

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.*5. Lease Serial No.
NMNM59383

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.
CARTEL FEDERAL SWD 29. API Well No.
30-015-2338910. Field and Pool or Exploratory Area
LAGUNA SALADO; ATOKA, NORTH11. County or Parish, State
EDDY COUNTY, NM**SUBMIT IN TRIPLICATE - Other instructions on page 2**1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other2. Name of Operator
MESQUITE SWD INC
Contact: MELANIE WILSON
E-Mail: mjp1692@gmail.com3a. Address
PO BOX 1479
CARLSBAD, NM 882213b. Phone No. (include area code)
Ph: 575-914-14614. Location of Well (Footage, Sec., T., R., M., or Survey Description)
Sec 5 T23S R29E Mer NMP SWNE 1856FNL 2080FEL**12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

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

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

Mesquite SWD, Inc. requests permission to sidetrack and deepen this well to complete it as a Devonian SWD.

Attachments:
Current & proposed well diagrams
Sidetrack drilling plan
BOP and choke manifold diagrams
Casing assumptions worksheet
C-102

RECEIVED

AUG 07 2018

DISTRICT II-ARTESIA O.C.D.

GC 8-10-18
Accepted for record - NMOCDSEE ATTACHED FOR
CONDITIONS OF APPROVAL

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

Electronic Submission #426906 verified by the BLM Well Information System
For MESQUITE SWD INC, sent to the Carlsbad
Committed to AFMSS for processing by PRISCILLA PEREZ on 07/13/2018 ()

Name (Printed/Typed) MELANIE WILSON

Title REGULATORY ANALYST

Signature (Electronic Submission)

Date 07/10/2018

THIS SPACE FOR FEDERAL OR STATE OFFICE USEApproved By Mustafa Haguel

Title Petroleum Engineer

Date 8-6-2018

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

Carlsbad Field Office

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

(Instructions on page 2)

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

RNP 8-16-18

COA- C108 Approved.

— Denied by Santa Fe- 8-20-18.
Re-entry To Devonian Not Permitted.

RECEIVED

DISTRICT I
1825 N. FRENCH DR., HOBBS, NM 88240
Phone: (575) 393-5181 Fax: (575) 393-0720

DISTRICT II
811 S. FIRST ST., ARTESIA, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

DISTRICT III
1000 RIO BRAZOS RD., AZTEC, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. ST. FRANCIS DR., SANTA FE, NM 87505
Phone: (505) 476-3480 Fax: (505) 476-3482

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505
AUG 6 2018

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-23389	Pool Code 97869	Pool Name SWD;DEVONIAN-SILURIAN
Property Code 320811	Property Name CARTHEL FEDERAL SWD	Well Number 2
OGRID No. 161968	Operator Name MESQUITE SWD	Elevation 3005.5'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	5	23-S	29-E		1856	NORTH	2080	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

LOT 4 41.30 Ac	LOT 3 41.14 Ac	LOT 2 40.98 Ac	LOT 1 40.79 Ac
NAD 83 NME SURFACE LOCATION Y=486360.0 N X=642714.5 E LAT.=32.336648° N LONG.=104.005094° W		1856'	2080'
S.L.			

OPERATOR CERTIFICATION

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

Melanie J. Wilson 03/04/2018
Signature Date

Melanie J Wilson
Printed Name

mjp1692@gmail.com
E-mail Address

SURVEYOR CERTIFICATION

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

JANUARY 30, 2018
Date of Survey

Signature & Seal of Professional Surveyor



Chad Harcrow 2/2/18
Certificate No. CHAD HARCROW 17777
W.O. # 18-76 DRAWN BY: JH

RWP
8-16-18
8-20-18 Denied.

Mesquite SWD, Inc.
Carthel Federal SWD #2
 API #30-015-23389
 1856' FNL & 2080' FEL
 Section 5, T23S, R29E
 Eddy County, New Mexico

Proposed Drilling Program

1. Geologic Formation

TVD of Target	15330'	Pilot hole depth	N/A
MD at TD	15330'	Deepest expected fresh water	N/A

Formation	TVD	Water/Mineral Bearing/Target Zone	Hazards
Rustler	720'	Water	
Top of Salt	1060'	Salt	
Base of Salt	2340'	Salt	
Delaware	2920'	Oil/Gas	
Bone Spring	6568'	Oil/Gas	
Wolfcamp	9860'	Oil/Gas	
Morrow	12080'	Gas	
Devonian	14130'	Target Zone	
Montoya	15320'		
TD	15330'		

2. Casing Program

Hole Size	Casing Interval		Casing Size	Weight (lbs)	Grade	Conn	SF Collapse	SF Burst	SF Body
	From	To							
26"	0	496'	20"	94	H40	BTC	Existing	Existing	Existing
17.5"	0	2863'	13.375"	54	J55	LTC	Existing	Existing	Existing
12.25"	0	10187'	9.625"	40	N80	HC	Existing	Existing	Existing
8.75"	9998'	12450'	7"	29	C/T95	*	Existing	Existing	Existing
*	0	11785'	4.5"	13.5	N80	*	Existing	Existing	Existing
8.75"	9000'	14130'	7.625"	39	P110	FJM	1.23	1.18	3.4
6.25"	Open	Hole							

*NM OCD well records appear incomplete. If still in hole, we plan to cut and pull 4.5" casing at approximately 9400'.

SEE
COA

Propose to set cement plug across perforations and set cement plug 9200-9400'. Cut and pull 4.5" casing at 9400'. Set CIBP. Set whipstock and sidetrack at 9380'. Drill to top of Devonian and run 7 5/8" 39# flush joint liner. Drill open hole disposal interval.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes, attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within designated 4 string boundary?	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	Y
If yes, are the first three strings cemented to surface?	Y
Is 2nd string set 100' to 600' below the base of salt?	Y
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

3. Cementing Program

Casing	Sks	Wt lb/gal	Yld ft ³ /sk	Slurry Description	TOC	% Excess
Surface	1375	Existing			Surface/1"	
1st Intermediate	430	Existing			Surface/Circ	
2nd Intermediate	3275	Existing			Surface/Circ	
Production (4.5")	225	Existing			9570'/CBL	
Production (7.625")	390	13.5	1.465	Class H w/ 0.5% Gas Stop	9000'	30%

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
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BOP Installed and tested before drilling which hole?	Size	Min. Required WP	Type	X	Tested to:
8 3/4"	13-5/8"	10M	Annular	X	5000 psi
			Blind Ram		10M
			Pipe Ram	X	
			Double Ram	X	
			Other:		

BOP/BOPE will be tested by an independent service company to 260 psi low and the high pressure indicated above per Onshore Order 2 Requirements. The system may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

Y	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i
Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart. N Are anchors required by manufacturer?
N	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
9380'	14130'	Cut brine	12 - 13.5	38 - 45	8 - 10
14130'	15330'	Fresh water	8.4 - 8.6	28	No control

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
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6. Logging and Testing Procedures

Logging and Testing Procedures	
Y	Will run GR/CNL from TD to KOP. Stated logs run will be in the Completion Report and submitted to the BLM
Y	No logs are planned based on well control or offset log information
N	Drill stem test? If yes, explain
N	Coring? If yes, explain

Additional logs planned		
N	Resistivity	
N	Density	
Y	CBL	7 5/8" Production liner
Y	Mud log	Sidetrack to TD
N	PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure	7200 PSI at 15330' TVD
Abnormal Temperature	No Anticipated BHT 202°

8. Other Facets of Operation

Attachments	
X	H2S Plan
X	BOP & Choke Diagrams
X	Directional Plan
X	Request for Flex Hose Variance

Casing Assumptions Worksheet

Hole Size	Casing Interval		Casing Size	Weight (lbs)	Grade	Conn	SF Collapse	SF Burst	SF Body
	From	To							
26"	0	496'	20"	94	H40	BTC	Existing	Existing	Existing
17.5"	0	2863'	13.375"	54	J55	LTC	Existing	Existing	Existing
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8.75"	9000'	14130'	7.625"	39	P110	FJM	1.23	1.18	3.4
6.25"	Open	Hole							

Mesquite SWD

Eddy County, NM (NAD 27)

Sec 5-T23S-R29E

Carthel Fed #2

Wellbore #1

Plan: Plan #1

Standard Planning Report

06 March, 2018

Planning Report

Database:	EDM 5000.1	Local Co-ordinate Reference:	Well Carthel Fed #2
Company:	Mesquite SWD	TVD Reference:	KB=32 @ 3035.00ft
Project:	Eddy County, NM (NAD 27)	MD Reference:	KB=32 @ 3035.00ft
Site:	Sec 5-T23S-R29E	North Reference:	Grid
Well:	Carthel Fed #2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Project	Eddy County, NM (NAD 27)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Sec 5-T23S-R29E			
Site Position:		Northing:	644,301.03 usft	Latitude: 32.771000
From:	Lat/Long	Easting:	580,778.71 usft	Longitude: -104.070530
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence: 0.14 °

