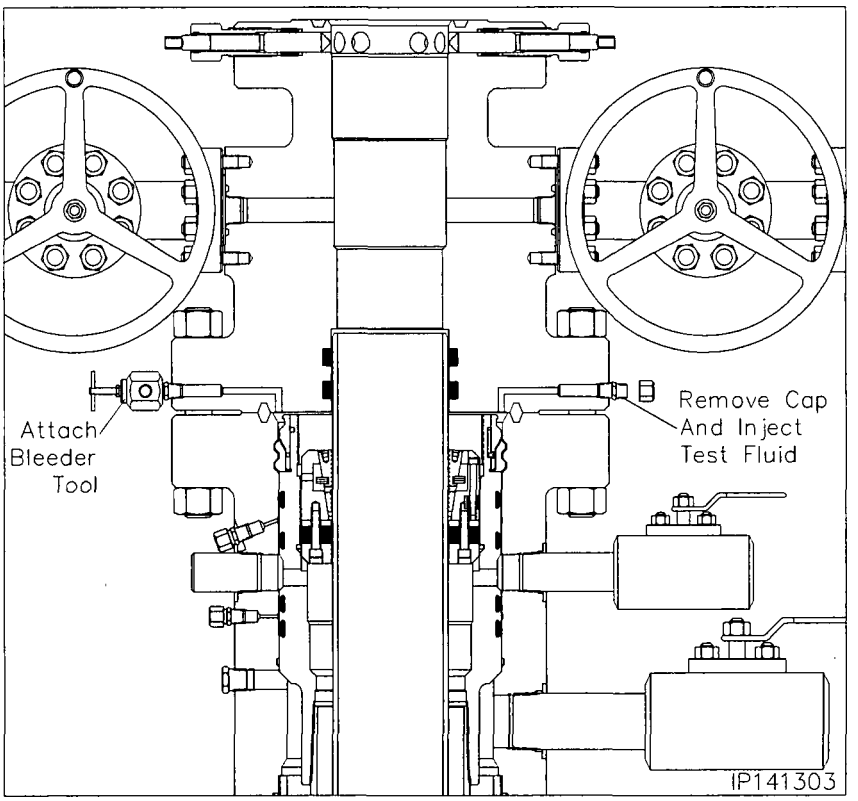


Seal Test	
Leak Location	**Appropriate Action**
Open bleeder tool - Lower HPS seal leaking	Remove Tubing Head and replace leaking seals. Re land and retest seals
Into the Tubing Head bore- Upper HPS Seal is Leaking	

Stage 8 — Install the Tubing Head

Flange Test

1. Locate the remaining "FLG TEST" fitting on the Tubing Head and remove the dust cap from the fitting.
2. Attach a test pump to the open "FLG TEST" fitting and pump clean test fluid into the flange connection until a continuous stream flows from the open "FLG TEST" bleeder tool.
3. Close the bleeder tool and continue pumping test fluid to ***5,000 psi. or 80% of casing collapse — whichever is less.***
4. Hold the test pressure for fifteen (15) minutes or as desired by the drilling supervisor.
5. If pressure drops a leak has developed. Take the appropriate action from the adjacent chart.
6. Repeat steps 1 through 6 until a satisfactory test is achieved.
7. Once a satisfactory test is achieved, remove the test pump and "FLG TEST" bleeder tool, drain test fluid, and reinstall the dust caps on the open fittings.



Flange Test	
Leak Location	**Appropriate Action**
Into casing annulus - casing hanger seal element is leaking	Remove tubing head, spear casing and reset the casing hanger. Redress the casing, reinstall the Tubing Head and retest
Flange connection - Ring gasket is leaking	Further tighten the flange connection

Recommended Procedure for Field Welding Pipe to Wellhead Parts for Pressure Seal

1. **Introduction and Scope.** The following recommended procedure has been prepared with particular regard to attaining pressure-tight weld when attaching casing heads, flanges, etc., to casing. Although most of the high strength casing used (such as N-80) is not normally considered field weldable, some success may be obtained by using the following or similar procedures.

Caution: In some wellheads, the seal weld is also a structural weld and can be subjected to high tensile stresses. Consideration must therefore be given by competent authority to the mechanical properties of the weld and its heat affected zone.

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   a. The steels used in wellhead parts and in casing are high strength steels that are susceptible to cracking when welded. It is imperative that the finished weld and adjacent metal be free from cracks. The heat from welding also affects the mechanical properties. This is especially serious if the weld is subjected to service tension stresses.

   b. This procedure is offered only as a recommendation. The responsibility for welding lies with the user and results are largely governed by the welder's skill. Weldability of the several makes and grades of casing varies widely, thus placing added responsibility on the welder. Transporting a qualified welder to the job, rather than using a less-skilled man who may be at hand, will, in most cases, prove economical. The responsible operating representative should ascertain the welder's qualifications and, if necessary, assure himself by instruction or demonstration, that the welder is able to perform the work satisfactorily.

2. **Welding Conditions.** Unfavorable welding conditions must be avoided or minimized in every way possible, as even the most skilled welder cannot successfully weld steels that are susceptible to cracking under adverse working conditions, or when the work is rushed. Work above the welder on the drilling floor should be avoided. The weld should be protected from dripping mud, water, and oil and from wind, rain, or other adverse weather conditions. The drilling mud, water, or other fluids must be lowered in the casing and kept at a low level until the weld has properly cooled. It is the responsibility of the user to provide supervision that will assure favorable working conditions, adequate time, and the necessary cooperation of the rig personnel.

3. **Welding.** The welding should be done by the shielded metal-arc or other approved process.

4. **Filler Metal.** Filler Metals. For root pass, it's recommended to use E6010, E6011 (AC), E6019 or equivalent electrodes. The E7018 or E7018-A1 electrodes may also be used for root pass operations but has the tendency to trap slag in tight grooves. The E6010, E6011 and E6019 offer good penetration and weld deposit ductility with relatively high intrinsic hydrogen content. Since the E7018 and E7018-A1 are less susceptible to hydrogen induced cracking, it is recommended for use as the filler metal for completion of the weld groove after the root pass is completed. The E6010, E6011 (AC), E6019, E7018 and E7018-A1 are classified under one of the following codes AWS A5.1 (latest edition): Mild Steel covered electrodes or the AWS A5.5 (latest edition): Low Alloy Steel Covered Arc-Welding Electrodes. The low hydrogen electrodes, E7018 and E7018-A1, should not be exposed to the atmosphere until ready for use. It's recommended that hydrogen electrodes remain in their sealed containers. When a job arises, the container shall be opened and all unused remaining electrodes to be stored in heat electrode storage ovens. Low hydrogen electrodes exposed to the atmosphere, except water, for more than two hours should be dried 1 to 2 hours at 600°F to 700 °F (316°C to 371 °C) just before use. It's recommended for any low hydrogen electrode containing water on the surface should be scrapped.

5. **Preparation of Base Metal.** The area to be welded should be dry and free of any paint, grease/oil and dirt. All rust and heat-treat surface scale shall be ground to bright metal before welding.

Recommended Procedure for Field Welding Pipe to Wellhead Parts for Pressure Seal

6. **Preheating.** Prior to any heating, the wellhead member shall be inspected for the presence of any o-rings or other polymeric seals. If any o-rings or seals are identified then preheating requires close monitoring as noted in paragraph 6a. Before applying preheat, the fluid should be bailed out of the casing to a point several inches (>6" or 150 mm) below the weld joint/location. Preheat both the casing and wellhead member for a minimum distance of three (3) inches on each side of the weld joint using a suitable preheating torch in accordance with the temperatures shown below in a and b. The preheat temperature should be checked by the use of heat sensitive crayons. Special attention must be given to preheating the thick sections of wellhead parts to be welded, to insure uniform heating and expansion with respect to the relatively thin casing.

   a. Wellhead members containing o-rings and other polymeric seals have tight limits on the preheat and interpass temperatures. Those temperatures must be controlled at 200°F to 325°F or 93 °C to 160°C and closely monitored to prevent damage to the o-ring or seals.
   b. Wellhead members not containing o-rings and other polymeric seals should be maintained at a preheat and interpass temperature of 400°F to 600°F or 200°C to 300°C.

7. **Welding Technique.** Use a 1/8 or 5/32-inch (3.2 or 4.0 mm) E6010 or E7018 electrode and step weld the first bead (root pass); that, weld approximately 2 to 4 inches (50 to 100 mm) and then move diametrically opposite this point and weld 2 to 4 inches (50 to 100 mm) halfway between the first two welds, move diametrically opposite this weld, and so on until the first pass is completed. This second pass should be made with a 5/32-inch (4.0 mm) low hydrogen electrode of the proper strength and may be continuous. The balance of the welding groove may then be filled with continuous passes without back stepping or lacing, using a 3/16-inch (4.8 mm) low hydrogen electrode. All beads should be stringer beads with good penetration. There should be no undercutting and weld shall be workmanlike in appearance.

   a. Test ports should be open when welding is performed to prevent pressure buildup within the test cavity.
   b. During welding the temperature of the base metal on either side of the weld should be maintained at 200 to 300°F (93 to 149°C).
   c. Care should be taken to insure that the welding cable is properly grounded to the casing, but ground wire should not be welded to the casing or the wellhead. Ground wire should be firmly clamped to the casing, the wellhead, or fixed in position between pipe slips. Bad contact may cause sparking, with resultant hard spots beneath which incipient cracks may develop. The welding cable should not be grounded to the steel derrick, nor to the rotary-table base.

8. **Cleaning.** All slag or flux remaining on any welding bead should be removed before laying the next bead. This also applies to the completed weld.

9. **Defects.** Any cracks or blow holes that appear on any bead should be removed to sound metal by chipping or grinding before depositing the next bead.

10. **Postheating.** Post-heating should be performed at the temperatures shown below and held at that temperature for no less than one hour followed by a slow cooling. The post-heating temperature should be in accordance with the following paragraphs.

    a. Wellhead members containing o-rings and other polymeric seals have tight limits on the post-heating temperatures. Those temperatures must be controlled at 250°F to 300°F or 120 °C to 150°C and closely monitored to prevent damage to the o-ring or seals.
    b. Wellhead members not containing o-rings and other polymeric seals should be post-heated at a temperature of 400°F to 600°F or 200°C to 300°C.

11. **Cooling.** ***Rapid cooling must be avoided.*** To assure slow cooling, welds should be protected from extreme weather conditions (cold, rain, high winds, etc.) by the use of suitable insulating material. (Specially designed insulating blankets are available at many welding supply stores.) Particular attention should be given to maintaining uniform cooling of the thick sections of the wellhead parts and the relatively thin casing, as the relatively thin casing will pull away from the head or hanger if allowed to cool more rapidly. The welds should cool in air to less than 200°F (93°C) (measured with a heat sensitive crayon) prior to permitting the mud to rise in the casing.

12. **Test the Weld.** After cooling, test the weld. The weld must be cool otherwise the test media will crack the weld. The test pressure should be no more than 80% of the casing collapse pressure.

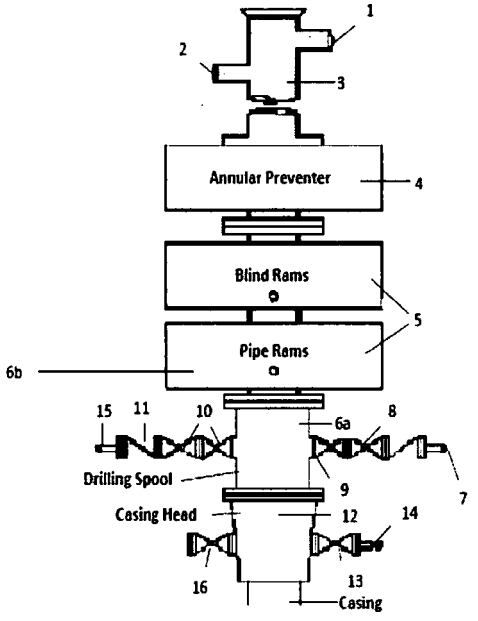
Mack Energy Corporation
Minimum Blowout Preventer Requirements
3000 psi Working Pressure
13 5/8 inch- 5 MWP
11 Inch - 5 MWP
EXHIBIT #10

Stack Requirements

NO.	Items	Min. I.D.	Min. Nominal
1	Flowline		2"
2	Fill up line		2"
3	Drilling nipple		
4	Annular preventer		
5	Two single or one dual hydraulically operated rams		
6a	Drilling spool with 2" min. kill line and 3" min choke line outlets		2" Choke
6b	2" min. kill line and 3" min. choke line outlets in ram. (Alternate to 6a above)		
7	Valve Gate Plug	3 1/8	
8	Gate valve-power operated	3 1/8	
9	Line to choke manifold		3"
10	Valve Gate Plug	2 1/16	
11	Check valve	2 1/16	
12	Casing head		
13	Valve Gate Plug	1 13/16	
14	Pressure gauge with needle valve		
15	Kill line to rig mud pump manifold		2"

OPTIONAL

16	Flanged Valve	1 13/16	



CONTRACTOR'S OPTION TO FURNISH:

1. All equipment and connections above bradenhead or casinghead. Working pressure of preventers to be 2000 psi minimum.
2. Automatic accumulator (80 gallons, minimum) capable of closing BOP in 30 seconds or less and, holding them closed against full rated working pressure.
3. BOP controls, to be located near drillers' position.
4. Kelly equipped with Kelly cock.
5. Inside blowout preventer or its equivalent on derrick floor at all times with proper threads to fit pipe being used.
6. Kelly saver-sub equipped with rubber casing protector at all times.
7. Plug type blowout preventer tester.
8. Extra set pipe rams to fit drill pipe in use on location at all times.
9. Type RX ring gaskets in place of Type R.

MEC TO FURNISH:

1. Bradenhead or casing head and side valves.
2. Wear bushing. If required.

10.

ME

GENERAL NOTES:

1. Deviations from this drawing may be made only with the express permission of MEC's Drilling Manager.
2. All connections, valves, fittings, piping, etc., subject to well or pump pressure must be flanged (suitable clamp connections acceptable) and have minimum working pressure equal to rated working pressure of preventers up through choke valves must be full opening and suitable for high pressure mud service.
3. Controls to be of standard design and each marked, showing opening and closing position
4. Chokes will be positioned so as not to hamper or delay changing of choke beans. Replaceable parts for adjustable choke, or bean sizes, retainers, and choke wrenches to be conveniently located for immediate use.
5. All valves to be equipped with hand-wheels or handles ready for immediate use.
6. Choke lines must be suitably anchored.
7. Handwheels and extensions to be connected and ready for use.
8. Valves adjacent to drilling spool to be kept open. Use outside valves except for emergency.
9. All seamless steel control piping (2000 psi working pressure) to have flexible joints to avoid stress. Hoses will be permitted.
10. Casinghead connections shall not be used except in case of emergency.
11. Does not use kill line for routine fill up operations.

As shown in Figure 2, the wellhead holds the BOP equipment in position for well control during drilling operation. The wellhead (both A and B Sections) provide a vital link between the BOP and the casing strings required to drill and produce the well. The wellhead assembly is very important and provides several purposes such as:

- To support the weight of the casing string;
- To provide a pressure seal between the casing strings and the environment;
- To provide an outlet for any built up pressure to be bleed off.

Casing Head

The casing head is the lowermost section of the wellhead and may be attached by either a threaded or slip-on and weld connection to fit the casing. Threaded connections are simple to install and easy to remove, however it requires the casing to be run and set with the threaded connection precisely at the desired elevation. Since positioning the connection at the desired elevation is often a problem, a slip-on and weld connection (Figure 3) is commonly used. This requires welding services to complete the installation. When installing the casing head, great care needs to be taken to ensure the casing head is level and aligned with the rotary table. Additionally, the derrick should be level in order to prevent damage to the Kelly and the BOP/casing head system during subsequent drilling operations which could cause damage to the seal and support areas.

After installation, the casing head/casing connection needs to be hydrostatically tested based off of the equipment's rated pressure of the pipe and flanged fittings. The casing head usually provides one or more side openings that provides access to each casing annulus and can be used for bleeding off pressure or pumping into the well. Caution should be taken when pumping mud continuously through these outlets as it may erode the wellhead, weakening the system. Pressure should be monitored and checked periodically. Casing head side outlets may be attached by thread, studded, clamp hub, and flanged connections. Casing heads with threaded outlets are acceptable for services up to and including 5,000 PSI working pressure provided that the casing head working pressure is rated the same. Some companies require flanged or studded connections for all 5,000 PSI and higher working pressure systems.

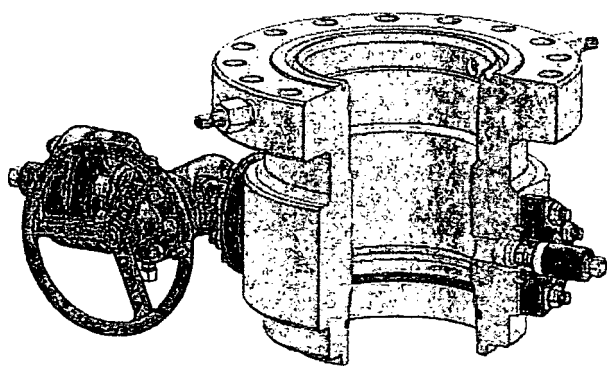


Figure 3 - Slip-On Weld (SOW) Casing Head

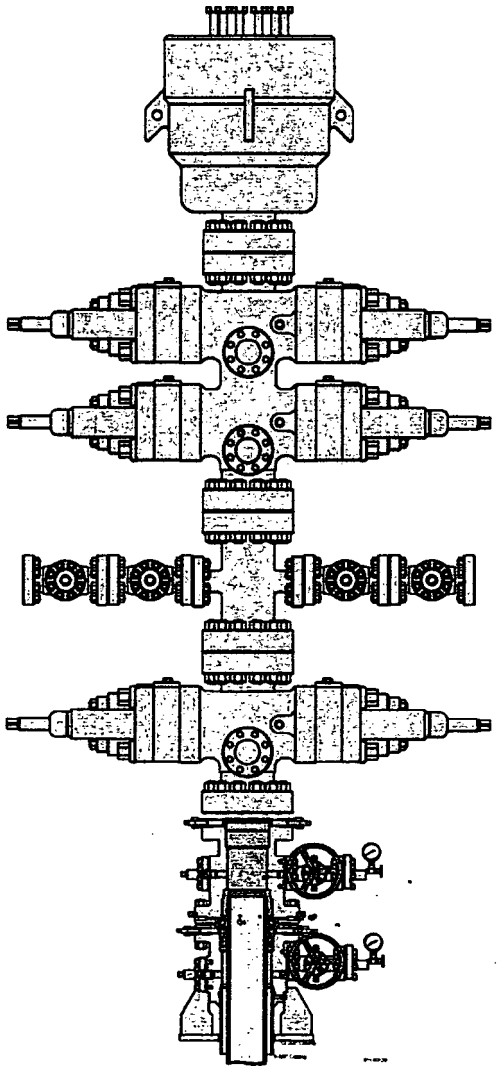


Figure 2 - BOP Stack Made Up to Wellhead

In sizing casing heads, the top flange must be sized to permit drilling the desired hole size and subsequent running and hanging of the casing strings. Usually the flange opening is sized to equal or exceeding the casing inside diameter of the casing string that is to be installed.