Well	Carthel Fed #2			
Well Position	+N/-S	0.00 ft	Northing: 644,301.03 usft	Latitude: 32.771000
	+E/-W	0.00 ft	Easting: 580,778.71 usft	Longitude: -104.070530
Position Uncertainty	0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level: 3,003.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	3/6/2018	7.47	60.55	48,139

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	160.00

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
9,380.00	0.00	0.00	9,380.00	0.00	0.00	0.00	0.00	0.00	0.00	
9,630.00	5.00	160.00	9,629.68	-10.24	3.73	2.00	2.00	0.00	160.00	
11,674.60	5.00	160.00	11,666.50	-177.70	64.68	0.00	0.00	0.00	0.00	
11,924.60	0.00	0.00	11,916.19	-187.94	68.40	2.00	-2.00	0.00	180.00	
15,330.00	0.00	0.00	15,321.59	-187.94	68.40	0.00	0.00	0.00	0.00	

Planning Report

Database: EDM 5000.1
 Company: Mesquite SWD
 Project: Eddy County, NM (NAD 27)
 Site: Sec 5-T23S-R29E
 Well: Carthel Fed #2
 Wellbore: Wellbore #1
 Design: Plan #1

Local Co-ordinate Reference: Well Carthel Fed #2
 TVD Reference: KB=32 @ 3035.00ft
 MD Reference: KB=32 @ 3035.00ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00

Planning Report

Database: EDM 5000.1
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 Project: Eddy County, NM (NAD 27)
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 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	0.00	0.00
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	0.00	0.00
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	0.00	0.00
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	0.00	0.00
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	0.00	0.00
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	0.00	0.00
7,800.00	0.00	0.00	7,800.00	0.00	0.00	0.00	0.00	0.00	0.00
7,900.00	0.00	0.00	7,900.00	0.00	0.00	0.00	0.00	0.00	0.00
8,000.00	0.00	0.00	8,000.00	0.00	0.00	0.00	0.00	0.00	0.00
8,100.00	0.00	0.00	8,100.00	0.00	0.00	0.00	0.00	0.00	0.00
8,200.00	0.00	0.00	8,200.00	0.00	0.00	0.00	0.00	0.00	0.00
8,300.00	0.00	0.00	8,300.00	0.00	0.00	0.00	0.00	0.00	0.00
8,400.00	0.00	0.00	8,400.00	0.00	0.00	0.00	0.00	0.00	0.00
8,500.00	0.00	0.00	8,500.00	0.00	0.00	0.00	0.00	0.00	0.00
8,600.00	0.00	0.00	8,600.00	0.00	0.00	0.00	0.00	0.00	0.00
8,700.00	0.00	0.00	8,700.00	0.00	0.00	0.00	0.00	0.00	0.00
8,800.00	0.00	0.00	8,800.00	0.00	0.00	0.00	0.00	0.00	0.00
8,900.00	0.00	0.00	8,900.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000.00	0.00	0.00	9,000.00	0.00	0.00	0.00	0.00	0.00	0.00
9,100.00	0.00	0.00	9,100.00	0.00	0.00	0.00	0.00	0.00	0.00
9,200.00	0.00	0.00	9,200.00	0.00	0.00	0.00	0.00	0.00	0.00
9,300.00	0.00	0.00	9,300.00	0.00	0.00	0.00	0.00	0.00	0.00
9,380.00	0.00	0.00	9,380.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP BLD 2°/100'									
9,400.00	0.40	160.00	9,400.00	-0.07	0.02	0.07	2.00	2.00	0.00
9,500.00	2.40	160.00	9,499.97	-2.36	0.86	2.51	2.00	2.00	0.00
9,600.00	4.40	160.00	9,599.78	-7.93	2.89	8.44	2.00	2.00	0.00
9,630.00	5.00	160.00	9,629.68	-10.24	3.73	10.90	2.00	2.00	0.00
EOB HLD 5° Inc.									
9,700.00	5.00	160.00	9,699.42	-15.98	5.82	17.00	0.00	0.00	0.00
9,800.00	5.00	160.00	9,799.04	-24.17	8.80	25.72	0.00	0.00	0.00
9,900.00	5.00	160.00	9,898.66	-32.36	11.78	34.43	0.00	0.00	0.00
10,000.00	5.00	160.00	9,998.28	-40.55	14.76	43.15	0.00	0.00	0.00
10,100.00	5.00	160.00	10,097.89	-48.74	17.74	51.86	0.00	0.00	0.00
10,200.00	5.00	160.00	10,197.51	-56.93	20.72	60.58	0.00	0.00	0.00

Planning Report

Database: EDM 5000.1
Company: Mesquite SWD
Project: Eddy County, NM (NAD 27)
Site: Sec 5-T23S-R29E
Well: Carthel Fed #2
Wellbore: Wellbore #1
Design: Plan #1

Local Co-ordinate Reference: Well Carthel Fed #2
TVD Reference: KB=32 @ 3035.00ft
MD Reference: KB=32 @ 3035.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,300.00	5.00	160.00	10,297.13	-65.12	23.70	69.30	0.00	0.00	0.00
10,400.00	5.00	160.00	10,396.75	-73.31	26.68	78.01	0.00	0.00	0.00
10,500.00	5.00	160.00	10,496.37	-81.50	29.66	86.73	0.00	0.00	0.00
10,600.00	5.00	160.00	10,595.99	-89.69	32.64	95.44	0.00	0.00	0.00
10,700.00	5.00	160.00	10,695.61	-97.88	35.62	104.16	0.00	0.00	0.00
10,800.00	5.00	160.00	10,795.23	-106.07	38.61	112.87	0.00	0.00	0.00
10,900.00	5.00	160.00	10,894.85	-114.26	41.59	121.59	0.00	0.00	0.00
11,000.00	5.00	160.00	10,994.47	-122.45	44.57	130.30	0.00	0.00	0.00
11,100.00	5.00	160.00	11,094.09	-130.64	47.55	139.02	0.00	0.00	0.00
11,200.00	5.00	160.00	11,193.71	-138.83	50.53	147.74	0.00	0.00	0.00
11,300.00	5.00	160.00	11,293.33	-147.02	53.51	156.45	0.00	0.00	0.00
11,400.00	5.00	160.00	11,392.95	-155.21	56.49	165.17	0.00	0.00	0.00
11,500.00	5.00	160.00	11,492.57	-163.40	59.47	173.88	0.00	0.00	0.00
11,600.00	5.00	160.00	11,592.19	-171.59	62.45	182.60	0.00	0.00	0.00
11,674.60	5.00	160.00	11,666.50	-177.70	64.68	189.10	0.00	0.00	0.00
DROP 2°/100'									
11,700.00	4.49	160.00	11,691.82	-179.67	65.39	191.20	2.00	-2.00	0.00
11,800.00	2.49	160.00	11,791.62	-185.39	67.48	197.29	2.00	-2.00	0.00
11,900.00	0.49	160.00	11,891.59	-187.84	68.37	199.90	2.00	-2.00	0.00
11,924.60	0.00	0.00	11,916.19	-187.94	68.40	200.00	2.00	-2.00	0.00
EOB HLD 0° Inc									
12,000.00	0.00	0.00	11,991.59	-187.94	68.40	200.00	0.00	0.00	0.00
12,100.00	0.00	0.00	12,091.59	-187.94	68.40	200.00	0.00	0.00	0.00
12,200.00	0.00	0.00	12,191.59	-187.94	68.40	200.00	0.00	0.00	0.00
12,300.00	0.00	0.00	12,291.59	-187.94	68.40	200.00	0.00	0.00	0.00
12,400.00	0.00	0.00	12,391.59	-187.94	68.40	200.00	0.00	0.00	0.00
12,500.00	0.00	0.00	12,491.59	-187.94	68.40	200.00	0.00	0.00	0.00
12,600.00	0.00	0.00	12,591.59	-187.94	68.40	200.00	0.00	0.00	0.00
12,700.00	0.00	0.00	12,691.59	-187.94	68.40	200.00	0.00	0.00	0.00
12,800.00	0.00	0.00	12,791.59	-187.94	68.40	200.00	0.00	0.00	0.00
12,900.00	0.00	0.00	12,891.59	-187.94	68.40	200.00	0.00	0.00	0.00
13,000.00	0.00	0.00	12,991.59	-187.94	68.40	200.00	0.00	0.00	0.00
13,100.00	0.00	0.00	13,091.59	-187.94	68.40	200.00	0.00	0.00	0.00
13,200.00	0.00	0.00	13,191.59	-187.94	68.40	200.00	0.00	0.00	0.00
13,300.00	0.00	0.00	13,291.59	-187.94	68.40	200.00	0.00	0.00	0.00
13,400.00	0.00	0.00	13,391.59	-187.94	68.40	200.00	0.00	0.00	0.00
13,500.00	0.00	0.00	13,491.59	-187.94	68.40	200.00	0.00	0.00	0.00
13,600.00	0.00	0.00	13,591.59	-187.94	68.40	200.00	0.00	0.00	0.00
13,700.00	0.00	0.00	13,691.59	-187.94	68.40	200.00	0.00	0.00	0.00
13,800.00	0.00	0.00	13,791.59	-187.94	68.40	200.00	0.00	0.00	0.00
13,900.00	0.00	0.00	13,891.59	-187.94	68.40	200.00	0.00	0.00	0.00
14,000.00	0.00	0.00	13,991.59	-187.94	68.40	200.00	0.00	0.00	0.00
14,100.00	0.00	0.00	14,091.59	-187.94	68.40	200.00	0.00	0.00	0.00
14,200.00	0.00	0.00	14,191.59	-187.94	68.40	200.00	0.00	0.00	0.00
14,300.00	0.00	0.00	14,291.59	-187.94	68.40	200.00	0.00	0.00	0.00
14,400.00	0.00	0.00	14,391.59	-187.94	68.40	200.00	0.00	0.00	0.00
14,500.00	0.00	0.00	14,491.59	-187.94	68.40	200.00	0.00	0.00	0.00
14,600.00	0.00	0.00	14,591.59	-187.94	68.40	200.00	0.00	0.00	0.00
14,700.00	0.00	0.00	14,691.59	-187.94	68.40	200.00	0.00	0.00	0.00
14,800.00	0.00	0.00	14,791.59	-187.94	68.40	200.00	0.00	0.00	0.00
14,900.00	0.00	0.00	14,891.59	-187.94	68.40	200.00	0.00	0.00	0.00
15,000.00	0.00	0.00	14,991.59	-187.94	68.40	200.00	0.00	0.00	0.00
15,100.00	0.00	0.00	15,091.59	-187.94	68.40	200.00	0.00	0.00	0.00
15,200.00	0.00	0.00	15,191.59	-187.94	68.40	200.00	0.00	0.00	0.00

Planning Report

Database: EDM 5000.1
 Company: Mesquite SWD
 Project: Eddy County, NM (NAD 27)
 Site: Sec 5-T23S-R29E
 Well: Carthel Fed #2
 Wellbore: Wellbore #1
 Design: Plan #1

Local Co-ordinate Reference: Well Carthel Fed #2
 TVD Reference: KB=32 @ 3035.00ft
 MD Reference: KB=32 @ 3035.00ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,300.00	0.00	0.00	15,291.59	-187.94	68.40	200.00	0.00	0.00	0.00
15,330.00	0.00	0.00	15,321.59	-187.94	68.40	200.00	0.00	0.00	0.00
TD at 15330.00									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Carthel Fed #2	0.00	0.00	0.00	0.00	0.00	644,301.03	580,778.71	32.771000	-104.070530
- plan hits target center									
- Circle (radius 200.00)									

Plan Annotations

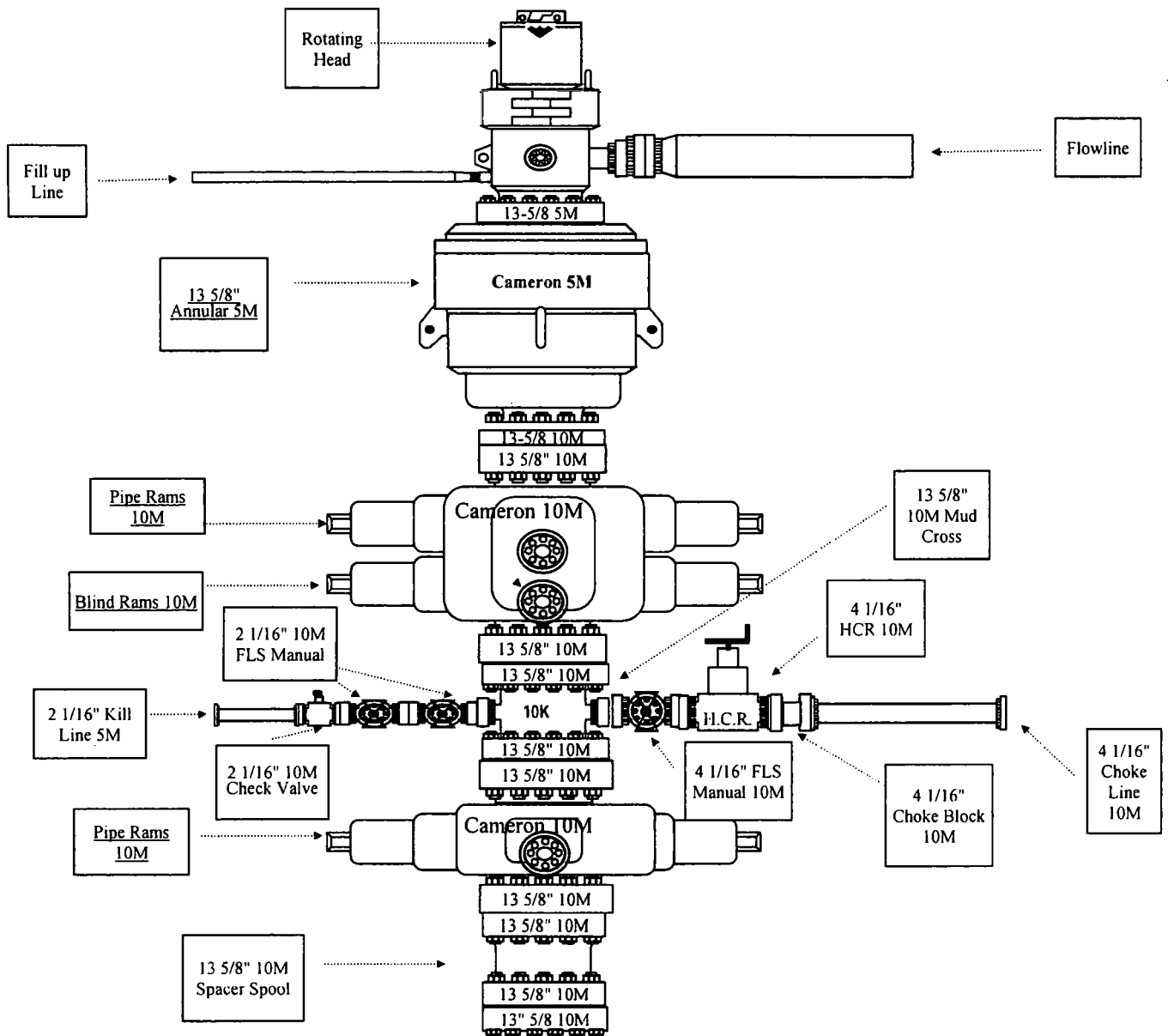
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
9,380.00	9,380.00	0.00	0.00	KOP BLD 2°/100'
9,630.00	9,629.68	-10.24	3.73	EOB HLD 5° Inc.
11,674.60	11,666.50	-177.70	64.68	DROP 2°/100'
11,924.60	11,916.19	-187.94	68.40	EOB HLD 0° Inc
15,330.00	15,321.59	-187.94	68.40	TD at 15330.00