Adapter spools or flanges to connect BOP's of different sizes or pressure ratings to the casing head are not

CERTIFICATE No : 140324-01 page : 59 of 60

CONTACT(P/O) No. : 73998

ISSUED DATE : 2014-03-21

COMMODITY : E.R.W STEEL PIPE

SPECIFICATION : API 5CT J55
API 5CT 2011

INSPECTION CERTIFICATE

EN10204 TYPE 3.1 B-1991

CUSTOMER : ATLAS TUBULAR,LP

NEXTEEL CO.,LTD. EXTEEL CO., LTD.
HEAD OFFICE 767-1, Daegak-Ri, Daesong-Myun, Nam-Gu, Pohang City, KyungBu Korea.

QA Reviewed and Accepted
By:
Date

ITEM NO.	TYPE OF PIPE END	NOMINAL SIZE	Dimension (O.D x Thick. x Length)	QUANTITY (PCS)	TOTAL WEIGHT (kg)	HEAT NO.	(Gauge Length: 2 INCH) YIELD STRENGTH psi (MPa)	TENSILE STRENGTH psi (MPa) B	TENSILE STRENGTH psi (MPa) W	EL (%)	CHEMICAL COMPOSITION(%) C	Si	Mn	P	S	Cr	Ni	Cu	Mo	V	Sol - Al	Ti	B	Nb	Ceq.	HYDRO-STATIC TEST T.P (PSI)	HYDRO-STATIC TEST RE SULT	IMPACT TEST A.ENERGY (J) (21)℃	IMPACT TEST SHEAR AREA	HARD-NESS TEST HRB HV	Corro-sion TEST HIC SSCC	REMARK
	①		② ③					④		⑤		-4	-3		-4		-2	-3	-2	-3				⑦	⑧	⑨					
1	BPE	13-3/8	13.375 x 0.330 x 45	44	41.332	S887489	67,100	92,500		31	H	2519	200	1392	135	20	2	2	21	1	1	42			100	1,600	G	132	132			
							67,300	92,800	93,300	31	P	2524	202	1397	146	25	Tr	Tr	22	Tr	Tr	44			107			130				
							67,700	92,900	93,400	32	P	2520	202	1405	145	20	Tr	Tr	22	Tr	Tr	43			108			134				
2	BPE	13-3/8	13.375 x 0.330 x 40	1	835	132A08685	61,800	83,400		36	H	1900	160	900	110	18	32	1	20	Tr	2	39			130	1,600	G	132	132			
							62,400	84,100	84,700	36	P	1904	161	900	114	21	33	Tr	20	Tr	Tr	39			140			130				
							62,200	84,100	84,700	37	P	1902	161	910	118	18	32	Tr	22	Tr	Tr	39			135			135				
3	BPE	13-3/8	13.375 x 0.330 x 39	1	814	S887489	67,100	92,500		31	H	2519	200	1392	135	20	2	2	21	1	1	42			100	1,600	G	132	132			
							67,300	92,800	93,300	31	P	2524	202	1397	146	25	Tr	Tr	22	Tr	Tr	44			107			130				
							67,700	92,900	93,400	32	P	2520	202	1405	145	20	Tr	Tr	22	Tr	Tr	43			108			134				
			** SUB TOTAL **	46	42.981																												

HEAT TREATMENT (WELD SEAM)	VISUAL & DIMENSION	FLATTENING, BEND, GUIDED BEND TEST	REVERSE FLATTENING TEST	WELD DUCTILITY TEST	FLARING TEST	RESIDUAL MAGNETISM TEST	CRUSH TEST	STRAIGHTNESS	DRIFT TEST	NONDESTRUCTIVE TEST(NDT) U.T SEAM	NONDESTRUCTIVE TEST(NDT) U.T FULL BODY	NONDESTRUCTIVE TEST(NDT) M.T
G	G	G						G	G	G		G

NOTE
① BPE: BLACK PLAIN END, BBE: BLACK BEVELLED END, BTE: BLACK THREADED END, BTC: BLACK THREADED & COUPLED, GPE: GALVANIZED PLAIN END,
② O.D: OUTSIDE DIAMETER Thick.: Wall Thickness (Unit : Inch)
③ Length (Unit : Feet)
④ B: BASE METAL, W: WELD SEAM
⑤ H: HEAT(LADLE) ANALYSIS, P: PRODUCT ANALYSIS
⑥ Chemical Composition Unit:-4: × 1/10000, -3: × 1/1000, -2: × 1/100(The test value less than each unit is regarded as Tr)
⑦ Carbon Equivalent: C+Mn/6+(Ni+Cu)/15+(Cr+Mo+V)/5
⑧ T.P:TEST PRESSURE
⑨ G : Good
⑩ NDT:NONDESTRUCTIVE TEST, E.T:EDDYCURRENT TEST, U.T:ULTRASONIC TEST, M.T:MAGNETIC PARTICLE TEST(Special End Area Test)
※ G : Good
※ Tr: Trace element
• Tensile Test(Strip Type Specimen:Width)
: ≤ 3-1/2"→19mm, 4"~7-5/8"→25mm, 8-5/8 ≤→38mm
: Specimen Orientation : L90
• Reference Indicator for NDE : N10 3.2mm(0.125") or N10
• Min.temperature for Heat Treatment : Min. 850℃

SIGNATURE

WE HEREBY CERTIFY THAT THE PRODUCTS HERE IN HAVE BEEN MADE AND TESTED IN ACCORDANCE WITH THE ABOVE SPECIFICATION AND ALSO WITH THE REQUIREMENTS CALLED FOR THE ORDER.

SURVEYOR TO :

SIGNATURE

MANAGER OF QUALITY ASSURANCE TEAM

CERTIFICATE No. : 140324-01 page : 58 of 60

CONTACT(P/O) No. : 73998

ISSUED DATE : 2014-03-21

COMMODITY : E.R.W. STEEL PIPE

SPECIFICATION : API 5CT J55
API 5CT 2011

INSPECTION CERTIFICATE

EN10204 TYPE 3.1 B-1991

CUSTOMER : ATLAS TUBULAR,LP

NEXTEEL CO.,LTD. EXTEEL CO., LTD.
HEAD OFFICE 767-1, Daegak-Ri, Daesong-Myun, Nam-Gu, Pohang City, KyungBu Korea.

QA Reviewed and Approved
By:
Date:

ITEM NO.	TYPE OF PIPE END	NOMINAL SIZE	Dimension (O.D x Thick. x Length)	QUANTITY (PCS)	TOTAL WEIGHT (kg)	HEAT NO.	(Gauge Length: 2 INCH) YIELD STRENGTH psi (MPa)	TENSILE STRENGTH psi (MPa) B	TENSILE STRENGTH psi (MPa) W	EL (%)	CHEMICAL COMPOSITION(%) C	Si	Mn	P	S	Cr	Ni	Cu	Mo	V	Sol-Al	Ti	B	Nb	Ceq.	HYDRO-STATIC TEST T.P (PSI)	HYDRO-STATIC TEST RE SULT	IMPACT TEST A.ENERGY (J) (21)℃	IMPACT TEST SHEAR AREA (J)	HARDNESS TEST HRB HV	Corrosion TEST HIC SSCC	REMARK
	①		② ③					④		⑤	-4	-3	-4	-2	-3	-2	-3							⑦	⑧	⑨					
1	BPE	13-3/8	13.375 x 0.330 x 45	20	18,787	S887476	68,400	91,200		32	H	2403	196	1386	118	22	2	1	18	Tr	3	31			90	1,600	G	131	133			
							66,900	91,500	92,200	32	P	2405	196	1391	119	26	1	Tr	19	Tr	1	32			98			136				
							66,700	91,300	92,000	32	P	2405	198	1390	123	25	1	Tr	18	Tr	1	33			96			131				
				70	65,755	S887480	68,300	92,500		32	H	2486	204	1372	33	21	2	1	10	Tr	3	29			90	1,600	G	135	131			
							69,000	93,200	93,800	32	P	2488	205	1379	50	26	Tr	Tr	11	Tr	Tr	29			100			129				
							68,600	93,200	93,600	32	P	2487	204	1380	42	21	Tr	Tr	12	Tr	Tr	29			91			129				
				63	59,179	S887484	68,000	92,100		32	H	2437	200	1382	129	15	2	1	13	1	1	49			90	1,600	G	131	130			
							68,400	92,100	92,700	33	P	2437	200	1389	139	16	Tr	Tr	14	Tr	Tr	50			95			133				
							68,500	92,800	93,300	32	P	2440	200	1386	135	15	Tr	Tr	13	Tr	Tr	49			97			127				
			** SUB TOTAL **	153	143,721																												

HEAT TREATMENT (WELD SEAM)	VISUAL & DIMENSION	FLATTENING, BEND, GUIDED BEND TEST	REVERSE FLATTENING TEST	WELD DUCTILITY TEST	FLARING TEST	RESIDUAL MAGNETISM TEST	CRUSH TEST	STRAIGHTNESS	DRIFT TEST	NONDESTRUCTIVE TEST(NDT) U.T SEAM	NONDESTRUCTIVE TEST(NDT) U.T FULL BODY	NONDESTRUCTIVE TEST(NDT) M.T
G	G	G						G	G	G		G

NOTE

① BPE: BLACK PLAIN END,
BBE: BLACK BEVELLED END,
BTE: BLACK THREADED END,
BTC: BLACK THREADED & COUPLED,
GPE: GALVANIZED PLAIN END,
② O.D: OUTSIDE DIAMETER
Thick.: Wall Thickness
(Unit : Inch)

③ Length (Unit : Feet)
④ B: BASE METAL, W: WELD SEAM
⑤ H: HEAT(LADLE) ANALYSIS, P: PRODUCT ANALYSIS
⑥ Chemical Composition Unit:-4: × 1/10000,-3: × 1/1000,-2: × 1/100(The test value less than each unit is regarded as Tr)
⑦ Carbon Equivalent: C+Mn/6+(Ni+Cu)/15+(Cr+Mo+V)/5
⑧ T.P:TEST PRESSURE
⑨ G : Good
⑩ NDT:NONDESTRUCTIVE TEST, E.T:EDDYCURRENT TEST, U.T:ULTRASONIC TEST, M.T:MAGNETIC PARTICLE TEST(Special End Area Test)

※ G : Good
※ Tr: Trace element

• Tensile Test(Strip Type Specimen:Width)
: ≤ 3-1/2"→19mm, 4"-7-5/8"→25mm, 8-5/8 ≤→38mm
: Specimen Orientation : L90
• Reference Indicator for NDE : N10 3.2mm(0.125") or N10
• Min.temperature for Heat Treatment : Min. 650℃

SIGNATURE

WE HEREBY CERTIFY THAT THE PRODUCTS HERE IN HAVE BEEN MADE AND TESTED IN ACCORDANCE WITH THE ABOVE SPECIFICATION AND ALSO WITH THE REQUIREMENTS CALLED FOR THE ORDER.

SURVEYOR TO :

SIGNATURE

MANAGER OF QUALITY ASSURANCE TEAM

증명서번호
CERTIFICATE No. : 131122 - 01
계약번호
CONTECT(P/O) No. : 70997
발급일자
ISSUED DATE : 2013-11-22
제품명
COMMODITY : E.R.W. STEEL PIPE
제품규격
SPECIFICATION : API 5CT J55
API 5CT 2011

검 사 증 명 서
INSPECTION CERTIFICATE

EN10204 TYPE 3.1 B-1991

넥 스 틸 ㈜
NEXTEEL CO., LTD.
NEXTEEL CO.,LTD.
본사 공장 : 경북 포항시 남구 대송면 대각리 767-1번지
HEAD OFFICE : 767-1, Daegak-Ri, Daesong-Myun, Nam-Gu, Pohang City, KyungBuk, Korea.

고객사
CUSTOMER : ATLAS TUBULAR,LP

ITEM NO.	관종 TYPE OF PIPE END	호칭경 NOMINAL SIZE	치수 Dimension 외경 x 두께 x 길이 (O.D x Thick. x Length)	수량 QUANTITY (PCS)	총중량 TOTAL WEIGHT (kg)	제강번호 HEAT NO.	인장시험 TENSILE TEST (Gauge Length: 2 INCH) 항복강도 YIELD STRENGTH psi (MPa)	인장강도 TENSILE STRENGTH psi (MPa) B	인장강도 TENSILE STRENGTH psi (MPa) W	연신율 EL (%)	화학성분 CHEMICAL COMPOSITION(%) ⑤	C -4	Si -3	Mn -4	P -4	S -4	Cr -2	Ni -3	Cu -3	Mo -2	V -3	Sol-Al -4	Ti	B	Nb	Ceq. ⑦	수압시험 HYDRO-STATIC TEST T.P (PSI) ⑧	RE SULT ⑨	충격시험 IMPACT TEST A.ENERGY (J) (21)℃	SHEAR AREA (%)	경도시험 HARDNESS TEST HRB	HV	부식시험 Corrosion TEST HIC	SSCC	비고 REMARK
①			② ③					④																												
1	BPE	10-3/4	10.750 x 0.400 x 45	20	18,069	SP21600	68,000	94,800		32	H	2544	177	1403	145	18	2	2	18	Tr	Tr	26			90		2,500	G	135							
							68,900	95,400	95,500	33	P	2541	175	1400	143	15	Tr	Tr	16	Tr	Tr	25			90											
							68,500	95,100	95,600	33	P	2541	174	1399	143	16	Tr	Tr	15	Tr	Tr	25			90											
				45	40,654	SP57855	70,000	97,700		31	H	2580	177	1375	141	23	2	1	15	Tr	1	20			100		2,500	G	136							
							70,700	98,300	98,400	32	P	2578	173	1372	138	20	1	Tr	13	Tr	Tr	20			100											
							70,300	98,000	98,500	32	P	2577	174	1371	137	22	Tr	Tr	12	Tr	Tr	19			90											
2	BPE	13-3/8	13.375 x 0.330 x 38	105	83,289	SB87489	67,100	92,500		31	H	2519	200	1392	135	20	2	2	21	1	1	42			100		1,600	G	135							
							67,600	93,000	93,200	31	P	2517	196	1389	132	17	Tr	1	19	Tr	Tr	40			90											
							67,800	93,100	93,300	32	P	2516	198	1390	133	17	1	Tr	18	Tr	Tr	41			90											
			** SUB TOTAL **	170	142,012																															

열처리 HEAT TREATMENT (WELD SEAM)	외관.치수검사 VISUAL & DIMENSION	편평.굽힘시험 FLATTENING. BEND. GUIDED BEND TEST	전개시험 REVERSE FLATTENING TEST	용접부연성시험 WELD DUCTILITY TEST	압확시험 FLARING TEST	잔류자성시험 RESIDUAL MAGNETISM TEST	충압시험 CRUSH TEST	진직도 STRAIGHTNESS	관통시험 DRIFT TEST	비파괴검사 ⑩ NONDESTRUCTIVE TEST(NDT) U.T SEAM	U.T FULL BODY	M.T
G	G	G						G	G	G	G	G

NOTE

① BPE: BLACK PLAIN END.
BBE: BLACK BEVELLED END.
BTE: BLACK THREADED END.
BTC: BLACK THREADED & COUPLED.
GPE: GALVANIZED PLAIN END.
GTE: GAVANIZED THREADED END.
GTC: GALVANIZED THREAD & COUPLED

② O.D: OUTSIDE DIAMETER, Thick.: Wall Thickness
Unit (M: mm, I: Inch)
③ Unit : (M: Meter, F: Feet, I: Inch)
④ B: BASE METAL, W: WELD METAL
⑤ H: HEAT(LADLE) ANALYSIS P: PRODUCT ANALYSIS
⑥ Chemical Composition Unit: -4:×1/10000, -3:×1/1000, -2:×1/100
⑦ Carbon Equivalent : C+Mn/6+(Ni+Cu)/15+(Cr+Mo+V)/5

⑧ T.P : TEST PRESSURE ⑨ G: Good
⑩ NDT: E.T: EDDYCURRENT TEST
U.T: ULTRASONIC TEST
M.T: MAGNETIC PARTICLE TEST(Special End Area Test)
• Tr: It is within the standard range and include trace element

• Tensile Test(Strip Type Specimen:Width)
: ≤ 3-1/2" -> 19mm, 4" ~ 7-5/8" -> 25mm
8-5/8 ≤ -> 38mm
: < 8-5/8" Pipe Body : L90
8-5/8"≤ Pipe Body : T180, Seam Weld : W
• Reference Indicator for NDE : N10 3.2mm(0.125") or N10
• Min.temperature for Heat Treatment : Min. 950℃

SIGNATURE

SURVEYOR TO :

본 제품은 관련 규격이 정한 시험 및 검사에 합격하였음을 증명합니다.
WE HEREBY CERTIFY THAT THE PRODUCTS HERE IN HAVE BEEN MADE AND TESTED IN ACCORDANCE WITH THE ABOVE SPECIFICATION AND ALSO WITH THE REQUIREMENTS CALLED FOR THE ORDER.

SIGNATUR

MANAGER OF QUALITY ASSURANCE TEAM

ATLAS TUBULAR, LP

PO BOX 431
ROBSTOWN, TX 78380

Phone - 361-387-7505 Fax - 361-387-4613

INVOICE # : 1002213
Invoice Date : 12/19/2014
Page Number : 1 of 1

INVOICE

SOLD TO:

BUFFALO OILFIELD SUPPLY
201 MAIN STREET, SUITE 1680
FT. WORTH, TEXAS 76102

Customer PO #	: PO-015680		Terms	: 1%-10-30	
Order Date	: 12/08/2014	Ship Date : 12/12/2014	F.O.B.	: 006 - LOCATION	
Shipped Via	: SEE BELOW		Sales Order #	: 300253	
Well Name	: STOCK		Sold By	: RG	Phone: 432-897-0050

ITEM	QUANTITY	DESCRIPTION	$ RATE	$ TOTAL
1	5,906.65 FT	13-3/8" 48.00# J-55 STC R3 ERW NEW API CASING (NEXTEEL) 130 JTS	26.44	156,171.83

Discount of $ 1,561.72 Available If Paid By 12/29/2014.

Accounts are considered past due after 30 days at which time 1.5% per month rate of interest is assessed.

NON-TAXABLE, TX 0.0000 % TAX $: 0.00

INVOICE TOTAL $: 156,171.83

Washita Valley Enterprises, Inc.

BILL OF LADING

P.O. Box 94160 • Oklahoma City, OK 73143-4160 • Phone (405) 670-5338 • DOT #259583 • I.C.C. #164156 • O.C.C. #52259

From	ATLAS TUBULAR/LINN ENERGY	Date	12/15/2014 BOL # 160215 06
P/U Loc	WVEI 250 YARD	Ordered By	YVETTE RASCO
City/State	10151 COUNTY ROAD 1060 HYDRO OK	PO/RQ #	9/4/94
Lease/Rig	ARESTIA NM	Rel# / N#	300253
		Ref #	
Consignee	BUFFALO OILFIELD	Ordered by WBS#:	YVETTE RASCO
Lease/Rig	ARESTIA NM	PO/RQ #	
City/State	ARESTIA NM	Rel# / AFE	300253
		Ref #	
Delivery Date	12/11/2014 Time 3:00	WBS#:	
Truck/Trl	303 0007 Carrier TRICOAST	Est Cost $	12-14-2628

Delivery Instructions
ARESTIA, NEW MEXICO. BUFFALO OILFIELD.

Joints	Footage	Description		Rack #
20	909.05	13 3/8"48# J-55 ST&C ERW R-3 CSG	NEXTEEL	J-09 End:

59 06.65
130 JTS

Summary: Trucks Used: 6 Total Joints Delivered: 130 (5,906.65 Feet)

88	3,996.10	13 3/8"48#	J-55 ST&C ERW R-3 CSG	NEXTEEL	N
42	1,910.55	13 3/8"48#	J-55 ST&C ERW R-3 CSG	NEXTEEL	J

Received by: Robert Salais | Date

700-Outbound	283,519 @ .30 thru = 850.57	775-Forklift	Hours Rate $
750-Inbound		725-Trucks #	# #
797-Call Out		LBS	
794-Overtime		Rates	
998-Misc		Totals	

See Reverse Side for Bill of Lading Disclaimer and Obligation Statement

Date:	12/12/2014	Size:	13.375
Customer:	ATLAS	Weight:	48
Customer PO:		Grade:	J-55
Rig & Lease:	ATLAS	Thread:	STC.
Ticket No.:	12-14-2628	Condition:	NEW
Forklift No.:	255	Mill:	NEXTEEL
Reference:	HEAT#SB87489	Type:	ERW
Rack No.:	J-09	Trailer No.:	Truck 6

Total Length: 909.05' Total Count: 20 Total Weight: 43,634.40#

#	Length	#	Length	#	Length	#	Length	#	Length
1	45.45								
2	45.50								
3	45.50								
4	45.45								
5	45.50								
6	45.50								
7	45.45								
8	45.50								
9	45.45								
10	45.45								
TOTAL	**454.75**								
11	45.45								
12	45.55								
13	45.55								
14	45.55								
15	45.55								
16	45.00								
17	45.55								
18	45.00								
19	45.50								
20	45.60								
TOTAL	**454.30**								

Washita Valley Enterprises, Inc.

BILL OF LADING

P.O. Box 94160 • Oklahoma City, OK 73143-4160 • Phone (405) 670-5338 • DOT #259583 • I.C.C. #164156 • O.C.C. #52259

From	ATLAS TUBULAR/LINN ENERGY	Date	12/15/2014 BOL # 160215 .05
P/U Loc	WVEI 250 YARD	Ordered By	YVETTE RASCO
City/State	10151 COUNTY ROAD 1060 HYDRO OK	PO/RQ #	91494
Lease/Rig	ARESTIA NM	Rel# / N#	300253
		Ref #	
Consignee	BUFFALO OILFIELD	Ordered by WBS#:	YVETTE RASCO
Lease/Rig	ARESTIA NM	PO/RQ #	
City/State	ARESTIA NM	Rel# / AFE	300253
		Ref #	
Delivery Date	12/11/2014 Time 3:00	WBS#:	
Truck/Trl	296 000T Carrier TRICOAST	Est Cost $	12-14-2628

Delivery Instructions
ARESTIA, NEW MEXICO. BUFFALO OILFIELD.

Joints	Footage	Description		Rack #
22	1001.05	13 3/8"48# J-55 ST&C ERW R-3 CSG	NEXTEEL	J-09 End:

Summary:

Received by: _____ Date _____

700-Outbound		775-Forklift	Hours	Rate $	
750-Inbound		725-Trucks #	#	#	
797-Call Out		LBS			
794-Overtime		Rates			
998-Misc		Totals			

See Reverse Side for Bill of Lading Disclaimer and Obligation Statement

Date:	12/12/2014	Size:	13.375
Customer:	ATLAS	Weight:	48
Customer PO:		Grade:	J-55
Rig & Lease:	ATLAS	Thread:	STC
Ticket No.:	12-14-2628	Condition:	NEW
Forklift No.:	255	Mill:	NEXTEEL
Reference:	HEAT#SB87489	Type:	ERW
Rack No.:	J-09	Trailer No.:	Truck 5

Total Length: 1,001.05 Total Count: 22 Total Weight: 48,050.40#

#	Length	#	Length	#	Length	#	Length	#	Length
1	45.00	21	45.50						
2	45.50	22	45.50						
3	45.50	**TOTAL**	**91.00**						
4	45.50								
5	45.50								
6	45.50								
7	45.50								
8	45.55								
9	45.55								
10	45.55								
TOTAL	**454.65**								
11	45.55								
12	45.50								
13	45.50								
14	45.45								
15	45.50								
16	45.45								
17	45.50								
18	45.70								
19	45.60								
20	45.65								
TOTAL	**455.40**								

Washita Valley Enterprises, Inc.

BILL OF LADING

P.O. Box 94160 • Oklahoma City, OK 73143-4160 • Phone (405) 670-5338 • DOT #259583 • I.C.C. #164156 • O.C.C. #52259

From	ATLAS TUBULAR/LINN ENERGY	Date 12/15/2014	BOL # 160215 04
P/U Loc	WVEI 250 YARD	Ordered By	YVETTE RASCO
City/State	10151 COUNTY ROAD 1060 HYDRO OK	PO/RQ #	91494
Lease/Rig	ARESTIA NM	Rel# / N#	300253
		Ref #	
Consignee	BUFFALO OILFIELD	Ordered by WBS#:	YVETTE RASCO
Lease/Rig	ARESTIA NM	PO/RQ #	
City/State	ARESTIA NM	Rel# / AFE	300253
		Ref #	
Delivery Date	12/11/2014 Time 3:00	WBS#:	
Truck/Trl	194 000T Carrier TRICOAST	Est Cost $	12-14-2628

Delivery Instructions
ARESTIA, NEW MEXICO. BUFFALO OILFIELD.

Joints	Footage	Description		Rack #
22	997.95	13 3/8"48# J-55 ST&C ERW R-3 CSG	NEXTEEL	N-10 End:

Summary:

Received by: Braidys Ortiz Date

700-Outbound		775-Forklift	Hours	Rate $	
750-Inbound		725-Trucks #	#	#	
797-Call Out		LBS			
794-Overtime		Rates			
998-Misc		Totals			

See Reverse Side for Bill of Lading Disclaimer and Obligation Statement

Date:	12/12/2014	Size:	13.375
Customer:	ATLAS	Weight:	48
Customer PO:		Grade:	J-55
Rig & Lease:	ATLAS	Thread:	SC
Ticket No.:	12-14-2628	Condition:	NEW
Forklift No.:	255	Mill:	NEXTEEL
Reference:	HEAT#SB87476	Type:	ERW
Rack No.:	N-10	Trailer No.:	Truck 3

Total Length: 997.95' Total Count: 22 Total Weight: 47,901.60#

#	Length	#	Length	#	Length	#	Length	#	Length
1	45.00	21	45.20						
2	45.15	22	45.70						
3	45.50	**TOTAL**	**90.90**						
4	45.60								
5	45.65								
6	45.00								
7	45.40								
8	45.40								
9	45.50								
10	45.05								
TOTAL	**453.25**								
11	45.45								
12	45.45								
13	45.60								
14	45.60								
15	45.60								
16	45.55								
17	45.00								
18	45.50								
19	45.00								
20	45.05								
TOTAL	**453.80**								

Washita Valley Enterprises, Inc.

BILL OF LADING

P.O. Box 94160 • Oklahoma City, OK 73143-4160 • Phone (405) 670-5338 • DOT #259583 • I.C.C. #164156 • O.C.C. #52259

From	ATLAS TUBULAR/LINN ENERGY	Date	12/15/2014 BOL # 160215 03
P/U Loc	WVEI 250 YARD	Ordered By	YVETTE RASCO
City/State	10151 COUNTY ROAD 1060 HYDRO OK	PO/RQ #	9/494
Lease/Rig	ARESTIA NM	Rel# / N#	300253
		Ref #	

Consignee	BUFFALO OILFIELD	Ordered by WBS#:	YVETTE RASCO
Lease/Rig	ARESTIA NM	PO/RQ #	
City/State	ARESTIA NM	Rel# / AFE	300253
		Ref #	
Delivery Date	12/11/2014 Time 3:00	WBS#:	
Truck/Trl	294 000T Carrier TRICOAST	Est Cost $	12-14-2628

Delivery Instructions
ARESTIA, NEW MEXICO. BUFFALO OILFIELD.

Joints	Footage	Description		Rack #
22	1001.80	13 3/8"48# J-55 ST&C ERW R-3 CSG	NEXTEEL	N-10
				End:

Summary:

Received by: Jose R. Gonzalez Date 12/15/14

700-Outbound		775-Forklift	Hours	Rate $	
750-Inbound		725-Trucks #	#	#	
797-Call Out		LBS			
794-Overtime		Rates			
998-Misc		Totals			

See Reverse Side for Bill of Lading Disclaimer and Obligation Statement

Date:	12/12/2014	Size:	13.375
Customer:	ATLAS	Weight:	48
Customer PO:		Grade:	J-55
Rig & Lease:	ATLAS	Thread:	SC
Ticket No.:	12-14-2628	Condition:	NEW
Forklift No.:	255	Mill:	NEXTEEL
Reference:	HEAT#SB87476	Type:	ERW
Rack No.:	N-10	Trailer No.:	Truck 4

Total Length: 1,001.80' Total Count: 22 Total Weight: 48,086.40#

#	Length	#	Length	#	Length	#	Length	#	Length
1	45.55	21	45.30						
2	45.60	22	45.70						
3	45.60	**TOTAL**	**91.00**						
4	45.55								
5	45.05								
6	45.10								
7	45.60								
8	45.50								
9	45.60								
10	45.50								
TOTAL	**454.65**								
11	45.55								
12	45.50								
13	45.70								
14	45.65								
15	45.65								
16	45.60								
17	45.65								
18	45.65								
19	45.70								
20	45.50								
TOTAL	**456.15**								

Washita Valley Enterprises, Inc.

BILL OF LADING

P.O. Box 94160 • Oklahoma City, OK 73143-4160 • Phone (405)-670-5338 • DOT #259583 • I.C.C. #164156 • O.C.C. #52259

From	ATLAS TUBULAR/LINN ENERGY	Date	12/12/2014 BOL # 160215 02
P/U Loc	WVEI 250 YARD	Ordered By	YVETTE RASCO
City/State	10151 COUNTY ROAD 1060 HYDRO OK	PO/RQ #	91494
Lease/Rig	ARESTIA NM	Rel# / N#	300253
		Ref #	
Consignee	BUFFALO OILFIELD	Ordered by WBS#:	YVETTE RASCO
Lease/Rig	ARESTIA NM	PO/RQ #	
City/State	ARESTIA NM	Rel# / AFE	300253
		Ref #	
Delivery Date	12/11/2014 Time 3:00	WBS#:	
Truck/Trl	318 0007 Carrier TRICOAST	Est Cost $	12-14-2628

Delivery Instructions
ARESTIA, NEW MEXICO. BUFFALO OILFIELD.

Joints	Footage	Description		Rack #
22	996.65	13 3/8"48# J-55 ST&C ERW R-3 CSG	NEXTEEL	N-10
				End:

Summary:

Received by: [signature] Date 12-12-14

700-Outbound		775-Forklift	Hours	Rate $	
750-Inbound		725-Trucks #	#	#	
797-Call Out		LBS			
794-Overtime		Rates			
998-Misc		Totals			

See Reverse Side for Bill of Lading Disclaimer and Obligation Statement

Date:	12/12/2014	Size:	13.375
Customer:	ATLAS	Weight:	48
Customer PO:		Grade:	J-55
Rig & Lease:	ATLAS	Thread:	SC
Ticket No.:	12-14-2628	Condition:	NEW
Forklift No.:	255	Mill:	NEXTEEL
Reference:	HEAT#SB87476	Type:	ERW
Rack No.:	N-10	Trailer No.:	

Total Length: 996.65' Total Count: 22 Total Weight: 47,839.20#

#	Length	#	Length	#	Length	#	Length	#	Length
1	45.40	21	45.20						
2	45.65	22	45.00						
3	45.55	**TOTAL**	**90.20**						
4	45.55								
5	45.45								
6	45.60								
7	45.45								
8	45.45								
9	45.55								
10	45.40								
TOTAL	**455.05**								
11	45.40								
12	45.45								
13	45.00								
14	45.00								
15	45.50								
16	45.00								
17	45.00								
18	45.00								
19	45.05								
20	45.00								
TOTAL	**451.40**								

Washita Valley Enterprises, Inc.

BILL OF LADING

P.O. Box 94160 • Oklahoma City, OK 73143-4160 • Phone (405) 670-5338 • DOT #259583 • I.C.C. #164156 • O.C.C. #52259

From	ATLAS TUBULAR/LINN ENERGY	Date	12/12/2014 BOL # 160215 01
P/U Loc	WVEI 250 YARD	Ordered By	YVETTE RASCO
City/State	10151 COUNTY ROAD 1060 HYDRO OK	PO/RQ #	91494
Lease/Rig	ARESTIA NM	Rel# / N#	300253
		Ref #	
Consignee	BUFFALO OILFIELD	Ordered by WBS#:	YVETTE RASCO
Lease/Rig	ARESTIA NM	PO/RQ #	
City/State	ARESTIA NM	Rel# / AFE	300253
		Ref #	
Delivery Date	12/11/2014 Time 3:00	WBS#:	12-14-2628
Truck/Trl	175 000T Carrier TRICOAST	Est Cost $	

Delivery Instructions
ARESTIA, NEW MEXICO. BUFFALO OILFIELD.

Joints	Footage	Description		Rack #
22	999.70	13 3/8"48# J-55 ST&C ERW R-3 CSG	NEXTEEL	N-10 End:

Summary:

Received by: Date

700-Outbound		775-Forklift	Hours	Rate $	
750-Inbound		725-Trucks #	#	#	
797-Call Out		LBS			
794-Overtime		Rates			
998-Misc		Totals			

See Reverse Side for Bill of Lading Disclaimer and Obligation Statement

Washita Valley Enterprises, Inc.

TOTAL LENGTH: 1,454.75' TOTAL COUNT: 32 TOTAL WEIGHT: 69,828.00#

Date:	12/12/2014	Size:	13.375
Customer:	ATLAS	Weight:	48
Customer PO:		Grade:	J-55
Rig & Lease:	ATLAS	Thread:	SC
Ticket No.:	12-14-2628	Condition:	NEW
Forklift No.:	255	Mill:	NEXTEEL
Reference:	HEAT#SB87476	Type:	ERW
Rack No.:	N-10	Trailer No.:	TRI-COAST 175

Total Length: 999.70' Total Count: 22 Total Weight: 47,985.60#

#	Length	#	Length	#	Length	#	Length	#	Length
1	45.00	21	45.65						
2	45.55	22	45.65						
3	45.45	**TOTAL**	**91.30**						
4	45.50								
5	45.50								
6	45.45								
7	45.30								
8	45.45								
9	45.50								
10	45.45								
TOTAL	**454.15**								
11	45.40								
12	45.05								
13	45.50								
14	45.45								
15	45.60								
16	45.60								
17	45.45								
18	45.35								
19	45.25								
20	45.60								
TOTAL	**454.25**								

Burnett Oil Co., Inc.
801 Cherry Street- Unit #9
Fort Worth, Texas
76102-6881
Phone: 817-332-5108 Fax: 817-332-2438

Collapse Pressure	Safety Factor	Min		Burst Pressure	Safety Factor	Min		Tension	Safety Factor	Min		
			13-3/8" 48# H-40									
			ST&C									
			770				1,730,000				322,000	
351	1.125	395		351	1.0	351		36,000	1.8	64,800		
			9-5/8" 36# J-55									
			LT&C									
			2,000				3,520				453,000	
1220	1.125	1,372		1,220	1.0	1,220		82,800	1.8	149,040		
			7" 26# L-80									
			LT&C									
			5,410				7,240				511,000	
								186,114	1.8	335,005		
			7" 23# L-80									
			LT&C									
			3,830				6,340				435,000	
								186,114	1.8	335,005		
			7" 26# J-55									
			LT&C									
			4,320				4,980				367,000	
								202,314	1.8	364,165		
			5-1/2" 17# L-80									
			LT&C									
			6,290				7,740				338,000	
-	1.125	-		-	1.0	-		153,714	1.8	276,685		

CERTIFICATE No : 140324-01 page : 59 of 60

CONTACT(P/O) No. : 73998

ISSUED DATE : 2014-03-21

COMMODITY : E.R.W STEEL PIPE

SPECIFICATION : API 5CT J55
API 5CT 2011

INSPECTION CERTIFICATE

EN10204 TYPE 3.1 B-1991

CUSTOMER : ATLAS TUBULAR,LP

NEXTEEL CO.,LTD. EXTEEL CO., LTD.
HEAD OFFICE 767-1, Daegak-Ri, Daesong-Myun, Nam-Gu, Pohang City, KyungBu Korea.