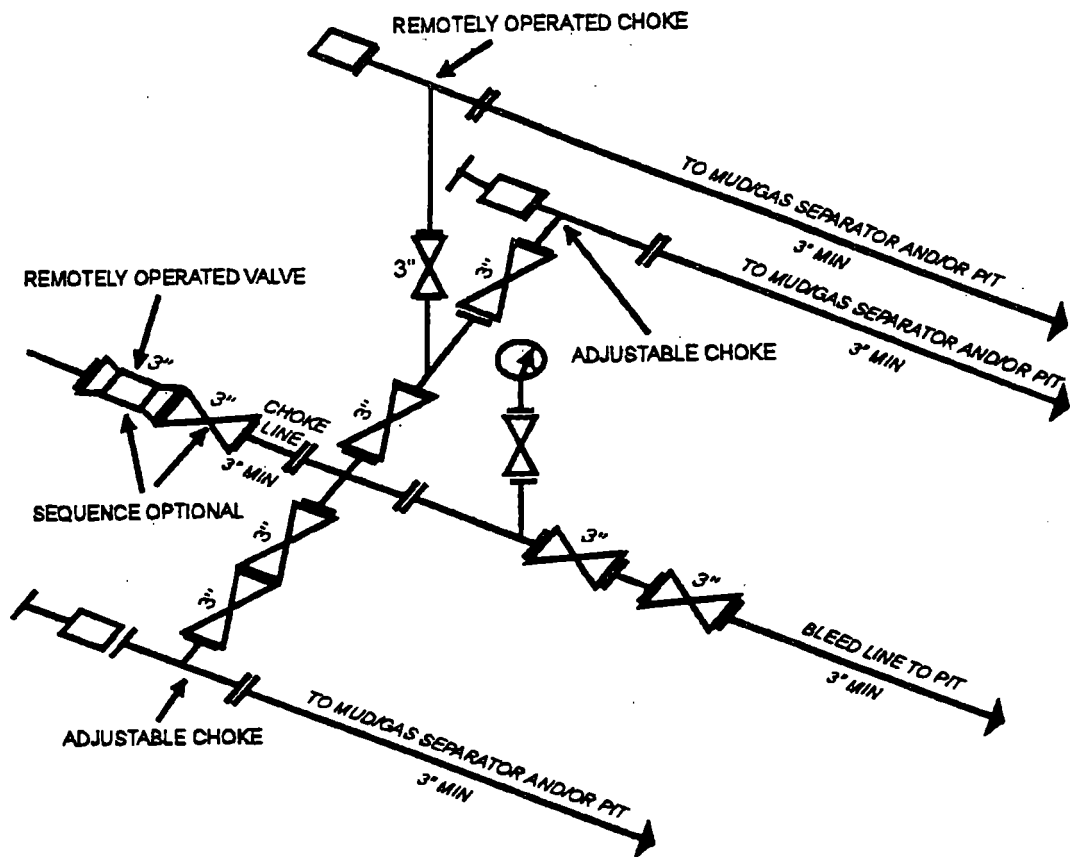
10M BOP with 5M Annular
Mesquite SWD, Inc.

Hole Sections Utilized

***12 1/4" Hole below 1st Intermediate Casing**

***8 1/2" - 6 1/4" Hole below 2nd Intermediate casing**





10M AND 15M CHOKE MANIFOLD EQUIPMENT - CONFIGURATION OF CHOKES MAY VARY
 [53 FR 49661, Dec. 9, 1988 and 54 FR 39528, Sept. 27, 1989]

MESQUITE SWD INC.

WELL NAME:

CARTHEL FED #2

API:

3001523389

SURFACE LOCATION:

SEC 5, T23S - R29E

FOOTAGE:

1856' FNL & 2080' FEL, UNIT G

COUNTY:

EDDY

STATE:

NM

PROPOSED WELL DIAGRAM

Surface Csg

Size: 20" 94# H-40 BTC
Set @: 496
Sxs cmt: 1070
Circ: Yes
TOC: Surf
Hole Size: 26"

Intermediate Csg

Size: 13-3/8" 54# J-55 LTC
Set @: 2863
Sxs cmt: 1000
Circ: Yes
TOC: Surf
Hole Size: 17-1/2"

Intermediate-2 Csg

Size: 9-5/8" 40# HC N80
Set @: 10187
Sxs cmt: 1800
Circ: Yes
Hole Size: 12-1/4"

Re-Entry Side - Track

Size: 7-5/8" 39# LTC
Set @: 9950
Sxs cmt: 0
Circ: Yes
Hole Size: ~~Inside Liner~~ 8 3/4"

Liner

Size: 7-5/8"
Weight: 39# P-110
Top: 9400
Bottom: 14130
Sxs cmt: 500
Circ: Yes
Hole Size: 8-3/4"

Tubing requirements:

7" 26 # P-110
Taper string to 5-1/2"
5-1/2" to top 14110

Open Hole

Interval: 14130-15330'
Hole Size: 6-1/4"

Lok- Set or equivalent approx 14,130'

KB: 3035'
GL: 3003'
MSL OF TD: -12300' est
32.771 N 104.07053 W
0

496

Rustler est 720'

T/salt est 1060'

B/salt est 2340'

2863

Del Mtn Group 2920'

Bone Springs est 6568'

TAPER STRING 7" TO 5-1/2" @
9200'

Exit with 7 - 5/8" @ 9480

WHIPSTOCK

9500

CIBP 9500'

9846

Wolfcamp 9860'

25 sx cmt plug
at 9860'

10187

11785

35 sx (90') cmt plug on
top of CIBP at 12119'

12119

Morrow est 12080'

CIBP 12119'

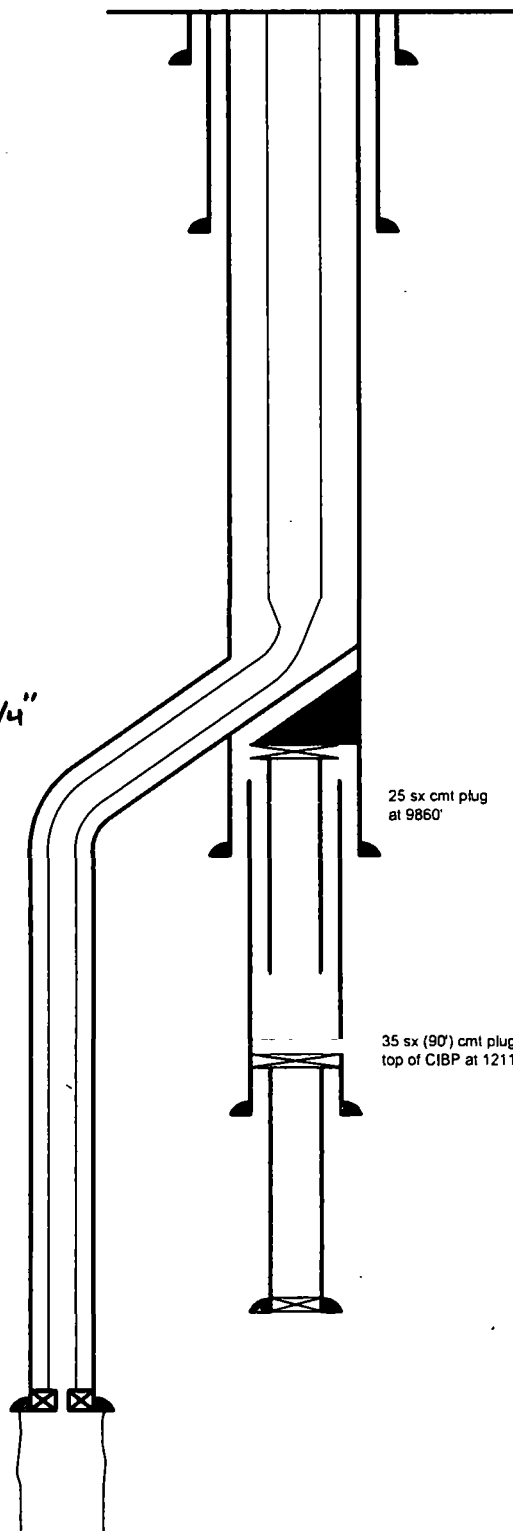
12298

13275

14130

Top of Silvro-Devonian est

Montoya 15320 est
TD



MESQUITE SWD INC.

WELL NAME:

CARTHEL FED #2

API:SURFACE LOCATION:FOOTAGE:COUNTY:STATE:

3001523389

SEC 5, T23S - R29E

1856' FNL & 2080' FEL, UNIT G

EDDY

NM

EXISTING WELL DIAGRAM

Surface Csg

Size: 20" 94# H-40 BTC
Set @: 496
Sxs cmt: 1070
Circ: Yes
TOC: Surf
Hole Size: 26"

Intermediate Csg

Size: 13-3/8" 54# J-55 LTC
Set @: 2863
Sxs cmt: 1000
Circ: Yes
TOC: Surf
Hole Size: 17-1/2"

Intermediate-2 Csg

Size: 9-5/8" 40# HC N80
Set @: 10187
Sxs cmt: 3275
Circ: Yes
Hole Size: 12-1/4"

Prod Liner

Size: 7" 39# P-110
Top: 9846
Set @: 12298
Sxs cmt: Yes
Circ: 8-3/4"
Hole Size:

Prod Casing

Size: 4-1/2"
Top: 9500
Set @: 14130
Sxs cmt: 500
Circ:
Hole Size:

KB: 3035'
GL: 3003'
MSL OF TD: -12300' est
32.771 N 104.07053 W
0

496

Rustler est 720'

T/salt est 1060'

B/salt est 2340'

2863

Del Mtn Group 2920'

Bone Springs est 6568'

9500

9846

Wolfcamp 9860'

10187

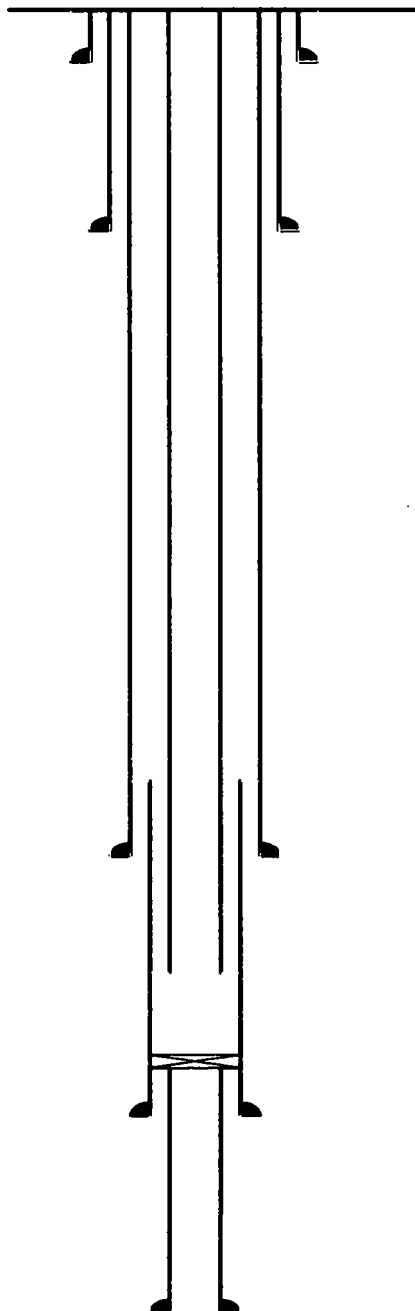
11785

Morrow est 12080'
12119 CIBP 12119'

12289

13275

Top of Silvro-Devonian est



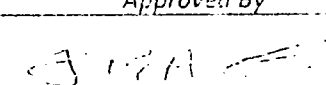
CASING TABLES

Dimensional & Grade Designators								
O D Size in.	Weight		NOM Wall in.	NOM I D in.	API Drift in.	Alternate Drift in.	Product	
	T6C lb/ft	P E lb/ft					Grade	Collapse Resistance psi
75.8	33.70	33.07	0.430	6.765	6.640	--	R95	7250
75.8	33.70	33.07	0.430	6.765	6.640	--	T95	7250
75.8	33.70	33.07	0.430	6.765	6.640	--	USS C95	7250
75.8	33.70	33.07	0.430	6.765	6.640	--	USS C100	7400
75.8	33.70	33.07	0.430	6.765	6.640	--	C110	7500
75.8	33.70	33.07	0.430	6.765	6.640	--	P110 SR16	7600
75.8	33.70	33.07	0.430	6.765	6.640	--	P110	7600
75.8	33.70	33.07	0.430	6.765	6.640	--	P110 HC	8100
75.8	33.70	33.07	0.430	6.765	6.640	--	P110 HP	8350
75.8	33.70	33.07	0.430	6.765	6.640	--	Q125	8350
75.8	33.70	33.07	0.430	6.765	6.640	--	Q125 HC	8450
75.8	33.70	33.07	0.430	6.765	6.640	--	Q125 HP	8700
75.8	33.70	33.07	0.430	6.765	6.640	--	USS140	8600
75.8	33.70	33.07	0.430	6.765	6.640	--	USS V150	8550
75.8	39.00	38.08	0.500	6.625	6.500	--	USS G780S	8500
75.8	39.00	38.08	0.500	6.625	6.500	--	L80	8500
75.8	39.00	38.08	0.500	6.625	6.500	--	L80 HC	8750
75.8	39.00	38.08	0.500	6.625	6.500	--	L80 HP	10000
75.8	39.00	38.08	0.500	6.625	6.500	--	N80 Type 1	8500
75.8	39.00	38.08	0.500	6.625	6.500	--	N80	8500
75.8	39.00	38.08	0.500	6.625	6.500	--	N80 HC	8500
75.8	39.00	38.08	0.500	6.625	6.500	--	N80 HP	10000
75.8	39.00	38.08	0.500	6.625	6.500	--	C90	8500
75.8	39.00	38.08	0.500	6.625	6.500	--	USS C90	8500
75.8	39.00	38.08	0.500	6.625	6.500	--	R95	10000
75.8	39.00	38.08	0.500	6.625	6.500	--	T95	10000
75.8	39.00	38.08	0.500	6.625	6.500	--	USS T95	10000
75.8	39.00	38.08	0.500	6.625	6.500	--	USS C100	10300
75.8	39.00	38.08	0.500	6.625	6.500	--	C110	10300
75.8	39.00	38.08	0.500	6.625	6.500	--	P110 SR16	11000
75.8	39.00	38.08	0.500	6.625	6.500	--	P110	11000
75.8	39.00	38.08	0.500	6.625	6.500	--	P110 HC	12100
75.8	39.00	38.08	0.500	6.625	6.500	--	P110 HP	13100
75.8	39.00	38.08	0.500	6.625	6.500	--	Q125	12000
75.8	39.00	38.08	0.500	6.625	6.500	--	Q125 HC	12500
75.8	39.00	38.08	0.500	6.625	6.500	--	Q125 HP	13750
75.8	39.00	38.08	0.500	6.625	6.500	--	USS140	12500
75.8	39.00	38.08	0.500	6.625	6.500	--	USS V150	13400
75.8	42.80	42.43	0.562	6.501	6.375	--	USS G780S	10800
75.8	42.80	42.43	0.562	6.501	6.375	--	L80	10,810
75.8	42.80	42.43	0.562	6.501	6.375	--	L80 HC	11100
75.8	42.80	42.43	0.562	6.501	6.375	--	L80 HP	11700
75.8	42.80	42.43	0.562	6.501	6.375	--	N80 Type 1	10800
75.8	42.80	42.43	0.562	6.501	6.375	--	N80	10,810
75.8	42.80	42.43	0.562	6.501	6.375	--	N80 HC	11700

Hose Assembly & Test Report

General Information		Hose Specifications	
Customer	BOP RAM	Hose Assembly Type	Choke + K-11
Date Assembled	12/19/17	Certification	API 7K
Location Assembled	OKC	Hose Grade	M140
Sales Order #	356141	Hose Working Pressure	10,000
Customer Purchase Order #	28. ARMOR	Hose Lot #	N/A
Hose Assembly Serial #	438413	Hose Date Code	N/A
Pick Ticket Line Item	0010	Hose I.D. (Inches)	4.562
Hose Assembly Length (Feet and Inches)	32.5 FEET	Hose O.D. (Inches)	6.64
Contact Information Phone #		Armor (yes/no)	YES
Fittings			
End A		End B	
Stem (Part and Revision #)	24.0 x 64 W8	Stem (Part and Revision #)	
Stem (Heat #)	MM17103370	Stem (Heat #)	
Stem (Rockwell Hardness HRB #)		Stem (Rockwell Hardness HRB #)	
Ferrule (Part and Revision #)	254.0 x 6370	Ferrule (Part and Revision #)	
Ferrule (Heat #)	60860852	Ferrule (Heat #)	
Ferrule (Rockwell Hardness HRB #)		Ferrule (Rockwell Hardness HRB #)	
Connection i.e. Flange, Hammer Union (Part #)	4-1/4 10K	Connection i.e. Flange, Hammer Union (Part #)	
Connection i.e. Flange, Hammer Union (Heat #)		Connection i.e. Flange, Hammer Union (Heat #)	
Nut (Part #)		Nut (Part #)	
Nut (Heat #)		Nut (Heat #)	
Stress Relief #		Stress Relief #	
Welding #		Welding #	
X-ray #		X-ray #	
Assembly Information			
End A		End B	
Skive O.D. (Inches)	6.13	Skive O.D. (Inches)	
Swager Dies (1st pass)	6.87	Swager Dies (1st pass)	
Swager Dies (2nd pass)	6.62	Swager Dies (2nd pass)	
Final Swage O.D. (Inches)	6.65	Final Swage O.D. (Inches)	
Compression % (See Crimp Calculator)	22	Compression % (See Crimp Calculator)	
Temperature Gun Reading on Wire of Hose after Cut (Hose is to be cut with Water and Biokool coolant 20/20)			
Swaged By	Z. TELLMAN		
Hydrostatic Test Requirements			
Test Pressure (psi)	10,000	Hold Time (minutes)	21 1/2
Tested By	Z. TELLMAN	Date Tested	12/19/17
This is to certify that the above Hose Assembly has been satisfactorily tested in accordance with MHSI procedure 8.2.4.2			
Final Verification			
Actual Length	☒ Yes ☐ No	Hammer Unions	☐ Yes ☒ No
Lifting Collars	☒ Yes ☐ No	Safety Clamps	☐ Yes ☒ No
Customer or Third Party Witness	Customer or Third Party Witnessed By:		
Yes ☒ No ☐			