QA Reviewed and Approved
By:
Date:

ITEM NO.	TYPE OF PIPE END	NOMINAL SIZE	Dimension (O.D x Thick. x Length)	QUANTITY (PCS)	TOTAL WEIGHT (kg)	HEAT NO.	(Gauge Length: 2 INCH) YIELD STRENGTH psi (MPa)	TENSILE STRENGTH psi (MPa)		EL (%)	CHEMICAL COMPOSITION(%)															Ceq.	HYDRO-STATIC TEST		IMPACT TEST A.ENERGY (J)	IMPACT TEST SHEAR AREA	HARDNESS TEST	Corrosion TEST	REMARK
								B	W		C	Si	Mn	P	S	Cr	Ni	Cu	Mo	V	Sol-Al	Ti	B	Nb		T.P (PSI)	RESULT	(21)℃		HRB HV	HIC SSCC	
	①		② ③					④		⑤	-4	-3		-4		-2	-3	-2		-3				⑦	⑧	⑨					
1	BPE	13-3/8	13.375 x 0.330 x 45'	44	41,332	SB87489	67,100	92,500		31	H	2519	200	1392	135	20	2	2	21	1	1	42		100	1,600	G	132	132			
							67,300	92,800	93,300	31	P	2524	202	1397	146	25	Tr	Tr	22	Tr	Tr	44		107			130				
							67,700	92,900	93,400	32	P	2520	202	1405	145	20	Tr	Tr	22	Tr	Tr	43		108			134				
2	BPE	13-3/8	13.375 x 0.330 x 40	1	835	132A08685	61,800	83,400		36	H	1900	160	900	110	18	32	1	20	Tr	2	39		130	1,600	G	132	132			
							62,400	84,100	84,700	36	P	1904	161	900	114	21	33	Tr	20	Tr	Tr	39		140			130				
							62,200	84,100	84,700	37	P	1902	161	910	118	18	32	Tr	22	Tr	Tr	39		135			135				
3	BPE	13-3/8	13.375 x 0.330 x 39	1	814	SB87489	67,100	92,500		31	H	2519	200	1392	135	20	2	2	21	1	1	42		100	1,600	G	132	132			
							67,300	92,800	93,300	31	P	2524	202	1397	146	25	Tr	Tr	22	Tr	Tr	44		107			130				
							67,700	92,900	93,400	32	P	2520	202	1405	145	20	Tr	Tr	22	Tr	Tr	43		108			134				
			•• SUB TOTAL ••	46	42,981																											

HEAT TREATMENT (WELD SEAM)	VISUAL & DIMENSION	FLATTENING, BEND, GUIDED BEND TEST	REVERSE FLATTENING TEST	WELD DUCTILITY TEST	FLARING TEST	RESIDUAL MAGNETISM TEST	CRUSH TEST	STRAIGHTNESS	DRIFT TEST	NONDESTRUCTIVE TEST(NDT) U.T SEAM	NONDESTRUCTIVE TEST(NDT) U.T FULL BODY	NONDESTRUCTIVE TEST(NDT) M.T
G	G	G						G	G	G		G

NOTE

① BPE: BLACK PLAIN END, BBE: BLACK BEVELLED END, BTE: BLACK THREADED END, BTC: BLACK THREADED & COUPLED, GPE: GALVANIZED PLAIN END,
② O.D: OUTSIDE DIAMETER Thick.: Wall Thickness (Unit : Inch)
③ Length (Unit : Feet)
④ B: BASE METAL, W: WELD SEAM
⑤ H: HEAT(LADLE) ANALYSIS, P: PRODUCT ANALYSIS
⑥ Chemical Composition Unit:-4: × 1/10000,-3: × 1/1000,-2: × 1/100(The test value less than each unit is regarded as Tr)
⑦ Carbon Equivalent: C+Mn/6+(Ni+Cu)/15+(Cr+Mo+V)/5
⑧ T.P:TEST PRESSURE
⑨ G : Good
⑩ NDT:NONDESTRUCTIVE TEST, E.T:EDDYCURRENT TEST, U.T:ULTRASONIC TEST, M.T:MAGNETIC PARTICLE TEST(Special End Area Test)
※ G : Good
※ Tr: Trace element

- Tensile Test(Strip Type Specimen:Width)
  : ≤ 3-1/2"→19mm, 4"~7-5/8"→25mm, 8-5/8 ≤→38mm
  : Specimen Orientation : L90
- Reference Indicator for NDE : N10 3.2mm(0.125") or N10
- Min.temperature for Heat Treatment : Min. 650℃

SIGNATURE

WE HEREBY CERTIFY THAT THE PRODUCTS HERE IN HAVE BEEN MADE AND TESTED IN ACCORDANCE WITH THE ABOVE SPECIFICATION AND ALSO WITH THE REQUIREMENTS CALLED FOR THE ORDER.

SURVEYOR TO :

SIGNATURE

MANAGER OF QUALITY ASSURANCE TEAM

CERTIFICATE No. : 140324-01 page : 58 of 60

CONTACT(P/O) No. : 73998

ISSUED DATE : 2014-03-21

COMMODITY : E.R.W. STEEL PIPE

SPECIFICATION : API 5CT J55
API 5CT 2011

INSPECTION CERTIFICATE

EN10204 TYPE 3.1 B-1991

CUSTOMER : ATLAS TUBULAR,LP

NEXTEEL CO.,LTD. EXTEEL CO., LTD.
HEAD OFFICE 767-1, Daegak-Ri, Daesong-Myun, Nam-Gu, Pohang City, KyungBu Korea.

QA Reviewed and Approved
By:
Date:

ITEM NO.	TYPE OF PIPE END	NOMINAL SIZE	Dimension (O.D x Thick. x Length)	QUANTITY (PCS)	TOTAL WEIGHT (kg)	HEAT NO.	(Gauge Length: 2 INCH) YIELD STRENGTH psi (MPa)	TENSILE STRENGTH psi (MPa) B	TENSILE STRENGTH psi (MPa) W	EL (%)	CHEMICAL COMPOSITION(%) C	Si	Mn	P	S	Cr	Ni	Cu	Mo	V	Sol-Al	Ti	B	Nb	Ceq.	HYDRO-STATIC TEST T.P (PSI)	HYDRO-STATIC TEST RESULT	IMPACT TEST A.ENERGY (J) (21)℃	IMPACT TEST SHEAR AREA (J) (21)℃	HARDNESS TEST HRB HV	Corrosion TEST HIC SSCC	REMARK
	①		② ③					④		⑤	-4	-3		-4		-2		-3	-2	-3				⑦	⑥	⑨						
1	BPE	13-3/8	13.375 x 0.330 x 45	20	18,787	S887476	66,400	81,200		32	H 2403	196	1385	118	22	2	1	18	Tr	3	31			90	1,600	G	131	133				
							66,900	91,500	92,200	32	P 2405	196	1391	119	26	1	Tr	19	Tr	1	32			98			136				
							66,700	91,300	92,000	32	P 2405	198	1390	123	25	1	Tr	18	Tr	1	33			96			131				
				70	65,755	S887480	68,300	92,500		32	H 2486	204	1372	33	21	2	1	10	Tr	3	29			90	1,600	G	135	131				
							69,000	93,200	93,800	32	P 2488	205	1379	50	26	Tr	Tr	11	Tr	Tr	29			100			129				
							68,600	93,200	93,600	32	P 2487	204	1380	42	21	Tr	Tr	12	Tr	Tr	29			91			129				
				63	59,179	S887484	68,000	92,100		32	H 2437	200	1382	129	15	2	1	13	1	1	49			90	1,600	G	131	130				
							68,400	92,100	92,700	33	P 2437	200	1389	139	16	Tr	Tr	14	Tr	Tr	50			95			133				
							68,500	92,800	93,300	32	P 2440	200	1388	135	15	Tr	Tr	13	Tr	Tr	49			97			127				
			•• SUB TOTAL ••	153	143,721																												

HEAT TREATMENT (WELD SEAM)	VISUAL & DIMENSION	FLATTENING, BEND, GUIDED BEND TEST	REVERSE FLATTENING TEST	WELD DUCTILITY TEST	FLARING TEST	RESIDUAL MAGNETISM TEST	CRUSH TEST	STRAIGHTNESS	DRIFT TEST	NONDESTRUCTIVE TEST(NDT) U.T SEAM	NONDESTRUCTIVE TEST(NDT) U.T FULL BODY	NONDESTRUCTIVE TEST(NDT) M.T
G	G	G						G	G	G		G

NOTE

① BPE: BLACK PLAIN END, BBE: BLACK BEVELLED END, BTE: BLACK THREADED END, BTC: BLACK THREADED & COUPLED, GPE: GALVANIZED PLAIN END,
② O.D: OUTSIDE DIAMETER, Thick.: Wall Thickness (Unit : Inch)
③ Length (Unit : Feet)
④ B: BASE METAL, W: WELD SEAM
⑤ H: HEAT(LADLE) ANALYSIS, P: PRODUCT ANALYSIS
⑥ Chemical Composition Unit: -4: × 1/10000, -3: × 1/1000, -2: × 1/100(The test value less than each unit is regarded as Tr)
⑦ Carbon Equivalent: C+Mn/6+(Ni+Cu)/15+(Cr+Mo+V)/5
⑧ T.P:TEST PRESSURE
⑨ G : Good
⑩ NDT:NONDESTRUCTIVE TEST, E.T:EDDYCURRENT TEST, U.T:ULTRASONIC TEST, M.T:MAGNETIC PARTICLE TEST(Special End Area Test)
* G : Good
* Tr: Trace element

* Tensile Test(Strip Type Specimen:Width)
: ≤ 3-1/2"→19mm, 4"-7-5/8"→25mm, 8-5/8 ≤→38mm
: Specimen Orientation : L90
* Reference Indicator for NDE : N10 3.2mm(0.125") or N10
* Min.temperature for Heat Treatment : Min. 650℃

SIGNATURE

WE HEREBY CERTIFY THAT THE PRODUCTS HERE IN HAVE BEEN MADE AND TESTED IN ACCORDANCE WITH THE ABOVE SPECIFICATION AND ALSO WITH THE REQUIREMENTS CALLED FOR THE ORDER.

SURVEYOR TO :

SIGNATURE

MANAGER OF QUALITY ASSURANCE TEAM

증명서번호
CERTIFICATE No. : 131122 - 01

계약번호
CONTECT(P/O) No. : 70997

발급일자
ISSUED DATE : 2013-11-22

제품명
COMMODITY : E.R.W. STEEL PIPE

제품규격
SPECIFICATION : API 5CT J55
API 5CT 2011

검 사 증 명 서
INSPECTION CERTIFICATE

EN10204 TYPE 3.1 B-1991

넥 스 틸 ㈜
NEXTEEL CO., LTD.
본사 공장 : 경북 포항시 남구 대송면 대각리 767-1번지
HEAD OFFICE : 767-1, Daegak-Ri, Daesong-Myun, Nam-Gu, Pohang City, KyungBuk, Korea.

고객사
CUSTOMER : ATLAS TUBULAR,LP

ITEM NO.	관종 TYPE OF PIPE END ①	호칭경 NOMINAL SIZE	치수 Dimension 외경 x 두께 x 길이 (O.D x Thick. x Length) ② ④	수량 QUANTITY (PCS)	총중량 TOTAL WEIGHT (kg)	제강번호 HEAT NO.	인장시험 TENSILE TEST (Gauge Length: 2 INCH) 항복강도 YIELD STRENGTH psi (MPa)	인장강도 TENSILE STRENGTH psi (MPa) B ④	인장강도 TENSILE STRENGTH psi (MPa) W ④	연신율 EL (%)	⑤	화학성분 CHEMICAL COMPOSITION(%) C -4	Si -3	Mn -4	P -4	S -2	Cr -3	Ni -2	Cu -3	Mo -2	V -3	Sol-Al -3	Ti -4	B	Nb	Ceq. ⑦	수압시험 HYDRO-STATIC TEST T.P (PSI) ⑧	RE SULT ⑨	충격시험 IMPACT TEST A.CN-ERGY (J) (21)℃	SHEAR AREA (%)	경도시험 HARD-NESS TEST HRB	HV	부식시험 Corro-sion TEST HIC	SSCC	비고 RE MARK
1	BPE	10-3/4	10.750 x 0.400 x 45	20	18,069	SP21600	68,000	94,800		32	H	2544	177	1403	145	18	2	2	18	Tr	Tr	26			90		2,500	G	135							
							68,900	95,400	95,500	33	P	2541	175	1400	143	15	Tr	Tr	16	Tr	Tr	25			90										
							68,500	95,100	95,600	33	P	2541	174	1399	143	16	Tr	Tr	15	Tr	Tr	25			90										
				45	40,654	SP57855	70,000	97,700		31	H	2580	177	1375	141	23	2	1	15	Tr	1	20			100		2,500	G	136							
							70,700	98,300	98,400	32	P	2578	173	1372	138	20	1	Tr	13	Tr	Tr	20			100										
							70,300	98,000	98,500	32	P	2577	174	1371	137	22	Tr	Tr	12	Tr	Tr	19			90										
2	BPE	13-3/8	13.375 x 0.330 x 38	105	83,289	SB87489	67,100	92,500		31	H	2519	200	1392	135	20	2	2	21	1	1	42			100		1,600	G	135							
							67,600	93,000	93,200	31	P	2517	198	1389	132	17	Tr	1	19	Tr	Tr	40			90										
							67,800	93,100	93,300	32	P	2516	198	1390	133	17	1	Tr	18	Tr	Tr	41			90										
			•• SUB TOTAL ••	170	142,012																															

열처리 HEAT TREATMENT (WELD SEAM)	외관,치수검사 VISUAL & DIMENSION	편평,굽힘시험 FLATTENING, BEND, GUIDED BEND TEST	전개시험 REVERSE FLATTENING TEST	용접부연성시험 WELD DUCTILITY TEST	압확시험 FLARING TEST	잔류자장시험 RESIDUAL MAGNETISM TEST	압입시험 CRUSH TEST	잔식도 STRAIGHTNESS	관통시험 DRIFT TEST	비파괴검사 ⑩ NONDESTRUCTIVE TEST(NDT) U.T SEAM	U.T FULL BODY	M.T
G	G	G						G	G	G	G	G

NOTE

① BPE: BLACK PLAIN END.
BBE: BLACK BEVELLED END.
BTE: BLACK THREADED END.
BTC: BLACK THREADED & COUPLED.
GPE: GALVANIZED PLAIN END.
GTE: GAVANIZED THREADED END.
GTC: GALVANIZED THREAD & COUPLED

② O.D: OUTSIDE DIAMETER, Thick.: Wall Thickness
Unit (M: mm, I: Inch)
③ Unit : (M: Meter, F: Feet, I: Inch)
④ B: BASE METAL. W: WELD METAL
⑤ H: HEAT(LADLE) ANALYSIS P: PRODUCT ANALYSIS
⑥ Chemical Composition Unit: -4:×1/10000, -3:×1/1000, -2:×1/100
⑦ Carbon Equivalent : C+Mn/6+(Ni+Cu)/15+(Cr+Mo+V)/5

⑧ T.P : TEST PRESSURE ⑨ G: Good
⑩ NDT: E.T: EDDYCURRENT TEST
U.T: ULTRASONIC TEST
M.T: MAGNETIC PARTICLE TEST(Special End Area Test)
• Tr: It is within the standard range and include trace element

• Tensile Test(Strip Type Specimen:Width)
: ≤ 3-1/2" -> 19mm, 4" ~ 7-5/8" -> 25mm
8-5/8 ≤ -> 38mm
: < 8-5/8" Pipe Body : L90
8-5/8" ≤ Pipe Body : T180, Seam Weld : W
• Reference Indicator for NDE : N10 3.2mm(0.125") or N10
• Min.temperature for Heat Treatment : Min. 950℃

SIGNATURE

SURVEYOR TO :

큰 제품은 관련 규격이 정한 시험 및 검사에 합격하였음을 증명합니다.
WE HEREBY CERTIFY THAT THE PRODUCTS HERE IN HAVE BEEN MADE AND TESTED IN ACCORDANCE WITH THE ABOVE SPECIFICATION AND ALSO WITH THE REQUIREMENTS CALLED FOR THE ORDER.

SIGNATUR

MANAGER OF QUALITY ASSURANCE TEAM

ATLAS TUBULAR, LP

PO BOX 431
ROBSTOWN, TX 78380

Phone - 361-387-7505 Fax - 361-387-4613

INVOICE # : 1002213
Invoice Date : 12/19/2014
Page Number : 1 of 1

INVOICE

SOLD TO:

BUFFALO OILFIELD SUPPLY
201 MAIN STREET, SUITE 1680
FT. WORTH, TEXAS 76102

Customer PO #	: PO-015680		Terms	: 1%-10-30	
Order Date	: 12/08/2014	Ship Date : 12/12/2014	F.O.B.	: 006 - LOCATION	
Shipped Via	: SEE BELOW		Sales Order #	: 300253	
Well Name	: STOCK		Sold By	: RG	Phone: 432-897-0050

ITEM	QUANTITY	DESCRIPTION	$ RATE	$ TOTAL
1	5,906.65 FT	13-3/8" 48.00# J-55 STC R3 ERW NEW API CASING (NEXTEEL) 130 JTS	26.44	156,171.83

Discount of $ 1,561.72 Available If Paid By 12/29/2014.

Accounts are considered past due after 30 days at which time 1.5% per month rate of interest is assessed.

NON-TAXABLE, TX 0.0000 % TAX $: 0.00

INVOICE TOTAL $: 156,171.83

Washita Valley Enterprises, Inc. BILL OF LADING

P.O. Box 94160 • Oklahoma City, OK 73143-4160 • Phone (405) 670-5338 • DOT #259583 • I.C.C. #164156 • O.C.C. #52259

From	ATLAS TUBULAR/LINN ENERGY	Date	12/15/2014 BOL # 160215 06
P/U Loc	WVEI 250 YARD	Ordered By	YVETTE RASCO
City/State	10151 COUNTY ROAD 1060 HYDRO OK	PO/RQ #	9/4/94
Lease/Rig	ARESTIA NM	Rel# / N#	300253
		Ref #	
Consignee	BUFFALO OILFIELD	Ordered by WBS#:	YVETTE RASCO
Lease/Rig	ARESTIA NM	PO/RQ #	
City/State	ARESTIA NM	Rel# / AFE	300253
		Ref #	
Delivery Date	12/11/2014 Time 3:00	WBS#:	
Truck/Trl	303 000T Carrier TRICOAST	Est Cost $	12-14-2628

Delivery Instructions
ARESTIA, NEW MEXICO. BUFFALO OILFIELD.

Joints	Footage	Description		Rack #
20	909.05 13 3/8"48#	J-55 ST&C ERW R-3 CSG	NEXTEEL	J-09 End:

5906.65
130 JTS

Summary: Trucks Used: 6 Total Joints Delivered: 130 (5,906.65 Feet)

88	3,996.10	13 3/8"48#	J-55 ST&C ERW R-3 CSG	NEXTEEL	N
42	1,910.55	13 3/8"48#	J-55 ST&C ERW R-3 CSG	NEXTEEL	J

Received by: Robert Garcia | Date

700-Outbound	283,519 @ .30 Hrs = 850.56	775-Forklift	Hours Rate $
750-Inbound		725-Trucks #	# #
797-Call Out		LBS	
794-Overtime		Rates	
998-Misc		Totals	

See Reverse Side for Bill of Lading Disclaimer and Obligation Statement

Date:	12/12/2014	Size:	13.375
Customer:	ATLAS	Weight:	48
Customer PO:		Grade:	J-55
Rig & Lease:	ATLAS	Thread:	STC.
Ticket No.:	12-14-2628	Condition:	NEW
Forklift No.:	255	Mill:	NEXTEEL
Reference:	HEAT#SB87489	Type:	ERW
Rack No.:	J-09	Trailer No.:	Truck 6

Total Length: 909.05' Total Count: 20 Total Weight: 43,634.40#

#	Length	#	Length	#	Length	#	Length	#	Length
1	45.45								
2	45.50								
3	45.50								
4	45.45								
5	45.50								
6	45.50								
7	45.45								
8	45.50								
9	45.45								
10	45.45								
TOTAL	**454.75**								
11	45.45								
12	45.55								
13	45.55								
14	45.55								
15	45.55								
16	45.00								
17	45.55								
18	45.00								
19	45.50								
20	45.60								
TOTAL	**454.30**								

Washita Valley Enterprises, Inc.