Hose Inspection Report

General Information		Hose Specifications	
Customer	BOP RAM	Hose Assembly Type	CHOKE & KILL
Date Assembled	12/19/2017	Certification	API 7K/FSL Level 2
Location Assembled	OKC	Hose Grade	MUD
Sales Order #	356141	Hose Working Pressure	10000
Customer Purchase Order #	RE-ARMOR	Hose Lot #	N/A
Hose Assembly Serial #	438413	Hose Date Code	N/A
Pick Ticket Line Item	0010	Hose I.D. (Inches)	4"
Hose Assembly Length (Feet & Inches)	32.5'	Hose O.D. (Inches)	6.64
Contact Information Phone #	580-772-0250	Armor (yes/no)	YES
Fittings			
End A		End B	
Stem (Part and Revision #)	R4.0X64WB	Stem (Part and Revision #)	
Stem (Heat #)	MM17103370	Stem (Heat #)	
Stem (Rockwell Hardness HRB #)		Stem (Rockwell Hardness HRB #)	
Ferrule (Part and Rev. #)	RF4.0X6370	Ferrule (Part and Rev. #)	
Ferrule (Heat #)	60860852	Ferrule (Heat #)	
Ferrule (Rockwell Hardness HRB #)		Ferrule (Rockwell Hardness HRB #)	
Connection i.e., Flange, Hammer Union (Part #)	4-1/16 10K	Connection i.e., Flange, Hammer Union (Part #)	
Connection i.e., Flange, Hammer Union (Heat#)		Connection i.e., Flange, Hammer Union (Heat#)	
Nut (Part #)		Nut (Part #)	
Nut (Heat #)		Nut (Heat #)	
Stress Relief #		Stress Relief #	
Welding #		Welding #	
X-ray #		X-ray #	
Common Extras			
Cables (yes/no)	NO	Safety Clamps (yes/no)	NO
Chains (yes/no)	NO	Safety Clamps Patches (yes/no)	YES
Lifting Collars (yes/no)	NO	Safety Clamps Protection (yes/no)	NO
Thread Protectors (yes/no)	YES	Customer Label (is it attached to ferrule?)	YES
Hydrostatic Test Requirements		Assembly Information	
Hose Tested (yes/no)	YES	Swaged By	Z.TILLMAN
Test Pressure:	10,000	Noted Damage:	
Comments:			
Date Tested	Tested By		Approved By
12/19/2017			



Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Certificate

General Information		Hose Specifications	
Customer	BOP RAM	Hose Assembly Type	Mud & Cement
MWH Sales Representative	JAMES HAWKINS	Certification	API 7K/FSL LEVEL2
Date Assembled	12/19/2017	Hose Grade	MUD
Location Assembled	OKC	Hose Working Pressure	10000
Sales Order #	356141	Hose Lot # and Date Code	N/A
Customer Purchase Order #	RE-ARMOR	Hose I.D. (Inches)	4"
Assembly Serial # (Pick Ticket #)	438413	Hose O.D. (Inches)	6.64
Hose Assembly Length	32.5'	Armor (yes/no)	YES
Fittings			
End A		End B	
Stem (Part and Revision #)	R4.0X64WB	Stem (Part and Revision #)	
Stem (Heat #)	MM17103370	Stem (Heat #)	
Ferrule (Part and Revision #)	RF4.0X6370	Ferrule (Part and Revision #)	
Ferrule (Heat #)	60860852	Ferrule (Heat #)	
Connection - Flange Hammer Union Part	4-1/16 10K	Connection (Part #)	
Connection (Heat #)		Connection (Heat #)	
Nut (Part #)		Nut (Part #)	
Nut (Heat #)		Nut (Heat #)	
Dies Used	6.62	Dies Used	
Hydrostatic Test Requirements			
Test Pressure (psi)	10,000	Hose assembly was tested with ambient water temperature.	
Test Pressure Hold Time (minutes)	21 1/4		
Date Tested	Tested By	Approved By	
12/19/2017			



Midwest Hose
& Specialty Inc.

Certificate of Conformity

Customer: BOP RAM	Customer P.O. # RI-441-146
Sales Order # 356141	Date Assembled 12/14/2017

Specifications

Hose Assembly Type: Mud & Cement	Fig. # RE-1
Assembly Serial # 438413	Hose Lot # and Trace # N/A
Hose Working Pressure (psi) 10000	Test Pressure 10000
Hose Assembly Description:	CK64-SS-10K-6410K-SS-00FT-0, 10FTERS-10000

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

Supplier:
Midwest Hose & Specialty, Inc.
3312 S I-35 Service Rd
Oklahoma City, OK 73129

Comments:

Approved By	Date
	12/14/2017



Midwest Hose
& Specialty, Inc.

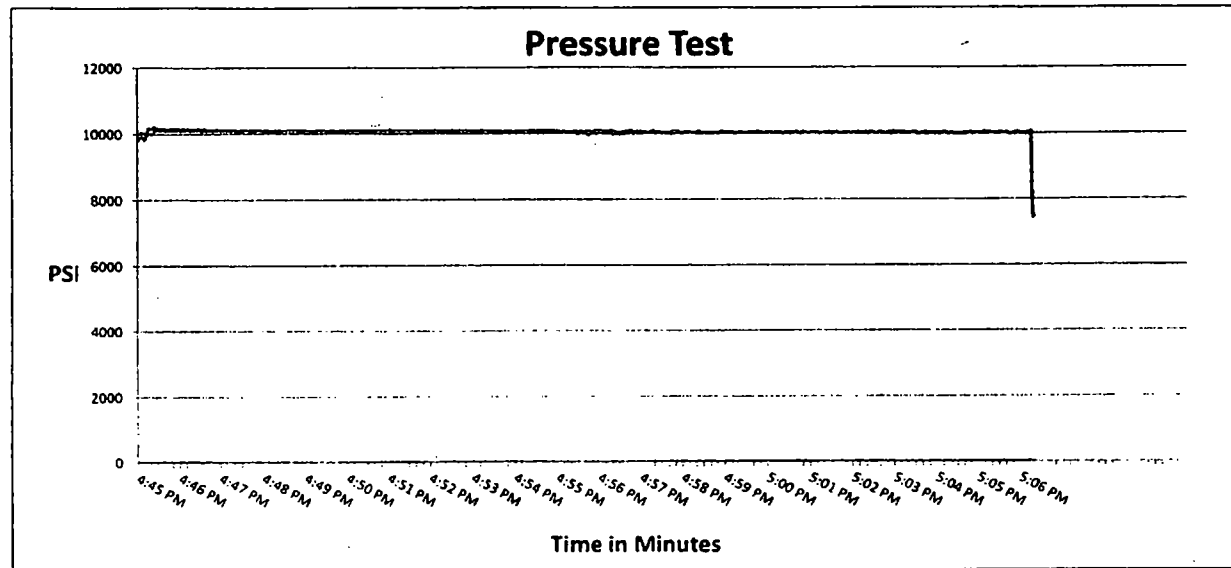
Internal Hydrostatic Test Graph

December 19, 2017

Customer: Bop Ram

Pick Ticket #: 438413

Hose Specifications		Verification	
Hose Type	Length	Type of Fitting	Coupling Method
Ck	32.5'	4-1/16 10X	Swage
I.D.	O.D.	Die Size	Final O.D.
4"	6.13"	6.62"	6.65"
Working Pressure	Burst Pressure	Hose Serial #	Hose Assembly Serial #
10000 PSI	Standard Safety Multiplier Applies	N/A	438413



Test Pressure
10000 PSI

Time Held at Test Pressure
21 1/4 Minutes

Actual Burst Pressure

Peak Pressure
10297 PSI

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

Tested By: Zach Tillman

Approved By: James Hawkins

[Signature]

Mesquite SWD, Inc. Well Control Plan

A. Component and Preventer Compatibility Table

Component	OD	Preventer	RWP
Drill Pipe	5"	Upper VBR: 3.5 – 5.5 Lower VBR: 3.5 – 5.5	10M
Heavyweight Drill Pipe	5"	Upper VBR: 3.5 – 5.5 Lower VBR: 3.5 – 5.5	10M
Drill Collars & MWD Tools	6 1/4"	Upper VBR: 3.5 – 5.5 Lower VBR: 3.5 – 5.5	10M
Mud Motor	6 1/4"	Upper VBR: 3.5 – 5.5 Lower VBR: 3.5 – 5.5	10M
Production Casing	5 1/2"	Upper VBR: 3.5 – 5.5 Lower VBR: 3.5 – 5.5	10M
All	0 – 13 5/8"	Annular	5M
Open Hole		Brind Rams	10M