BILL OF LADING

P.O. Box 94160 • Oklahoma City, OK 73143-4160 • Phone (405) 670-5338 • DOT #259583 • I.C.C. #164156 • O.C.C. #52259

From	ATLAS TUBULAR/LINN ENERGY	Date	12/15/2014 BOL # 160215 05
P/U Loc	WVEI 250 YARD	Ordered By	YVETTE RASCO
City/State	10151 COUNTY ROAD 1060 HYDRO OK	PO/RQ #	91494
Lease/Rig	ARESTIA NM	Rel# / N#	300253
		Ref #	
Consignee	BUFFALO OILFIELD	Ordered by WBS#:	YVETTE RASCO
Lease/Rig	ARESTIA NM	PO/RQ #	
City/State	ARESTIA NM	Rel# / AFE	300253
		Ref #	
Delivery Date	12/11/2014 Time 3:00	WBS#:	12-14-2628
Truck/Trl	296 000T Carrier TRICOAST	Est Cost $	

Delivery Instructions
ARESTIA, NEW MEXICO. BUFFALO OILFIELD.

Joints	Footage	Description		Rack #
22	1001.05	13 3/8"48# J-55 ST&C ERW R-3 CSG	NEXTEEL	J-09
				End:

Summary:

Received by: _____ Date

700-Outbound		775-Forklift	Hours	Rate $	
750-Inbound		725-Trucks #	#	#	
797-Call Out		LBS			
794-Overtime		Rates			
998-Misc		Totals			

See Reverse Side for Bill of Lading Disclaimer and Obligation Statement

Date:	12/12/2014	Size:	13.375
Customer:	ATLAS	Weight:	48
Customer PO:		Grade:	J-55
Rig & Lease:	ATLAS	Thread:	STC
Ticket No.:	12-14-2628	Condition:	NEW
Forklift No.:	255	Mill:	NEXTEEL
Reference:	HEAT#SB87489	Type:	ERW
Rack No.:	J-09	Trailer No.:	Truck 5

Total Length: 1,001.05 Total Count: 22 Total Weight: 48,050.40#

#	Length	#	Length	#	Length	#	Length	#	Length
1	45.00	21	45.50						
2	45.50	22	45.50						
3	45.50	**TOTAL**	**91.00**						
4	45.50								
5	45.50								
6	45.50								
7	45.50								
8	45.55								
9	45.55								
10	45.55								
TOTAL	**454.65**								
11	45.55								
12	45.50								
13	45.50								
14	45.45								
15	45.50								
16	45.45								
17	45.50								
18	45.70								
19	45.60								
20	45.65								
TOTAL	**455.40**								

Washita Valley Enterprises, Inc.

BILL OF LADING

P.O. Box 94160 • Oklahoma City, OK 73143-4160 • Phone (405) 670-5338 • DOT #259583 • I.C.C. #164156 • O.C.C. #52259

From	ATLAS TUBULAR/LINN ENERGY	Date	12/15/2014 BOL # 160215 04
P/U Loc	WVEI 250 YARD	Ordered By	YVETTE RASCO
City/State	10151 COUNTY ROAD 1060 HYDRO OK	PO/RQ #	91494
Lease/Rig	ARESTIA NM	Rel# / N#	300253
		Ref #	
Consignee	BUFFALO OILFIELD	Ordered by WBS#:	YVETTE RASCO
Lease/Rig	ARESTIA NM	PO/RQ #	
City/State	ARESTIA NM	Rel# / AFE	300253
		Ref #	
Delivery Date	12/11/2014 Time 3:00	WBS#:	
Truck/Trl	194 0001 Carrier TRICOAST	Est Cost $	12-14-2628

Delivery Instructions

ARESTIA, NEW MEXICO. BUFFALO OILFIELD.

Joints	Footage	Description		Rack #
22	997.95	13 3/8"48# J-55 ST&C ERW R-3 CSG	NEXTEEL	N-10
				End:

Summary:

Received by: Brandy Ortiz Date

700-Outbound		775-Forklift	Hours	Rate $	
750-Inbound		725-Trucks #	#	#	
797-Call Out		LBS			
794-Overtime		Rates			
998-Misc		Totals			

See Reverse Side for Bill of Lading Disclaimer and Obligation Statement

Date:	12/12/2014	Size:	13.375
Customer:	ATLAS	Weight:	48
Customer PO:		Grade:	J-55
Rig & Lease:	ATLAS	Thread:	SC
Ticket No.:	12-14-2628	Condition:	NEW
Forklift No.:	255	Mill:	NEXTEEL
Reference:	HEAT#SB87476	Type:	ERW
Rack No.:	N-10	Trailer No.:	Truck 3

Total Length: 997.95' Total Count: 22 Total Weight: 47,901.60#

#	Length	#	Length	#	Length	#	Length	#	Length
1	45.00	21	45.20						
2	45.15	22	45.70						
3	45.50	**TOTAL**	**90.90**						
4	45.60								
5	45.65								
6	45.00								
7	45.40								
8	45.40								
9	45.50								
10	45.05								
TOTAL	**453.25**								
11	45.45								
12	45.45								
13	45.60								
14	45.60								
15	45.60								
16	45.55								
17	45.00								
18	45.50								
19	45.00								
20	45.05								
TOTAL	**453.80**								

Washita Valley Enterprises, Inc.

BILL OF LADING

P.O. Box 94160 • Oklahoma City, OK 73143-4160 • Phone (405) 670-5338 • DOT #259583 • I.C.C. #164156 • O.C.C. #52259

From	ATLAS TUBULAR/LINN ENERGY	Date	12/15/2014 BOL # 160215 03
P/U Loc	WVEI 250 YARD	Ordered By	YVETTE RASCO
City/State	10151 COUNTY ROAD 1060 HYDRO OK	PO/RQ #	9494
Lease/Rig	ARESTIA NM	Rel# / N#	300253
		Ref #	
Consignee	BUFFALO OILFIELD	WBS#: Ordered by	YVETTE RASCO
Lease/Rig	ARESTIA NM	PO/RQ #	
City/State	ARESTIA NM	Rel# / AFE	300253
		Ref #	
Delivery Date	12/11/2014 Time 3:00	WBS#:	
Truck/Trl	294 000T Carrier TRICOAST	Est Cost $	12-14-2628

Delivery Instructions
ARESTIA, NEW MEXICO. BUFFALO OILFIELD.

Joints	Footage		Description		Rack #
22	1001.80	13 3/8"48# J-55	ST&C ERW R-3 CSG	NEXTEEL	N-10
					End:

Summary:

Received by: Jose R. Gonzalez Date 12/15/14

700-Outbound		775-Forklift	Hours	Rate $	
750-Inbound		725-Trucks #	#	#	
797-Call Out		LBS			
794-Overtime		Rates			
998-Misc		Totals			

See Reverse Side for Bill of Lading Disclaimer and Obligation Statement

Date:	12/12/2014	Size:	13.375
Customer:	ATLAS	Weight:	48
Customer PO:		Grade:	J-55
Rig & Lease:	ATLAS	Thread:	SC
Ticket No.:	12-14-2628	Condition:	NEW
Forklift No.:	255	Mill:	NEXTEEL
Reference:	HEAT#SB87476	Type:	ERW
Rack No.:	N-10	Trailer No.:	Truck 4

Total Length: 1,001.80' Total Count: 22 Total Weight: 48,086.40#

#	Length	#	Length	#	Length	#	Length	#	Length
1	45.55	21	45.30						
2	45.60	22	45.70						
3	45.60	**TOTAL**	**91.00**						
4	45.55								
5	45.05								
6	45.10								
7	45.60								
8	45.50								
9	45.60								
10	45.50								
TOTAL	**454.65**								
11	45.55								
12	45.50								
13	45.70								
14	45.65								
15	45.65								
16	45.60								
17	45.65								
18	45.65								
19	45.70								
20	45.50								
TOTAL	**456.15**								

Washita Valley Enterprises, Inc.

BILL OF LADING

P.O. Box 94160 • Oklahoma City, OK 73143-4160 • Phone (405) 670-5338 • DOT #259583 • I.C.C. #164156 • O.C.C. #52259

From	ATLAS TUBULAR/LINN ENERGY	Date	12/12/2014 BOL # 160215 02
P/U Loc	WVEI 250 YARD	Ordered By	YVETTE RASCO
City/State	10151 COUNTY ROAD 1060 HYDRO OK	PO/RQ #	91494
Lease/Rig	ARESTIA NM	Rel# / N#	300253
		Ref #	
Consignee	BUFFALO OILFIELD	Ordered by WBS#:	YVETTE RASCO
Lease/Rig	ARESTIA NM	PO/RQ #	
City/State	ARESTIA NM	Rel# / AFE	300253
		Ref #	
Delivery Date	12/11/2014 Time 3:00	WBS#:	
Truck/Trl	318 0001 Carrier TRICOAST	Est Cost $	12-14-2628

Delivery Instructions
ARESTIA, NEW MEXICO. BUFFALO OILFIELD.

Joints	Footage	Description		Rack #
22	996.65	13 3/8"48# J-55 ST&C ERW R-3 CSG	NEXTEEL	N-10
				End:

Summary:

Received by: [signature] Date 12-12-14

700-Outbound		775-Forklift	Hours		Rate $
750-Inbound		725-Trucks #	#	#	
797-Call Out		LBS			
794-Overtime		Rates			
998-Misc		Totals			

See Reverse Side for Bill of Lading Disclaimer and Obligation Statement

Date:	12/12/2014	Size:	13.375
Customer:	ATLAS	Weight:	48
Customer PO:		Grade:	J-55
Rig & Lease:	ATLAS	Thread:	SC
Ticket No.:	12-14-2628	Condition:	NEW
Forklift No.:	255	Mill:	NEXTEEL
Reference:	HEAT#SB87476	Type:	ERW
Rack No.:	N-10	Trailer No.:	

Total Length: 996.65' Total Count: 22 Total Weight: 47,839.20#

#	Length	#	Length	#	Length	#	Length	#	Length
1	45.40	21	45.20						
2	45.65	22	45.00						
3	45.55	**TOTAL**	**90.20**						
4	45.55								
5	45.45								
6	45.60								
7	45.45								
8	45.45								
9	45.55								
10	45.40								
TOTAL	**455.05**								
11	45.40								
12	45.45								
13	45.00								
14	45.00								
15	45.50								
16	45.00								
17	45.00								
18	45.00								
19	45.05								
20	45.00								
TOTAL	**451.40**								

Washita Valley Enterprises, Inc.

BILL OF LADING

P.O. Box 94160 • Oklahoma City, OK 73143-4160 • Phone (405) 670-5338 • DOT #259583 • I.C.C. #164156 • O.C.C. #52259

From	ATLAS TUBULAR/LINN ENERGY	Date	12/12/2014 BOL # 160215 01
P/U Loc	WVEI 250 YARD	Ordered By	YVETTE RASCO
City/State	10151 COUNTY ROAD 1060 HYDRO OK	PO/RQ #	91494
Lease/Rig	ARESTIA NM	Rel# / N#	300253
		Ref #	
Consignee	BUFFALO OILFIELD	Ordered by WBS#:	YVETTE RASCO
Lease/Rig	ARESTIA NM	PO/RQ #	
City/State	ARESTIA NM	Rel# / AFE	300253
		Ref #	
Delivery Date	12/11/2014 Time 3:00	WBS#:	
Truck/Trl	175 000T Carrier TRICOAST	Est Cost $	12-14-2628

Delivery Instructions
ARESTIA, NEW MEXICO. BUFFALO OILFIELD.

Joints	Footage	Description		Rack #
22	999.70 13 3/8"48#	J-55 ST&C ERW R-3 CSG	NEXTEEL	N-10 End:

Summary:

Received by: Date

700-Outbound		775-Forklift	Hours Rate $
750-Inbound		725-Trucks #	# #
797-Call Out		LBS	
794-Overtime		Rates	
998-Misc		Totals	

See Reverse Side for Bill of Lading Disclaimer and Obligation Statement

Washita Valley Enterprises, Inc.

TOTAL LENGTH: 1,454.75' TOTAL COUNT: 32 TOTAL WEIGHT: 69,828.00#

Date:	12/12/2014	Size:	13.375
Customer:	ATLAS	Weight:	48
Customer PO:		Grade:	J-55
Rig & Lease:	ATLAS	Thread:	SC
Ticket No.:	12-14-2628	Condition:	NEW
Forklift No.:	255	Mill:	NEXTEEL
Reference:	HEAT#SB87476	Type:	ERW
Rack No.:	N-10	Trailer No.:	TRI-COAST 175

Total Length: 999.70' Total Count: 22 Total Weight: 47,985.60#

#	Length	#	Length	#	Length	#	Length	#	Length
1	45.00	21	45.65						
2	45.55	22	45.65						
3	45.45	**TOTAL**	**91.30**						
4	45.50								
5	45.50								
6	45.45								
7	45.30								
8	45.45								
9	45.50								
10	45.45								
TOTAL	**454.15**								
11	45.40								
12	45.05								
13	45.50								
14	45.45								
15	45.60								
16	45.60								
17	45.45								
18	45.35								
19	45.25								
20	45.60								
TOTAL	**454.25**								

CERTIFICATE No. : 140324-01 page : 59 of 60

CONTACT(P/O) No. : 73998

ISSUED DATE : 2014-03-21

COMMODITY : E.R.W STEEL PIPE

SPECIFICATION : API 5CT J55
API 5CT 2011

INSPECTION CERTIFICATE

EN10204 TYPE 3.1 B-1991

CUSTOMER : ATLAS TUBULAR,LP

NEXTEEL CO.,LTD. EXTEEL CO., LTD.
HEAD OFFICE 767-1, Daegak-Ri, Daesong-Myun, Nam-Gu, Pohang City, KyungBu Korea.

QA Reviewed and Approved
By:
Date:

ITEM NO.	TYPE OF PIPE END	NOMINAL SIZE	Dimension (O.D x Thick. x Length)	QUANTITY (PCS)	TOTAL WEIGHT (kg)	HEAT NO.	(Gauge Length: 2 INCH) YIELD STRENGTH psi (MPa)	TENSILE STRENGTH psi (MPa) B	TENSILE STRENGTH psi (MPa) W	EL (%)	CHEMICAL COMPOSITION(%) C	Si	Mn	P	S	Cr	Ni	Cu	Mo	V	Sol-Al	Ti	B	Nb	Ceq.	HYDRO-STATIC TEST T.P (PSI)	HYDRO-STATIC TEST RESULT	IMPACT TEST A.ENERGY (J)	IMPACT TEST SHEAR AREA (J)	HARDNESS TEST	Corrosion TEST	REMARK
	①		② ③					④		⑤	-4	-3		-4		-2	-3	-2		-3				⑦	⑧	⑨	(21)℃		HRB HV	HIC SSCC	
1	BPE	13-3/8	13.375 x 0.330 x 45'	44	41,332	SR87489	67,100	92,500		31	H	2519	200	1392	135	20	2	2	21	1	1	42		100	1,600	G	132	132			
							67,300	92,800	93,300	31	P	2524	202	1397	146	25	Tr	Tr	22	Tr	Tr	44		107			130				
							67,700	92,900	93,400	32	P	2520	202	1405	145	20	Tr	Tr	22	Tr	Tr	43		108			134				
2	BPE	13-3/8	13.375 x 0.330 x 40	1	835	132A08685	61,800	83,400		36	H	1900	160	900	110	18	32	1	20	Tr	2	39		130	1,600	G	132	132			
							62,400	84,100	84,700	36	P	1904	161	900	114	21	33	Tr	20	Tr	Tr	39		140			130				
							62,200	84,100	84,700	37	P	1902	161	910	118	18	32	Tr	22	Tr	Tr	39		135			135				
3	BPE	13-3/8	13.375 x 0.330 x 39	1	814	SR87489	67,100	92,500		31	H	2519	200	1392	135	20	2	2	21	1	1	42		100	1,600	G	132	132			
							67,300	92,800	93,300	31	P	2524	202	1397	146	25	Tr	Tr	22	Tr	Tr	44		107			130				
							67,700	92,900	93,400	32	P	2520	202	1405	145	20	Tr	Tr	22	Tr	Tr	43		108			134				
			•• SUB TOTAL ••	46	42,981																											

HEAT TREATMENT (WELD SEAM)	VISUAL & DIMENSION	FLATTENING, BEND, GUIDED BEND TEST	REVERSE FLATTENING TEST	WELD DUCTILITY TEST	FLARING TEST	RESIDUAL MAGNETISM TEST	CRUSH TEST	STRAIGHTNESS	DRIFT TEST	NONDESTRUCTIVE TEST(NDT) U.T SEAM	NONDESTRUCTIVE TEST(NDT) U.T FULL BODY	NONDESTRUCTIVE TEST(NDT) M.T
G	G	G						G	G	G		G

NOTE

① BPE: BLACK PLAIN END, BBE: BLACK BEVELLED END, BTE: BLACK THREADED END, BTC: BLACK THREADED & COUPLED, GPE: GALVANIZED PLAIN END,
② O.D: OUTSIDE DIAMETER Thick.: Wall Thickness (Unit : Inch)
③ Length (Unit : Feet)
④ B: BASE METAL, W: WELD SEAM
⑤ H: HEAT(LADLE) ANALYSIS, P: PRODUCT ANALYSIS
⑥ Chemical Composition Unit:-4: × 1/10000,-3: × 1/1000,-2: × 1/100(The test value less than each unit is regarded as Tr)
⑦ Carbon Equivalent: C+Mn/6+(Ni+Cu)/15+(Cr+Mo+V)/5
⑧ T.P:TEST PRESSURE
⑨ G : Good
⑩ NDT:NONDESTRUCTIVE TEST, E.T:EDDYCURRENT TEST, U.T:ULTRASONIC TEST, M.T:MAGNETIC PARTICLE TEST(Special End Area Test)
※ G : Good
※ Tr: Trace element

• Tensile Test(Strip Type Specimen:Width)
: ≤ 3-1/2"→19mm, 4"~7-5/8"→25mm, 8-5/8 ≤→38mm
: Specimen Orientation : L90
• Reference Indicator for NDE : N10 3.2mm(0.125") or N10
• Min.temperature for Heat Treatment : Min. 850℃

SIGNATURE

WE HEREBY CERTIFY THAT THE PRODUCTS HERE IN HAVE BEEN MADE AND TESTED IN ACCORDANCE WITH THE ABOVE SPECIFICATION AND ALSO WITH THE REQUIREMENTS CALLED FOR THE ORDER.

SURVEYOR TO :

SIGNATURE

MANAGER OF QUALITY ASSURANCE TEAM

CERTIFICATE No. : 140324-01 page : 58 of 60

CONTACT(P/O) No. : 73998

ISSUED DATE : 2014-03-21

COMMODITY : E.R.W. STEEL PIPE

SPECIFICATION : API 5CT J55
API 5CT 2011

INSPECTION CERTIFICATE

EN10204 TYPE 3.1 B-1991

CUSTOMER : ATLAS TUBULAR,LP

NEXTEEL CO.,LTD. EXTEEL CO., LTD.
HEAD OFFICE 767-1, Daegak-Ri, Daesong-Myun, Nam-Gu, Pohang City, KyungBu Korea.

QA Reviewed and Approved
By: Sally Stanley
Date:

(Gauge Length: 2 INCH)

ITEM NO.	TYPE OF PIPE END ①	NOMINAL SIZE	Dimension (O.D x Thick. x Length) ② ③	QUANTITY (PCS)	TOTAL WEIGHT (kg)	HEAT NO.	YIELD STRENGTH psi (MPa)	TENSILE STRENGTH psi (MPa) B ④	TENSILE STRENGTH psi (MPa) W ④	EL (%)	⑤	C -4	Si -3	Mn -4	P -4	S -4	Cr -2	Ni -2	Cu -3	Mo -2	V -3	Sol-Al	Ti	B	Nb	Ceq. ⑦	HYDRO-STATIC TEST T.P (PSI) ⑥	HYDRO-STATIC TEST RESULT ⑨	IMPACT TEST A.ENERGY (J) (21)℃	IMPACT TEST SHEAR AREA (J) (21)℃	HARDNESS TEST HRB HV	Corrosion TEST HIC SSCC	REMARK
1	BPE	13-3/8	13.375 x 0.330 x 45	20	18,787	S887476	66,400	91,200		32	H	2403	196	1385	118	22	2	1	18	Tr	3	31			90		1,600	G	131	133			
							66,900	91,500	92,200	32	P	2405	196	1391	119	26	1	Tr	19	Tr	1	32			98				136				
							66,700	91,300	92,000	32	P	2405	198	1390	123	25	1	Tr	18	Tr	1	33			96				131				
				70	65,755	S887480	68,300	92,500		32	H	2486	204	1372	33	21	2	1	10	Tr	3	29			90		1,600	G	135	131			
							69,000	93,200	93,800	32	P	2488	205	1379	50	26	Tr	Tr	11	Tr	Tr	29			100				129				
							68,600	93,200	93,600	32	P	2487	204	1380	42	21	Tr	Tr	12	Tr	Tr	29			91				129				
				63	59,179	S887484	68,000	92,100		32	H	2437	200	1382	129	15	2	1	13	1	1	49			90		1,600	G	131	130			
							68,400	92,100	92,700	33	P	2437	200	1389	139	16	Tr	Tr	14	Tr	Tr	50			95				133				
							68,500	92,800	93,300	32	P	2440	200	1386	135	15	Tr	Tr	13	Tr	Tr	49			97				127				
			** SUB TOTAL **	153	143,721																												

HEAT TREATMENT (WELD SEAM) G	VISUAL & DIMENSION G	FLATTENING, BEND, GUIDED BEND TEST G	REVERSE FLATTENING TEST	WELD DUCTILITY TEST	FLARING TEST	RESIDUAL MAGNETISM TEST	CRUSH TEST	STRAIGHTNESS G	DRIFT TEST G	NONDESTRUCTIVE TEST(NDT) U.T SEAM G	U.T FULL BODY	M.T G
	① BPE: BLACK PLAIN END, BBE: BLACK BEVELLED END, BTE: BLACK THREADED END, BTC: BLACK THREADED & COUPLED, GPE: GALVANIZED PLAIN END, ② O.D: OUTSIDE DIAMETER Thick.: Wall Thickness (Unit : Inch)	③ Length (Unit : Feet) ④ B: BASE METAL, W: WELD SEAM ⑤ H: HEAT(LADLE) ANALYSIS, P: PRODUCT ANALYSIS ⑥ Chemical Composition Unit:-4: × 1/10000,-3: × 1/1000,-2: × 1/100(The test value less than each unit is regarded as Tr) ⑦ Carbon Equivalent: C+Mn/6+(Ni+Cu)/15+(Cr+Mo+V)/5 ⑧ T.P:TEST PRESSURE ⑨ G : Good ⑩ NDT:NONDESTRUCTIVE TEST, E.T:EDDYCURRENT TEST, U.T:ULTRASONIC TEST, M.T:MAGNETIC PARTICLE TEST(Special End Area Test)											
NOTE		* G : Good * Tr: Trace element							• Tensile Test(Strip Type Specimen:Width) : ≤ 3-1/2"→19mm, 4"-7-5/8"→25mm, 8-5/8 ≤→38mm : Specimen Orientation : L90 • Reference Indicator for NDE : N10 3.2mm(0.125") or N10 • Min.temperature for Heat Treatment : Min. 650℃			

SIGNATURE

WE HEREBY CERTIFY THAT THE PRODUCTS HERE IN HAVE BEEN MADE AND TESTED IN ACCORDANCE WITH THE ABOVE SPECIFICATION AND ALSO WITH THE REQUIREMENTS CALLED FOR THE ORDER.

SIGNATURE

SURVEYOR TO :

MANAGER OF QUALITY ASSURANCE TEAM

증명서번호
CERTIFICATE No. : 131122 - 01

계약번호
CONTECT(P/O) No. : 70997

발급일자
ISSUED DATE : 2013-11-22

제품명
COMMODITY : E.R.W. STEEL PIPE

제품규격
SPECIFICATION : API 5CT J55
API 5CT 2011

검 사 증 명 서
INSPECTION CERTIFICATE

EN10204 TYPE 3.1 B-1991

넥 스 틸 ㈜
NEXTEEL CO., LTD.

본사 공장 : 경북 포항시 남구 대송면 대각리 767-1번지
HEAD OFFICE : 767-1, Daegak-Ri, Daesong-Myun, Nam-Gu, Pohang City, KyungBuk, Korea.

고객사
CUSTOMER : ATLAS TUBULAR,LP

ITEM NO.	관종 TYPE OF PIPE END ①	호칭경 NOMINAL SIZE	치수 Dimension 외경 x 두께 x 길이 (O.D x Thick. x Length) ② ③	수량 QUANTITY (PCS)	총중량 TOTAL WEIGHT (kg)	제강번호 HEAT NO.	인장시험 TENSILE TEST (Gauge Length: 2 INCH) 항복강도 YIELD STRENGTH psi (MPa)	인장강도 TENSILE STRENGTH psi (MPa) B ④	인장강도 TENSILE STRENGTH psi (MPa) W ④	연신율 EL (%)	화학성분 CHEMICAL COMPOSITION(%) ⑤	C -4	Si -3	Mn -4	P -4	S -2	Cr -3	Ni -2	Cu -3	Mo -2	V -3	Sol-Al -3	Ti -4	B	Nb	Ceq. ⑦	수압시험 HYDRO-STATIC TEST T.P (PSI) ⑧	RE SULT ⑨	충격시험 IMPACT TEST A.EN-ERGY (J) (21)℃	SHEAR AREA (%)	경도시험 HARD-NESS TEST HRB	HV	부식시험 Corro-sion TEST HIC	SSCC	비고 RE MARK
1	BPE	10-3/4	10.750 x 0.400 x 45	20	18,069	SP21600	68,000	94,800		32	H	2544	177	1403	145	18	2	2	18	Tr	Tr	26			90	2,500	G	135							
							68,900	95,400	95,500	33	P	2541	175	1400	143	15	Tr	Tr	16	Tr	Tr	25			90										
							68,500	95,100	95,600	33	P	2541	174	1399	143	16	Tr	Tr	15	Tr	Tr	25			90										
				45	40,654	SP57855	70,000	97,700		31	H	2580	177	1375	141	23	2	1	15	Tr	1	20			100	2,500	G	136							
							70,700	98,300	98,400	32	P	2578	173	1372	138	20	1	Tr	13	Tr	Tr	20			100										
							70,300	98,600	98,500	32	P	2577	174	1371	137	22	Tr	Tr	12	Tr	Tr	19			90										
2	BPE	13-3/8	13.375 x 0.330 x 38	105	83,289	S887489	67,100	92,500		31	H	2519	200	1392	135	20	2	2	21	1	1	42			100	1,600	G	135							
							67,600	93,000	93,200	31	P	2517	198	1389	132	17	Tr	1	19	Tr	Tr	40			90										
							67,800	93,100	93,300	32	P	2516	198	1390	133	17	1	Tr	18	Tr	Tr	41			90										
			•• SUB TOTAL ••	170	142,012																															

열처리 HEAT TREATMENT (WELD SEAM)	외관,치수검사 VISUAL & DIMENSION	편평,굽힘시험 FLATTENING, BEND, GUIDED BEND TEST	전개시험 REVERSE FLATTENING TEST	용접부연성시험 WELD DUCTILITY TEST	압확시험 FLARING TEST	잔류자장시험 RESIDUAL MAGNETISM TEST	압입시험 CRUSH TEST	진직도 STRAIGHTNESS	관통시험 DRIFT TEST	비파괴검사 ⑩ NONDESTRUCTIVE TEST(NDT) U.T SEAM	U.T FULL BODY	M.T
G	G	G						G	G	G	G	G

NOTE

① BPE: BLACK PLAIN END.
BBE: BLACK BEVELLED END.
BTE: BLACK THREADED END.
BTC: BLACK THREADED & COUPLED.
GPE: GALVANIZED PLAIN END.
GTE: GAVANIZED THREADED END.
GTC: GALVANIZED THREAD & COUPLED

② O.D: OUTSIDE DIAMETER, Thick.: Wall Thickness
Unit (M: mm, I: Inch)

③ Unit : (M: Meter, F: Feet, I: Inch)

④ B: BASE METAL, W: WELD METAL

⑤ H: HEAT(LADLE) ANALYSIS P: PRODUCT ANALYSIS

⑥ Chemical Composition Unit: -4:×1/10000, -3:×1/1000, -2:×1/100

⑦ Carbon Equivalent : C+Mn/6+(Ni+Cu)/15+(Cr+Mo+V)/5

⑧ T.P.: TEST PRESSURE ⑨ G: Good

⑩ NDT: E.T: EDDYCURRENT TEST
U.T: ULTRASONIC TEST
M.T: MAGNETIC PARTICLE TEST(Special End Area Test)

• Tr: It is within the standard range and include trace element

• Tensile Test(Strip Type Specimen:Width)
: ≤ 3-1/2" -> 19mm, 4" ~ 7-5/8" -> 25mm
8-5/8 ≤ -> 38mm
: < 8-5/8" Pipe Body : L90
8-5/8"≤ Pipe Body : T180, Seam Weld : W
• Reference Indicator for NDE : N10 3.2mm(0.125") or N10
• Min.temperature for Heat Treatment : Min. 950℃

SIGNATURE

SURVEYOR TO :

본 제품은 관련 규격이 정한 시험 및 검사에 합격하였음을 증명합니다.
WE HEREBY CERTIFY THAT THE PRODUCTS HERE IN HAVE BEEN MADE AND TESTED IN ACCORDANCE WITH THE ABOVE SPECIFICATION AND ALSO WITH THE REQUIREMENTS CALLED FOR THE ORDER.

SIGNATUR

MANAGER OF QUALITY ASSURANCE TEAM

ATLAS TUBULAR, LP

PO BOX 431
ROBSTOWN, TX 78380

Phone - 361-387-7505 Fax - 361-387-4613

INVOICE # : 1002213
Invoice Date : 12/19/2014
Page Number : 1 of 1

INVOICE

SOLD TO:

BUFFALO OILFIELD SUPPLY
201 MAIN STREET, SUITE 1680
FT. WORTH, TEXAS 76102

Customer PO #	: PO-015680		Terms	: 1%-10-30	
Order Date	: 12/08/2014	Ship Date : 12/12/2014	F.O.B.	: 006 - LOCATION	
Shipped Via	: SEE BELOW		Sales Order #	: 300253	
Well Name	: STOCK		Sold By	: RG	Phone: 432-897-0050

ITEM	QUANTITY	DESCRIPTION	$ RATE	$ TOTAL
1	5,906.65 FT	13-3/8" 48.00# J-55 STC R3 ERW NEW API CASING (NEXTEEL) 130 JTS	26.44	156,171.83

Discount of $ 1,561.72 Available If Paid By 12/29/2014.

Accounts are considered past due after 30 days at which time 1.5% per month rate of interest is assessed.

NON-TAXABLE, TX 0.0000 % TAX $: 0.00

INVOICE TOTAL $: 156,171.83

Washita Valley Enterprises, Inc. BILL OF LADING

P.O. Box 94160 • Oklahoma City, OK 73143-4160 • Phone (405) 670-5338 • DOT #259583 • O.C.C. #164156 • O.C.C. #52259

From	ATLAS TUBULAR/LINN ENERGY	Date	12/15/2014 BOL # 160215 06
P/U Loc	WVEI 250 YARD	Ordered By	YVETTE RASCO
City/State	10151 COUNTY ROAD 1060 HYDRO OK	PO/RQ #	91494
Lease/Rig	ARESTIA NM	Rel# / N#	300253
		Ref #	

Consignee	BUFFALO OILFIELD	Ordered by WBS#:	YVETTE RASCO
Lease/Rig	ARESTIA NM	PO/RQ #	
City/State	ARESTIA NM	Rel# / AFE	300253
		Ref #	
Delivery Date	12/11/2014 Time 3:00	WBS#:	
Truck/Trl	303 000T Carrier TRICOAST	Est Cost $	12-14-2628

Delivery Instructions
ARESTIA, NEW MEXICO. BUFFALO OILFIELD.

Joints	Footage	Description		Rack #
20	909.05 13 3/8"48#	J-55 ST&C ERW R-3 CSG	NEXTEEL	J-09 End:

5906.65
130 JTS

Summary:

Trucks Used: 6 Total Joints Delivered: 130 (5,906.65 Feet)

88	3,996.10	13 3/8"48#	J-55	ST&C ERW R-3 CSG	NEXTEEL N
42	1,910.55	13 3/8"48#	J-55	ST&C ERW R-3 CSG	NEXTEEL J

Received by: Rob Salas Date

700-Outbound	283,519 @ .30 HRS = 850.56	775-Forklift	Hours	Rate $	
750-Inbound		725-Trucks #	#	#	
797-Call Out		LBS			
794-Overtime		Rates			
998-Misc		Totals			

See Reverse Side for Bill of Lading Disclaimer and Obligation Statement

Date:	12/12/2014	Size:	13.375
Customer:	ATLAS	Weight:	48
Customer PO:		Grade:	J-55
Rig & Lease:	ATLAS	Thread:	STC.
Ticket No.:	12-14-2628	Condition:	NEW
Forklift No.:	255	Mill:	NEXTEEL
Reference:	HEAT#SB87489	Type:	ERW
Rack No.:	J-09	Trailer No.:	Truck 6

Total Length: 909.05' Total Count: 20 Total Weight: 43,634.40#

#	Length	#	Length	#	Length	#	Length	#	Length
1	45.45								
2	45.50								
3	45.50								
4	45.45								
5	45.50								
6	45.50								
7	45.45								
8	45.50								
9	45.45								
10	45.45								
TOTAL	**454.75**								
11	45.45								
12	45.55								
13	45.55								
14	45.55								
15	45.55								
16	45.00								
17	45.55								
18	45.00								
19	45.50								
20	45.60								
TOTAL	**454.30**								

Washita Valley Enterprises, Inc.

BILL OF LADING

P.O. Box 94160 • Oklahoma City, OK 73143-4160 • Phone (405) 670-5338 • DOT #259583 • I.C.C. #164156 • O.C.C. #52259

From	ATLAS TUBULAR/LINN ENERGY	Date	12/15/2014 BOL # 160215 05
P/U Loc	WVEI 250 YARD	Ordered By	YVETTE RASCO
City/State	10151 COUNTY ROAD 1060 HYDRO OK	PO/RQ #	91494
Lease/Rig	ARESTIA NM	Rel# / N#	300253
		Ref #	
Consignee	BUFFALO OILFIELD	Ordered by WBS#:	YVETTE RASCO
Lease/Rig	ARESTIA NM	PO/RQ #	
City/State	ARESTIA NM	Rel# / AFE	300253
		Ref #	
Delivery Date	12/11/2014 Time 3:00	WBS#:	
Truck/Trl	296 0007 Carrier TRICOAST	Est Cost $	12-14-2628

Delivery Instructions

ARESTIA, NEW MEXICO. BUFFALO OILFIELD.

Joints	Footage	Description		Rack #
22	1001.05	13 3/8"48# J-55 ST&C ERW R-3 CSG	NEXTEEL	J-09 End:

Summary:

Received by: _____ Date

700-Outbound		775-Forklift	Hours	Rate $	
750-Inbound		725-Trucks #	#	#	
797-Call Out		LBS			
794-Overtime		Rates			
998-Misc		Totals			

See Reverse Side for Bill of Lading Disclaimer and Obligation Statement

Date:	12/12/2014	Size:	13.375
Customer:	ATLAS	Weight:	48
Customer PO:		Grade:	J-55
Rig & Lease:	ATLAS	Thread:	STC
Ticket No.:	12-14-2628	Condition:	NEW
Forklift No.:	255	Mill:	NEXTEEL
Reference:	HEAT#SB87489	Type:	ERW
Rack No.:	J-09	Trailer No.:	Truck 5

Total Length: 1,001.05 Total Count: 22 Total Weight: 48,050.40#

#	Length	#	Length	#	Length	#	Length	#	Length
1	45.00	21	45.50						
2	45.50	22	45.50						
3	45.50	**TOTAL**	**91.00**						
4	45.50								
5	45.50								
6	45.50								
7	45.50								
8	45.55								
9	45.55								
10	45.55								
TOTAL	**454.65**								
11	45.55								
12	45.50								
13	45.50								
14	45.45								
15	45.50								
16	45.45								
17	45.50								
18	45.70								
19	45.60								
20	45.65								
TOTAL	**455.40**								

Washita Valley Enterprises, Inc.

BILL OF LADING

P.O. Box 94160 • Oklahoma City, OK 73143-4160 • Phone (405) 670-5338 • DOT #259583 • I.C.C. #164156 • O.C.C. #52259

From	ATLAS TUBULAR/LINN ENERGY	Date 12/15/2014	BOL # 160215 04
P/U Loc	WVEI 250 YARD	Ordered By	YVETTE RASCO
City/State	10151 COUNTY ROAD 1060 HYDRO OK	PO/RQ #	91494
Lease/Rig	ARESTIA NM	Rel# / N#	300253
		Ref #	
Consignee	BUFFALO OILFIELD	Ordered by WBS#:	YVETTE RASCO
Lease/Rig	ARESTIA NM	PO/RQ #	
City/State	ARESTIA NM	Rel# / AFE	300253
		Ref #	
Delivery Date	12/11/2014 Time 3:00	WBS#:	
Truck/Trl	194 0007 Carrier TRICOAST	Est Cost $	12-14-2628

Delivery Instructions
ARESTIA, NEW MEXICO. BUFFALO OILFIELD.