B. Well Control Procedures

- I. General Procedures While Drilling:
 - a. Sound alarm – alert crew
 - b. Space out drill string
 - c. Shut down pumps and stop rotary
 - d. Open HCR
 - e. Shut well in, utilizing upper VBRs
 - f. Close choke
 - g. Confirm shut in
 - h. Notify rig manager and Mesquite SWD, Inc. company representative
 - i. Call Mesquite SWD, Inc. engineer
 - j. Read and record:
 - i. Shut in drill pressure and shut in casing pressure
 - ii. Pit gain
 - iii. Time
 - k. Regroup, identify forward plan

- II. General Procedures While Tripping:
 - a. Sound alarm – alert crew
 - b. Stab full opening safety valve and close
 - c. Space out drill string
 - d. Open HCR
 - e. Shut well in, utilizing upper VBRs
 - f. Close choke
 - g. Confirm shut in
 - h. Notify rig manager and Mesquite SWD, Inc. company representative
 - i. Call Mesquite SWD, Inc. engineer
 - j. Read and record:
 - i. Shut in drill pressure and shut in casing pressure
 - ii. Pit gain
 - iii. Time
 - k. Regroup, identify forward plan

Mesquite SWD, Inc.
Well Control Plan

III. General Procedures While Running Casing:

- a. Sound alarm – alert crew
- b. Stab full opening safety valve and close
- c. Space out drill string
- d. Open HCR
- e. Shut well in, utilizing upper VBRs
- f. Close choke
- g. Confirm shut in
- h. Notify rig manager and Mesquite SWD, Inc. company representative
- i. Call Mesquite SWD, Inc. engineer
- j. Read and record:
 - i. Shut in drill pressure and shut in casing pressure
 - ii. Pit gain
 - iii. Time
- k. Regroup, identify forward plan

IV. General Procedures With No Pipe in Hole (Open Hole):

- a. Sound alarm – alert crew
- b. Open HCR
- c. Shut well in with blind rams
- d. Close choke
- e. Confirm shut in
- f. Notify rig manager and Mesquite SWD, Inc. company representative
- g. Call Mesquite SWD, Inc. engineer
- h. Read and record:
 - i. Shut in drill pressure and shut in casing pressure
 - ii. Pit gain
 - iii. Time
- i. Regroup, identify forward plan

V. General Procedures While Pulling BHL Through BOP Stack:

- 1. Prior to pulling last joint of drill pipe through stack
 - A. Perform flow check and if flowing:
 - a. Sound alarm – alert crew
 - b. Stab full opening safety valve and close
 - c. Space out drill string with tool joint just beneath upper pipe ram
 - d. Open HCR
 - e. Shut well in utilizing upper VBRs
 - f. Close choke
 - g. Confirm shut in
 - h. Notify rig manager and Mesquite SWD, Inc. company representative
 - i. Call Mesquite SWD, Inc. engineer
 - j. Read and record:
 - i. Shut in drill pressure and shut in casing pressure
 - ii. Pit gain
 - iii. Time
 - k. Regroup, identify forward plan

Mesquite SWD, Inc.
Well Control Plan

2. With BHL in the BOP stack and compatible ram preventer and pipe combo immediately available.
 - a. Sound alarm – alert crew
 - b. Stab full opening safety valve and close
 - c. Space out drill string with tool joint just beneath upper pipe ram
 - d. Open HCR
 - e. Shut well in utilizing upper VBRs
 - f. Close choke
 - g. Confirm shut in
 - h. Notify rig manager and Mesquite SWD, Inc. company representative
 - i. Call Mesquite SWD, Inc. engineer
 - j. Read and record:
 - i. Shut in drill pressure and shut in casing pressure
 - ii. Pit gain
 - iii. Time
 - k. Regroup, identify forward plan
3. With BHA in the BOP stack and no compatible ram preventer and pipe combo immediately available
 - a. Sound alarm – alert crew
 - b. If possible to pick up high enough, pull string clear of the stack and follow Open Hole scenario (III)
 - c. If impossible to pick up high enough to pull the string clear of the stack:
 - i. Stab crossover, make up one joint/stand of drill pipe and full opening safety valve and close
 - ii. Space out drill string with tool joint just beneath the upper pipe ram
 - iii. Open HCR
 - iv. Shut in utilizing upper VBRs
 - v. Close choke
 - vi. Confirm shut in
 - vii. Notify rig manager and Mesquite SWD, Inc. company representative
 - viii. Read and record:
 1. Shut in drill pipe pressure and shut in casing pressure
 2. Pit gain
 3. Time
 - d. Regroup and identify forward plan

**** If annular is used to shut in well and pressure build to or is expected to get to 50% of RWP, confirm space-out and swap to upper VBRs for shut in.**

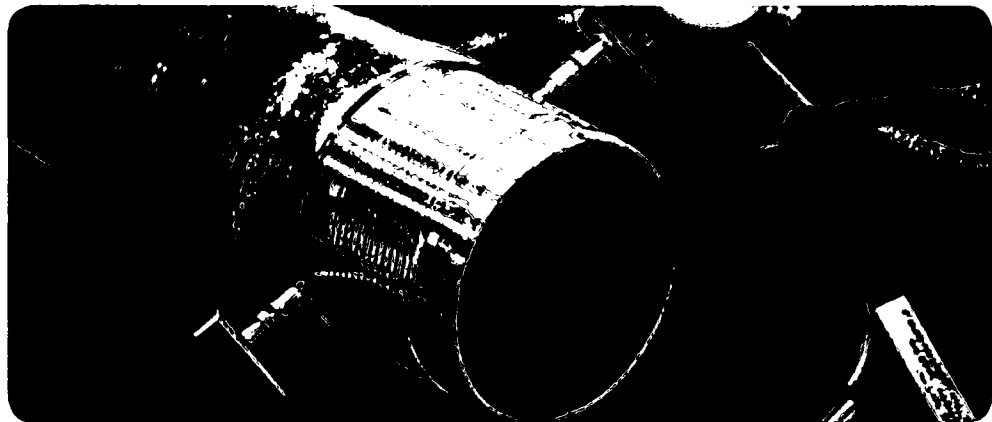
PERFORMANCE PROPERTIES

Pipe Nominal OD	Nominal Weight	Plain-End Weight	Nominal Wall	Drift Diameter	Pin Bored ID	Makeup Loss	Connection Efficiency	55 KSI Tensile and Compressive Strength	80 KSI Tensile and Compressive Strength	95 KSI Tensile and Compressive Strength
inches	lbs/ft	lbs/ft	inches	inches	inches	inches		1000 lbs	1000 lbs	1000 lbs
3 1/2	9.2	8.81	2.992	2.867	2.906	2.93	63.10%	90	131	155
3 1/2	10.2	9.92	2.922	2.797	2.836	3.17	62.64%	100	146	173
3 1/2	12.7	12.53	2.750	2.625	2.664	3.67	61.77%	125	182	216
3 1/2	14.3	14.11	2.640	2.515	2.554	4.05	61.48%	140	204	242
4	9.5	9.12	3.548	3.423	3.462	2.81	63.97%	94	137	163
4	11.0	10.47	3.476	3.351	3.390	2.93	62.77%	106	154	183
4	11.6	11.35	3.428	3.303	3.342	3.18	63.02%	116	168	200
4	13.2	12.95	3.340	3.215	3.254	3.43	62.45%	131	190	226
4 1/2	11.6	11.36	4.000	3.875	3.914	2.94	63.57%	117	170	202
4 1/2	12.6	12.25	3.958	3.833	3.872	3.07	63.24%	125	182	216
4 1/2	13.5	13.05	3.920	3.795	3.834	3.19	62.80%	132	193	229
4 1/2	15.1	15.00	3.826	3.701	3.740	3.44	62.28%	151	220	261
5	11.5	11.24	4.560	4.435	4.474	2.70	63.70%	116	168	200
5	13.0	12.84	4.494	4.369	4.408	2.95	63.15%	131	191	226
5	15.0	14.88	4.408	4.283	4.322	3.20	62.69%	151	219	261
5	18.0	17.95	4.276	4.151	4.190	3.58	62.00%	180	262	311
5	20.3	20.03	4.184	4.059	4.098	3.83	61.59%	199	290	344
5	20.8	20.65	4.156	4.031	4.070	3.95	61.56%	205	299	355
5	21.4	21.32	4.126	4.001	4.040	4.08	61.57%	212	309	366
5	23.2	23.11	4.044	3.919	3.958	4.33	61.42%	229	334	396
5 1/2	15.5	15.36	4.950	4.825	4.864	2.80	58.02%	144	210	249
5 1/2	17.0	16.89	4.892	4.767	4.806	2.97	58.14%	159	231	274
5 1/2	20.0	19.83	4.778	4.653	4.692	3.30	58.09%	186	271	322
5 1/2	23.0	22.56	4.670	4.545	4.584	3.47	57.66%	210	306	363
5 1/2	26.0	25.56	4.548	4.500	4.539	3.80	54.10%	224	325	386
6 5/8	20.0	19.51	6.049	5.924	5.963	3.27	59.60%	188	273	325
6 5/8	23.2	22.21	5.965	5.840	5.879	3.60	59.95%	215	313	372
6 5/8	24.0	23.60	5.921	5.796	5.835	3.76	60.03%	229	333	396
6 5/8	28.0	27.67	5.791	5.666	5.705	4.10	59.56%	266	388	460
6 5/8	28.6	28.60	5.761	5.636	5.675	4.10	59.21%	274	398	473
6 5/8	32.0	31.23	5.675	5.550	5.589	4.43	59.44%	300	436	518
6 5/8	33.0	32.74	5.625	5.500	5.539	4.60	59.38%	314	457	543
7	20.0	19.56	6.456	6.331	6.370	3.41	60.12%	190	277	328
7	23.0	22.65	6.366	6.250	6.289	3.58	58.80%	215	313	372
7	26.0	25.69	6.276	6.151	6.190	3.91	59.57%	247	360	427
7	29.0	28.75	6.184	6.125	6.164	4.24	56.15%	261	380	451
7	32.0	31.70	6.094	6.000	6.039	4.41	57.92%	297	432	513
7 5/8	26.40	25.59	0.328	6.844	6.883	3.76	59.94%	248	360	428
7 5/8	29.70	29.06	0.375	6.750	6.789	3.92	59.41%	279	406	482
7 5/8	33.70	33.07	0.430	6.640	6.679	4.26	59.23%	316	460	547
7 5/8	35.80	35.59	0.465	6.570	6.609	4.42	59.09%	340	495	587
7 5/8	39.00	38.08	0.500	6.500	6.539	4.75	59.55%	366	533	633
7 5/8	42.80	42.43	0.562	6.376	6.415	5.09	59.42%	407	593	704
7 5/8	45.30	44.71	0.595	6.310	6.349	5.25	59.34%	429	623	740
7 3/4	46.10	45.51	0.595	6.500	6.539	5.26	56.81%	418	608	722
8 5/8	28.00	27.04	0.304	7.892	7.931	3.91	60.71%	265	386	458
8 5/8	32.00	31.13	0.352	7.875	7.914	4.25	55.57%	280	407	483
8 5/8	36.00	35.17	0.400	7.700	7.739	4.58	60.70%	345	502	596
8 5/8	40.00	39.33	0.450	7.625	7.664	4.91	59.48%	378	550	653

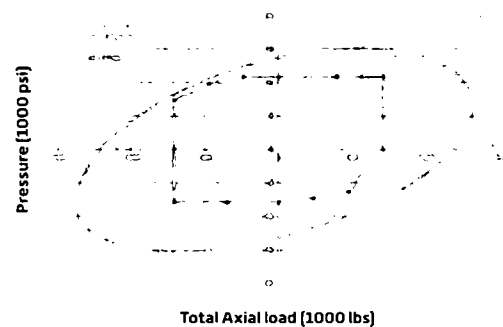
NOTES:

1. Connection efficiency is calculated by dividing the connection-critical area by the nominal pipe body area.
 2. Tensile and compressive strengths are calculated by multiplying the pipe body yield and connection critical area.
- Contact U. S. Steel Tubular Products to receive information for grades not listed.

110 KSI Tensile and Compressive Strength	125 KSI Tensile and Compressive Strength
1000 lbs	1000 lbs
180	204
201	228
250	284
280	319
189	214
212	241
231	263
261	297
233	265
250	285
265	301
302	343
231	263
262	298
302	343
360	409
399	453
411	467
424	482
459	521
288	327
317	361
372	423
421	478
447	508
376	427
430	489
458	521
533	605
547	622
600	682
628	714
380	432
430	489
495	562
522	593
594	675
495	563
558	634
633	719
680	773
740	840
815	926
857	974
836	950
531	603
560	636
690	784
756	860



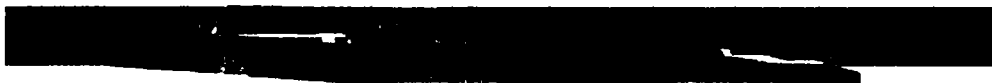
USS-LIBERTY FJM® Connection Evaluation Envelope



USS-LIBERTY FJM® connection is API RP 5C5:2014 CAL II Qualified



USS-LIBERTY FJM® Capped End FEA



USS-LIBERTY FJM® Make-Up FEA



U. S. Steel Tubular Products

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Mesquite SWD Incorporated
LEASE NO.:	NMNM059383
WELL NAME & NO.:	Carthel Federal SWD 2
SURFACE HOLE FOOTAGE:	1856'/N & 2080'/E
BOTTOM HOLE FOOTAGE:	1856'/N & 2080'/E
LOCATION:	Section 5, T.23 S., R.29 E., NMPM
COUNTY:	Eddy County, New Mexico

Potash	☐ None	☐ Secretary	☒ R-111-P
Cave/Karst Potential	☐ Low	☒ Medium	☐ High
Variance	☐ None	☒ Flex Hose	☐ Other
Wellhead	☒ Conventional	☐ Multibowl	
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP

A. HYDROGEN SULFIDE

1. Hydrogen Sulfide (H₂S) monitors shall be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. PLUGGING REQUIREMENT (S)

1. **Blowout Preventers:** A blowout preventer (BOP), as appropriate, shall be installed before commencing any plugging operation. The BOP must be installed and maintained as per API and manufacturer recommendations. The minimum BOP requirement is a 2M system for a well not deeper than 9,090 feet; a 3M system for a well not deeper than 13,636 feet; and a 5M system for a well not deeper than 22,727 feet.
2. **Mud Requirement:** Mud shall be placed between all plugs. Minimum consistency of plugging mud shall be obtained by mixing at the rate of 25 sacks (50 pounds each) of gel per 100 barrels of brine water. Minimum nine (9) pounds per gallon.
3. **Cement Requirement:** Sufficient cement shall be used to bring any required plug to the specified depth and length. Any given cement volumes on the proposed plugging procedure are merely estimates and are not final. Unless specific approval is

received, no plug except the surface plug shall be less than 25 sacks of cement. Any plug that requires a tag will have a minimum WOC time of 4 hours.

In lieu of a cement plug across perforations in a cased hole (not for any other plugs), a bridge plug set within 50 feet to 100 feet above the perforations shall be capped with 25 sacks of cement. **Before pumping cement on top of CIBP, tag will be required to verify depth. Based on depth, a tag of the cement may be deemed necessary.** Unless otherwise specified in the approved procedure, the cement plug shall consist of either **Neat Class "C"**, for up to 7,500 feet of depth or **Neat Class "H"**, for deeper than 7,500 feet plugs.

4. **Must conduct a casing integrity test and submit results to BLM. Notify BLM if test fails.**
5. CIBP at 12119' needs to capped with 25 sacks of class H cement or 35 feet of cement if using a dump bailer. **WOC and Tag.**
6. Spot Class H cement from 9910' to bottom of CIBP at 9500'. CIBP at 9500' needs to capped with 25 sacks of class H cement or 35 feet of cement if using a dump bailer. **WOC and Tag.**

C. CASING

1. The minimum required fill of cement behind the 7 5/8 inch production liner is:
 - Cement to top of liner. If cement does not circulate, contact the appropriate BLM office. **Excess calculates to 7% - additional cement will be required.**
2. **Open hole completion from 14130 to 15330.**

D. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).
2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **10,000 (10M) psi. Variance is approved to use a 5M Annular which shall be tested to 5000 psi.**

E. WELL COMPLETION

Special Requirements:

The operator shall supply the BLM with a copy of a mudlog over the permitted disposal interval and estimated insitu water salinity based on open-hole logs. If hydrocarbon shows occur while drilling, the operator shall notify the BLM.

The operator shall provide to the BLM a summary of formation depth picks based on mudlog and geophysical logs along with a copy of the mudlog and open hole logs from TD to top of Devonian

A NOI sundry with the completion procedure for this well shall be submitted and approved prior to commencing completion work. The procedure will be reviewed to verify that the completion proposal will allow the operator to:

- 1. Properly evaluate the injection zone utilizing open hole logs, swab testing along any other method to confirm that hydrocarbons cannot be produced in paying quantities. This evaluation shall be reviewed by the BLM prior to injection commencing.**
- 2. Restrict the injection fluid to the approved formation.**
- 3. If a step rate test will be run an NOI sundry shall be submitted to the BLM for approval**

If off-lease water will be disposed in this well, the operator shall provide proof of right-of-way approval.

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GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

☒ Chaves and Roosevelt Counties

Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.

During office hours call (575) 627-0272.

After office hours call (575)

☒ Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,

(575) 361-2822

☒ Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)

393-3612

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the

plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

- b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.
- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.