Joints	Footage	Description		Rack #
22	997.95	13 3/8"48# J-55 ST&C ERW R-3 CSG	NEXTEEL	N-10 End:

Summary:

Received by: Braidys Ortiz | Date

700-Outbound		775-Forklift	Hours	Rate $	
750-Inbound		725-Trucks #	#	#	
797-Call Out		LBS			
794-Overtime		Rates			
998-Misc		Totals			

See Reverse Side for Bill of Lading Disclaimer and Obligation Statement

Date:	12/12/2014	Size:	13.375
Customer:	ATLAS	Weight:	48
Customer PO:		Grade:	J-55
Rig & Lease:	ATLAS	Thread:	SC
Ticket No.:	12-14-2628	Condition:	NEW
Forklift No.:	255	Mill:	NEXTEEL
Reference:	HEAT#SB87476	Type:	ERW
Rack No.:	N-10	Trailer No.:	Truck 3

Total Length: 997.95' Total Count: 22 Total Weight: 47,901.60#

#	Length	#	Length	#	Length	#	Length	#	Length
1	45.00	21	45.20						
2	45.15	22	45.70						
3	45.50	**TOTAL**	**90.90**						
4	45.60								
5	45.65								
6	45.00								
7	45.40								
8	45.40								
9	45.50								
10	45.05								
TOTAL	**453.25**								
11	45.45								
12	45.45								
13	45.60								
14	45.60								
15	45.60								
16	45.55								
17	45.00								
18	45.50								
19	45.00								
20	45.05								
TOTAL	**453.80**								

Washita Valley Enterprises, Inc. BILL OF LADING

P.O. Box 94160 • Oklahoma City, OK 73143-4160 • Phone (405) 670-5338 • DOT #259583 • I.C.C. #164156 • O.C.C. #52259

From	ATLAS TUBULAR/LINN ENERGY	Date	12/15/2014 BOL # 160215 03
P/U Loc	WVEI 250 YARD	Ordered By	YVETTE RASCO
City/State	10151 COUNTY ROAD 1060 HYDRO OK	PO/RQ #	9/494
Lease/Rig	ARESTIA NM	Rel# / N#	300253
		Ref #	

Consignee	BUFFALO OILFIELD	Ordered by	WBS#: YVETTE RASCO
Lease/Rig	ARESTIA NM	PO/RQ #	
City/State	ARESTIA NM	Rel# / AFE	300253
		Ref #	
Delivery Date	12/11/2014 Time 3:00		WBS#:
Truck/Trl	294 000T Carrier TRICOAST	Est Cost $	12-14-2628

Delivery Instructions
ARESTIA, NEW MEXICO. BUFFALO OILFIELD.

Joints	Footage			Description		Rack #
22	1001.80	13 3/8"48#	J-55	ST&C ERW R-3 CSG	NEXTEEL	N-10 End:

Summary:

Received by: Jose R. Gonzalez Date 12/15/14

700-Outbound		775-Forklift	Hours		Rate $
750-Inbound		725-Trucks #	#		#
797-Call Out		LBS			
794-Overtime		Rates			
998-Misc		Totals			

See Reverse Side for Bill of Lading Disclaimer and Obligation Statement

Date:	12/12/2014	Size:	13.375
Customer:	ATLAS	Weight:	48
Customer PO:		Grade:	J-55
Rig & Lease:	ATLAS	Thread:	SC
Ticket No.:	12-14-2628	Condition:	NEW
Forklift No.:	255	Mill:	NEXTEEL
Reference:	HEAT#SB87476	Type:	ERW
Rack No.:	N-10	Trailer No.:	Truck 4

Total Length: 1,001.80' Total Count: 22 Total Weight: 48,086.40#

#	Length	#	Length	#	Length	#	Length	#	Length
1	45.55	21	45.30						
2	45.60	22	45.70						
3	45.60	**TOTAL**	**91.00**						
4	45.55								
5	45.05								
6	45.10								
7	45.60								
8	45.50								
9	45.60								
10	45.50								
TOTAL	**454.65**								
11	45.55								
12	45.50								
13	45.70								
14	45.65								
15	45.65								
16	45.60								
17	45.65								
18	45.65								
19	45.70								
20	45.50								
TOTAL	**456.15**								

Washita Valley Enterprises, Inc.

BILL OF LADING

P.O. Box 94160 • Oklahoma City, OK 73143-4160 • Phone (405) 670-5338 • DOT #259583 • I.C.C. #164156 • O.C.C. #52259

From	ATLAS TUBULAR/LINN ENERGY	Date	12/12/2014 BOL # 160215 02
P/U Loc	WVEI 250 YARD	Ordered By	YVETTE RASCO
City/State	10151 COUNTY ROAD 1060 HYDRO OK	PO/RQ #	91494
Lease/Rig	ARESTIA NM	Rel# / N#	300253
		Ref #	
Consignee	BUFFALO OILFIELD	Ordered by WBS#:	YVETTE RASCO
Lease/Rig	ARESTIA NM	PO/RQ #	
City/State	ARESTIA NM	Rel# / AFE	300253
		Ref #	
Delivery Date	12/11/2014 Time 3:00	WBS#:	
Truck/Trl	318 000T Carrier TRICOAST	Est Cost $	12-14-2628

Delivery Instructions
ARESTIA, NEW MEXICO. BUFFALO OILFIELD.

Joints	Footage	Description		Rack #
22	996.65	13 3/8"48# J-55 ST&C ERW R-3 CSG	NEXTEEL	N-10 End:

Summary:

Received by: [signature] Date 12-12-14

700-Outbound		775-Forklift	Hours	Rate $	
750-Inbound		725-Trucks #	#	#	
797-Call Out		LBS			
794-Overtime		Rates			
998-Misc		Totals			

See Reverse Side for Bill of Lading Disclaimer and Obligation Statement

Date:	12/12/2014	Size:	13.375
Customer:	ATLAS	Weight:	48
Customer PO:		Grade:	J-55
Rig & Lease:	ATLAS	Thread:	SC
Ticket No.:	12-14-2628	Condition:	NEW
Forklift No.:	255	Mill:	NEXTEEL
Reference:	HEAT#SB87476	Type:	ERW
Rack No.:	N-10	Trailer No.:	

Total Length: 996.65' Total Count: 22 Total Weight: 47,839.20#

#	Length	#	Length	#	Length	#	Length	#	Length
1	45.40	21	45.20						
2	45.65	22	45.00						
3	45.55	**TOTAL**	**90.20**						
4	45.55								
5	45.45								
6	45.60								
7	45.45								
8	45.45								
9	45.55								
10	45.40								
TOTAL	**455.05**								
11	45.40								
12	45.45								
13	45.00								
14	45.00								
15	45.50								
16	45.00								
17	45.00								
18	45.00								
19	45.05								
20	45.00								
TOTAL	**451.40**								

Washita Valley Enterprises, Inc. BILL OF LADING

P.O. Box 94160 • Oklahoma City, OK 73143-4160 • Phone (405) 670-5338 • DOT #259583 • I.C.C. #164156 • O.C.C. #52259

From	ATLAS TUBULAR/LINN ENERGY	Date	12/12/2014 BOL # 160215 01
P/U Loc	WVEI 250 YARD	Ordered By	YVETTE RASCO
City/State	10151 COUNTY ROAD 1060 HYDRO OK	PO/RQ #	91494
Lease/Rig	ARESTIA NM	Rel# / N#	300253
		Ref #	
Consignee	BUFFALO OILFIELD	WBS#: Ordered by	YVETTE RASCO
Lease/Rig	ARESTIA NM	PO/RQ #	
City/State	ARESTIA NM	Rel# / AFE	300253
		Ref #	
Delivery Date	12/11/2014 Time 3:00	WBS#:	12-14-2628
Truck/Trl	175 000T Carrier TRICOAST	Est Cost $	

Delivery Instructions
ARESTIA, NEW MEXICO. BUFFALO OILFIELD.

Joints	Footage	Description		Rack #
22	999.70	13 3/8"48# J-55 ST&C ERW R-3 CSG	NEXTEEL	N-10 End:

Summary:

Received by: Date

700-Outbound		775-Forklift	Hours Rate $
750-Inbound		725-Trucks #	# #
797-Call Out		LBS	
794-Overtime		Rates	
998-Misc		Totals	

See Reverse Side for Bill of Lading Disclaimer and Obligation Statement

Washita Valley Enterprises, Inc.

TOTAL LENGTH: 1,454.75' TOTAL COUNT: 32 TOTAL WEIGHT: 69,828.00#

Date:	12/12/2014	Size:	13.375
Customer:	ATLAS	Weight:	48
Customer PO:		Grade:	J-55
Rig & Lease:	ATLAS	Thread:	SC
Ticket No.:	12-14-2628	Condition:	NEW
Forklift No.:	255	Mill:	NEXTEEL
Reference:	HEAT#SB87476	Type:	ERW
Rack No.:	N-10	Trailer No.:	TRI-COAST 175

Total Length: 999.70' Total Count: 22 Total Weight: 47,985.60#

#	Length	#	Length	#	Length	#	Length	#	Length
1	45.00	21	45.65						
2	45.55	22	45.65						
3	45.45	**TOTAL**	**91.30**						
4	45.50								
5	45.50								
6	45.45								
7	45.30								
8	45.45								
9	45.50								
10	45.45								
TOTAL	**454.15**								
11	45.40								
12	45.05								
13	45.50								
14	45.45								
15	45.60								
16	45.60								
17	45.45								
18	45.35								
19	45.25								
20	45.60								
TOTAL	**454.25**								

Burnett Oil Co., Inc.
801 Cherry Street- Unit #9
Fort Worth, Texas
76102-6881
Phone: 817-332-5108
Fax: 817-332-2438

Collapse Pressure	Safety Factor	Min		Burst Pressure	Safety Factor	Min		Tension	Safety Factor	Min	
			13-3/8" 48# H-40								
			ST&C								
			770				1,730,000				322,000
351	1.125	395		351	1.0	351		36,000	1.8	64,800	
			9-5/8" 36# J-55								
			LT&C								
			2,000				3,520				453,000
1220	1.125	1,372		1,220	1.0	1,220		82,800	1.8	149,040	
			7" 26# L-80								
			LT&C								
			5,410				7,240				511,000
								186,114	1.8	335,005	
			7" 23# L-80								
			LT&C								
			3,830				6,340				435,000
								186,114	1.8	335,005	
			7" 26# J-55								
			LT&C								
			4,320				4,980				367,000
								202,314	1.8	364,165	
			5-1/2" 17# L-80								
			LT&C								
			6,290				7,740				338,000
-	1.125	-		-	1.0	-		153,714	1.8	276,685	

Burnett Oil Co., Inc.
801 Cherry Street- Unit #9
Fort Worth, Texas
76102-6881
Phone: 817-332-5108 Fax: 817-332-2438

Collapse Pressure	Safety Factor	Min		Burst Pressure	Safety Factor	Min		Tension	Safety Factor	Min		
			13-3/8" 48# H-40									
			ST&C									
			770				1,730,000				322,000	
351	1.125	395		351	1.0	351		36,000	1.8	64,800		
			9-5/8" 36# J-55									
			LT&C									
			2,000				3,520				453,000	
1220	1.125	1,372		1,220	1.0	1,220		82,800	1.8	149,040		
			7" 26# L-80									
			LT&C									
			5,410				7,240				511,000	
								186,114	1.8	335,005		
			7" 23# L-80									
			LT&C									
			3,830				6,340				435,000	
								186,114	1.8	335,005		
			7" 26# J-55									
			LT&C									
			4,320				4,980				367,000	
								202,314	1.8	364,165		
			5-1/2" 17# L-80									
			LT&C									
			6,290				7,740				338,000	
-	1.125	-		-	1.0	-		153,714	1.8	276,685		

Burnett Oil Co., Inc.
801 Cherry Street- Unit #9
Fort Worth, Texas
76102-6881
Phone: 817-332-5108
Fax: 817-332-2438

Collapse Pressure	Safety Factor	Min		Burst Pressure	Safety Factor	Min		Tension	Safety Factor	Min	
			13-3/8" 48# H-40								
			ST&C								
			770				1,730,000				322,000
351	1.125	395		351	1.0	351		36,000	1.8	64,800	
			9-5/8" 36# J-55								
			LT&C								
			2,000				3,520				453,000
1220	1.125	1,372		1,220	1.0	1,220		82,800	1.8	149,040	
			7" 26# L-80								
			LT&C								
			5,410				7,240				511,000
								186,114	1.8	335,005	
			7" 23# L-80								
			LT&C								
			3,830				6,340				435,000
								186,114	1.8	335,005	
			7" 26# J-55								
			LT&C								
			4,320				4,980				367,000
								202,314	1.8	364,165	
			5-1/2" 17# L-80								
			LT&C								
			6,290				7,740				338,000
-	1.125	-		-	1.0	-		153,714	1.8	276,685	

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: 0

Offsite topsoil source description:

Onsite topsoil removal process: Approximately six (6) inches of top soil will be stripped from the proposed access road in preparation for construction. The removed top soil will be spread along the edge of the road and the ditch and will be seeded with the BLM approved seed mix.
Access other construction information: All construction material will be native caliche. The driving surface will be made of 6" rolled and compacted caliche. It may be available at the proposed location. If unavailable on location or road, caliche will be hauled from nearest BLM approved caliche pit.
Access miscellaneous information:

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

Drainage Control

New road drainage crossing: CULVERT

Drainage Control comments: Ditching will be done on both sides of the road the entire length of the road to control drainage. The ditch will have a minimum depth of one (1) foot below and a down sloping berm of six (6) inches above the ground level. All ditching will be completed as per BLM requirements.
Road Drainage Control Structures (DCS) description: Ditching will be done on both sides of the road the entire length of the road to control drainage. The ditch will have a minimum depth of one (1) foot below and a down sloping berm of six (6) inches above the ground level. All ditching will be completed as per BLM requirements.
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:

P24FIL1H_Existing_Wells_20171110103150.pdf

Existing Wells description:

Operator Name: BURNETT OIL COMPANY INCORPORATED

Well Name: PARTITION 24 FED IL **Well Number:** 1H

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

Submit or defer a Proposed Production Facilities plan? SUBMIT

Production Facilities description: Existing Battery

Production Facilities map:

Partition_Battery_Diagram_20171110103212.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

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

[redacted] **Source longitude:**

Source latitude:

Source datum:

Water source permit type: OTHER

Source land ownership: FEDERAL

Water source transport method: PIPELINE

Source transportation land ownership: FEDERAL

Water source volume (barrels): 0 **Source volume (acre-feet):** 0

Source volume (gal): 0

Water source and transportation map:

PARTITION_24_FED_UNIT_B_FRAC_POND_20171110104639.pdf

Water source comments: See attached plats for pending Frac Pond. See attached SUPO for alternate water sources

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.):**

Operator Name: BURNETT OIL COMPANY INCORPORATED

Well Name: PARTITION 24 FED IL **Well Number:** 1H

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

Drilling method: **Drill material:**

Grout material: **Grout depth:**

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

Well Production type: **Completion Method:**

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description: All construction material for the roadway and drilling pad will be native caliche from the nearest BLM approved pit located at NW % SE % of Section 11 in T17S, R31 E, Eddy County, NM, or from existing available deposits found on the location. All will be in accordance with the drilling stipulations for this well. If caliche is flipped on location, the following process will be followed. a. A caliche permit will be obtained from BLM for the caliche pit located at NW % SE % of Section 11 in T17S, R31 E, Eddy County, NM by the dirt work vendor prior to pushing up any caliche. Neither caliche nor top soil will be piled outside the well pad. When caliche is found , material will be stock piled with in the pad site to build the location and road. c. An area approximately 120'x120' is used within the proposed site to remove caliche.
Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: Drill cuttings will be disposed of in a closed loop system using steel haul off tanks. All drilling fluids will be hauled off location to a contracted off lease disposal location. Trash, waste paper, garbage and junk will be placed in a portable, screened trash container on location. All trash and debris will be transported to an authorized off-lease disposal station within thirty (30) days following the completion activities. A properly maintained Porto-john will be provided for the crews during drilling and completion operations. All will be removed after all completion operations have ended. Waste amount is TBD at this time.
Amount of waste: 0 barrels

Waste disposal frequency : One Time Only

Safe containment description: Oil produced during testing will be put into steel storage tank for later sales.Water produced during testing operations will be put in the steel frac tanks pit until well is turned to the lease tank battery. All produced water will be disposed of through one of our approved disposal methods
Safe containmant attachment:

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

Disposal location description: Off Lease disposal location.

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:

Rig_Layout_P24FIL1H_20171110113916.pdf

Comments:

Operator Name: BURNETT OIL COMPANY INCORPORATED

Well Name: PARTITION 24 FED IL **Well Number:** 1H

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance **Multiple Well Pad Name:** PARTITION 24 FED

Multiple Well Pad Number: IL

Recontouring attachment:

Drainage/Erosion control construction: All construction material for the roadway and drilling pad will be native caliche from the nearest BLM approved pit located at NW Y.. SE Y.. of Section 11 in T17S, R31 E, Eddy County, NM, or from existing available deposits found on the location. All will be in accordance with the drilling stipulations for this well.

Drainage/Erosion control reclamation: After drilling and successful completion operations are finished, all equipment and other materials not required for normal production operation will be removed.Burnett Oil respectfully requests two (2) years to downsize the drilling location in order to have room for equipment to fracture stimulate three (3) to four (4) intervals. Each one requires a large volume fracture treatment with several pumps, a large sand mover, several frac tans, a treatment can and various other vehicles and equipment. Burnett will, if all fracs are completed before the two (2) years, contact BLM to downsize the location. Refer to attached Exhibit P which shows resulting location after downsizing and showing the sides of location where the caliche would be left for use of kill trucks, hot oil trucks, foam units or whatever is needed to service unit, which is what has to happen if the location is reclaimed on all four (4) sides to the safety anchors.The pad size will be reduced to the amount required for normal operation of the producing well. This reduced portion will be restored to the BLM stipulations. If a well is abandoned, the surface location and unneeded road will be restored according to BLM stipulations within ninety (90) days of final abandon and sit re-seeded with BLM (#2) seed mix.

Well pad proposed disturbance (acres): 2.33
Road proposed disturbance (acres): 0.04
Powerline proposed disturbance (acres): 0.01
Pipeline proposed disturbance (acres): 2.46
Other proposed disturbance (acres): 0.01
Total proposed disturbance: 4.85

Well pad interim reclamation (acres): 1.65
Road interim reclamation (acres): 0.04
Powerline interim reclamation (acres): 0.01
Pipeline interim reclamation (acres): 2.46
Other interim reclamation (acres): 0.01
Total interim reclamation: 4.17

Well pad long term disturbance (acres): 1.65
Road long term disturbance (acres): 0.04
Powerline long term disturbance (acres): 0.01
Pipeline long term disturbance (acres): 2.46
Other long term disturbance (acres): 0.01
Total long term disturbance: 4.17

Disturbance Comments: Powerlines are existing so there is no additional disturbance from BOCI. Any disturbance will be at the discretion of CVE. Also there is no "other disturbance" but glitch in system will not accept zero so I had to enter .01 in order to submit APD.

Reconstruction method: The pad size will be reduced to the amount required for normal operation of the producing well. This reduced portion will be restored to the BLM stipulations. An area approximately 120'x120' is used within the proposed site to remove caliche. When caliche is found, material will be stock piled within the pad site to build the location and road . Powerlines are existing so there is no additional disturbance from BOCI. Any disturbance will be at the discretion of CVE. Also there is no "other disturbance" but glitch in system will not accept zero so I had to enter .01 in order to submit APD.

Topsoil redistribution: Topsoil stock pile will be on the South side of the location to be used during reclamation.

Soil treatment: As Needed and weather permitting.

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? YES

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:**

Total pounds/Acre:

Seed Summary	
Seed Type	**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: N/A

Weed treatment plan attachment:

Monitoring plan description: N/A

Monitoring plan attachment:

Success standards: N/A

Pit closure description: N/A

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

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:**

Operator Name: BURNETT OIL COMPANY INCORPORATED

Well Name: PARTITION 24 FED IL **Well Number:** 1H

Disturbance type: NEW ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

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: PIPELINE

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

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:**

Operator Name: BURNETT OIL COMPANY INCORPORATED

Well Name: PARTITION 24 FED IL **Well Number:** 1H

Section 12 - Other Information

Right of Way needed? YES **Use APD as ROW?** YES

ROW Type(s): 281001 ROW - ROADS,288100 ROW – O&G Pipeline,289001 ROW- O&G Well Pad

ROW Applications

SUPO Additional Information: See attach surface use agreement from lease holder which is other than Burnett. Also so attached SUPO for additional information.
Use a previously conducted onsite? YES

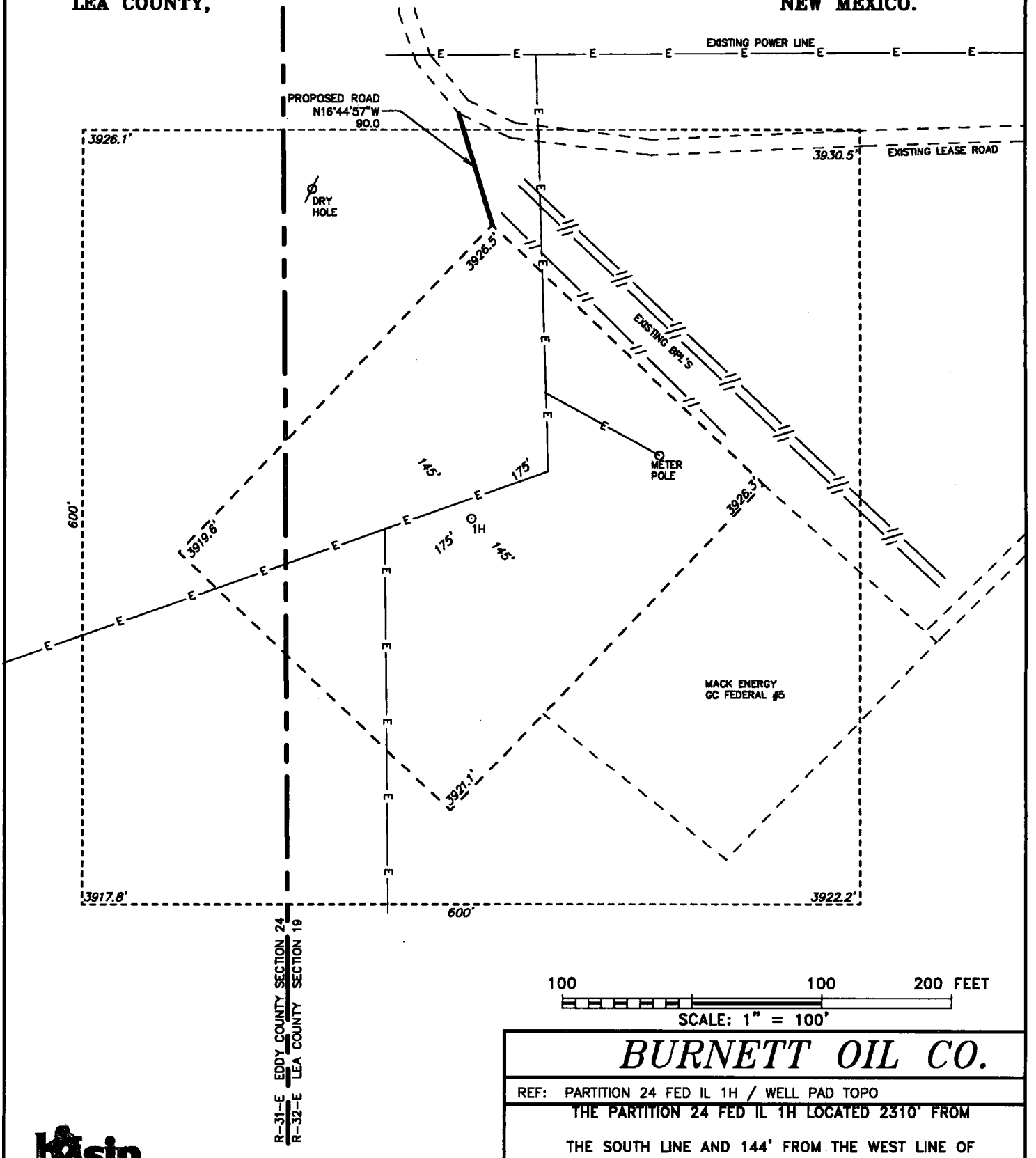
Previous Onsite information: Approved on 5/8/17

Other SUPO Attachment

COG_Burnett__Signed__Letter_Agreement_20171110111306.pdf
P24FIL1H_SUPO_20171110111408.pdf
P24FIL1H__Reclamation_Plat_20171110111503.pdf
2017.10.05_PARTITION_24_FED_UNIT_IL_1H_Cmbd_20180307142334.pdf

SECTION 19, TOWNSHIP 17 SOUTH, RANGE 32 EAST, N.M.P.M.,

LEA COUNTY, **NEW MEXICO.**



100 100 200 FEET

SCALE: 1" = 100'

BURNETT OIL CO.

REF: PARTITION 24 FED IL 1H / WELL PAD TOPO

THE PARTITION 24 FED IL 1H LOCATED 2310' FROM THE SOUTH LINE AND 144' FROM THE WEST LINE OF SECTION 19, TOWNSHIP 17 SOUTH, RANGE 32 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO.

N.M.P.M.,

basin surveys
focused on excellence in the oilfield
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Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

W.O. Number: 33291	Drawn By: K. GOAD	Date: 09-19-2017	Survey Date: 4-10-2017	Sheet 1 of 1 Sheets

b. 9 5/8" Intermediate Casing:

- Cement to surface
- Lead: 475 sx ExtendaCem – CZ 0.1250 lbm Poly-E-Flake, Fluid weight 13.5 lbm/gal, slurry yield 1.745 ft3/sx, total mixing fluid 9.2 gal/sx.
- Tail: 205 sx HalCem fluid weight 14.8 lbm/gal, slurry yield 1.326 ft3/sx, total mixing fluid 6.34 gal/sx.
- Excess Cement : 50%

c. 7" & 5 1/2" Production Casing:

- Displace mud from lateral with fresh water.
- Open DV Tool and pump the following cement. Lead: 255 sx EconoCem – C, 0.1250 lbm Poly-E-Flake, 0.25 lbm D-Air 5000, fluid weight 11.9 lbm/gal, slurry yield 2.464 ft3/sx, total mixing fluid 14.24 gal/sx.
- Tail: 170 sx Halcem, 0.50% LAP-1, 0.25 lbm D-Air 5000, 0.40% CFR-3, 0.10% HR-800, fluid weight 14.8 lbm/gal, slurry yield 1.33 ft3/sx, total mixing fluid 6.29 gal/sx.
- Excess Cement: 35%

The above cement volumes may be revised pending the caliper measurement from the open hole logs. **Casing/cementing design is to bring cement inside the intermediate casing to approximately 1,500'.**

4. Pressure Control Equipment:

The blowout prevention equipment (BOPE) shown in the attached diagram will consist of a 3000 PSI Hydril Unit (annular) with hydraulic closing equipment. The equipment will comply with Onshore Order #2. BOPE will be tested to 3,000 psi and the Annular tested to 1,500 psi and maintained for at least ten (10) minutes. The 13 3/8" x 13 5/8" drilling head will be installed on the surface casing and in use continuously until total depth is reached. An independent testing company will be used for the testing. Other accessory BOP equipment will include a Kelly cock, floor safety valve, choke lines and choke manifold having 3000 PSI WP rating.

5. Auxiliary Well Control and Monitoring Equipment:

a. A Kelly cock will be in the drill string at all times.

b. A full opening drill pipe stabbing valve with the appropriate connections will be on the rig floor at all times.

c. Hydrogen Sulfide detection and breathing equipment will be installed and in operation at a drilling depth of 1800' (which is more than 500' above top of Grayburg) and will remain until production casing is cemented.

d. An H2S compliance package will be on all sites while drilling.

b. Surface Casing Info

The proposed 13-3/8" casing setting depth is +/- 720' based on cross sections which show the estimated top of the rustler and top of salt. Drilling times will be plotted to find the hard section just above the salt. A mud logger will be on location to evaluate drill and cutting samples as long as circulation is maintained. If salt is penetrated, it will be obvious by the sudden increase in water salinity and surface casing will then be set above the top of salt. Our highly experienced drilling personnel have drilled many wells in this area and are able to easily identify the hard streak on the top of the salt.

c. Intermediate casing

We will run 9-5/8" intermediate casing to +/-2,000' and circulate cement to surface to get the Salt section behind pipe.

d. Production casing

We will run 7" x 5-1/2" production casing with a DV Tool at the bottom of the 7" (4700' +/-), then a crossover from 7" to 5-1/2" (4800' –TD). There will be no cement in the lateral, only from the stage tool and up hole into the intermediate casing with top of cement reaching approximately 1,500'.

Burnett proposes to run a multiple packer system on the 5-1/2" production casing which will cross over into the 7" casing string (no cement in the lateral). An external isolation packer will be set at or a few feet inside the lease offset limit with an additional external isolation packer set just above the Glorieta. No completion perforations or ports will be placed between the Glorieta isolation packer and the cement stage tool.

3. Cementing Program

BLM to be notified prior to all cementing and tag operations in order to observe the operation if desired.

a. 13 3/8" Surface Casing:

- Cement to surface
- 20 bbls fresh water spacer at 8.4 lbm/gal.
- Lead: 330 sx ExtendaCem – CZ 0.1250 lbm Poly-E-Flake. Fluid weight 13.5 lbm/gal, slurry yield 1.745 ft3/sx, total mixing fluid 9.18 gal/sx.
- Tail: 340 sx HalCem 2% Calcium Chloride – flake, fluid weight 14.8 lbm/gal, slurry yield 1.347 ft3/sx, total mixing fluid 6.39 gal/sx.
- Excess Cement: **100%**

If cement does not circulate to surface, BLM will be notified of same, and advised of the plan to bring the cement to surface so BLM may witness tagging and cementing. If surface pressures when circulating indicate cement is low in the annulus, temperature survey results will be reviewed with BLM representative to determine the remediation needed.

6. Proposed Mud Circulation System (Closed Loop System)

Depth	Mud Wt	Vis	Fluid Loss	Type System
0' - 720'	8.4 - 9.5		NC	Fresh Water
720' - 2000' MD	10.0 max		NC	Brine Water
2000' – TD MD	10.0 max		NC	Brine Water

The necessary mud products for weight addition and fluid loss control will be on location at all times.

Pason equipment will be used to monitor the mud system.

7. Logging, Coring and Testing program:

a. No cores or DSTs are planned at this time.

b. A mud logger will be on the well from 200' to TD.

c. No open hole logs will be run.

8. Potential Hazards:

No abnormal pressures or temperatures are expected. Lost circulation is expected in the surface hole and not expected in the production hole. Water flows can occur periodically at various depths in the production hole. All personnel will be familiar with the safe operation of the equipment being used to drill this well. The maximum anticipated bottom hole pressure is 2435#. This is based upon the following formula of .445 x BH ft. estimate. The anticipated bottom hole temperature is 105°F. This is based upon logs of drilled wells surrounding this well.

There is known H2S in this area. In the event that it is necessary to follow the H2S plan, a remote choke will be installed as required in Onshore Order 6. Refer to the attached H2S plan for details.

9. Anticipated Start Date and Duration of Operation

Road and location construction will begin after BLM has approved the APD and has approved the start of the location work. Anticipated spud date will be as soon as the location building work has been completed and the drilling rig is available to move to the location. Move in operations and drilling is expected to take approximately 25 days. If production casing is run, an additional 90 days would be required to complete the well and install the necessary surface equipment (pumping unit, electricity, flowline and storage facility) in order to place the well on production.

APD ID: 10400023880 **Submission Date:** 11/10/2017

Operator Name: BURNETT OIL COMPANY INCORPORATED

Well Name: PARTITION 24 FED IL **Well Number:** 1H

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

Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

P24FIL1H_Existing___Proposed_Roads_20171110102337.pdf

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

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

P24FIL1H_Existing___Proposed_Roads_20171110102447.pdf

New road type: RESOURCE

Length: 90 Feet **Width (ft.):** 20

Max slope (%): 3 **Max grade (%):** 2

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 14

New road access erosion control: Ditching will be done on both sides of the road the entire length of the road to control drainage. The ditch will have a minimum depth of one (1) foot below and a down sloping berm of six (6) inches above the ground level. All ditching will be completed as per BLM requirements.

New road access plan or profile prepared? NO

New road access plan attachment:

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:

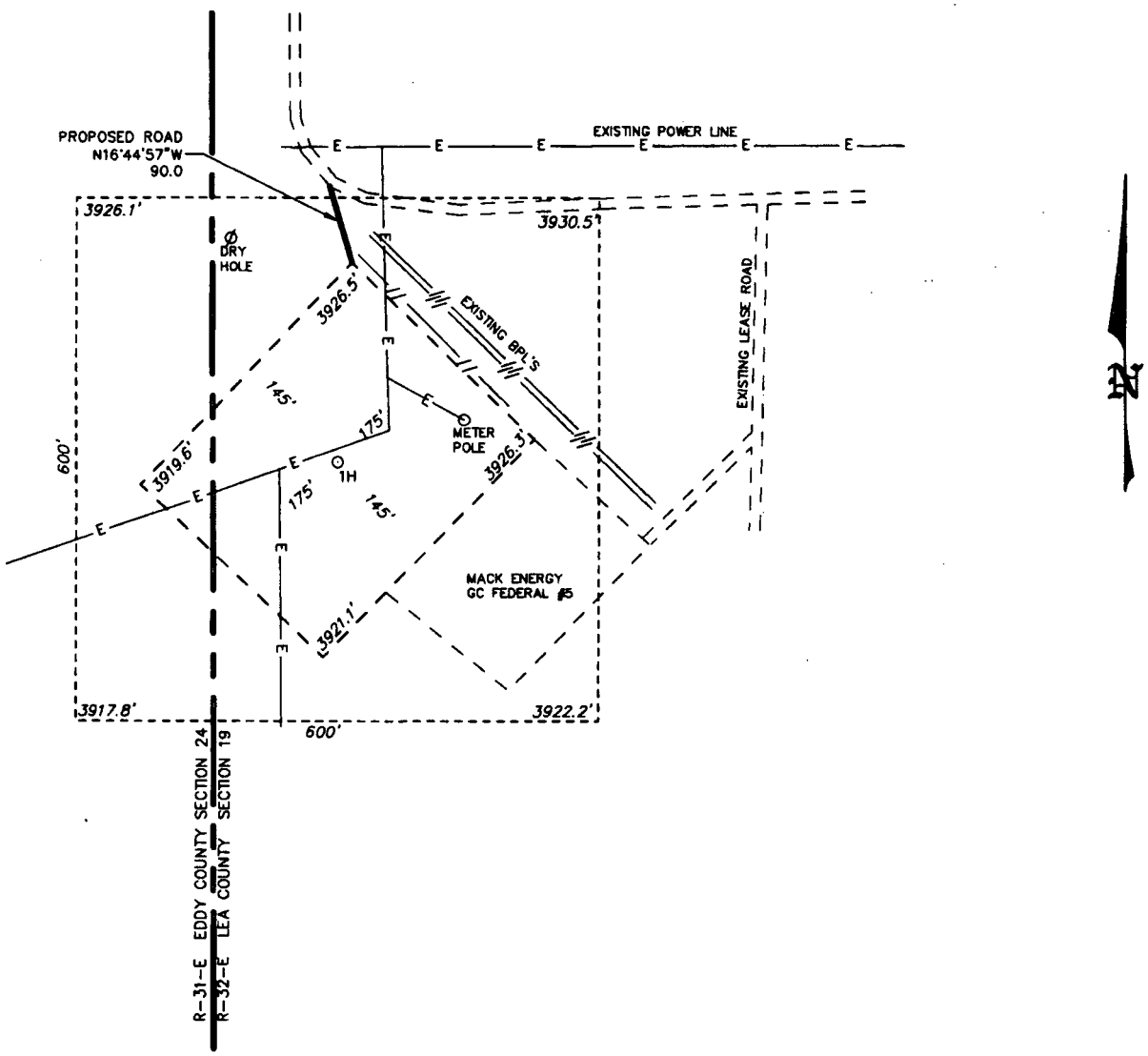
Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

SECTION 19, TOWNSHIP 17 SOUTH, RANGE 32 EAST, N.M.P.M.,

LEA COUNTY, **NEW MEXICO.**



BURNETT OIL COMPANY, INC.
PARTITION 24 FED IL 1H
ELEV. - 3923'

Lat - N 32.819264°
Long - W 103.814016°
NMSPCE- N 662172.8
E 700872.6
(NAD-83)
(NAVD-88)

MALJAMAR, NM IS ±4 MILES TO THE NORTHEAST OF LOCATION.

200 0 200 400 FEET

SCALE: 1" = 200'

Directions to Location:

FROM HIGHWAY 82 GO SOUTHEAST 0.9 MILES ON RIPPLE ROAD. THEN GO SOUTH ON LEASE ROAD 1975 FEET TO PROPOSED ROAD.

BURNETT OIL CO.

REF: PARTITION 24 FED IL 1H / WELL PAD TOPO

THE PARTITION 24 FED IL 1H LOCATED 2310' FROM THE SOUTH LINE AND 144' FROM THE WEST LINE OF SECTION 19, TOWNSHIP 17 SOUTH, RANGE 32 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO.

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W.O. Number: 33291	Drawn By: K. GOAD	Date: 09-19-2017	Survey Date: 4-10-2017	Sheet 1 of 1 Sheets

AFMSS

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

Bond Info Data Report

05/29/2018

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB000197

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: