State of New Mexico
Energy, Minerals and Natural Resources Department

New Mexico Oil Conservation Division approval and conditions listed below are made in accordance with OCD Rule 19.15.7.11 and are in addition to the actions approved by BLM on the following 3160-3 APD form.

Operator Signature Date: 5/8/2019_____
Well information.
Operator__DJR_____, Well Name and Number: Betonnie Tsosie Wash Unit 110H

Re-entry status will change when C-104 is Rec'd

API# 30-045-35513_____, Section_10_, Township _23_ **N**/S, Range _8__E/**W**

Conditions of Approval: (See the below checked and handwritten conditions)

- ✓ Notify Aztec OCD 24hrs prior to casing & cement.
- ✓ If cement doesn't circulate on any casing string or stage tool a CBL will be required. Contact the regulatory agencies prior to proceeding.
- ✓ Hold C-104 for directional survey & "As Drilled" Plat
- o Hold C-104 for: NSL, NSP, DHC, 5.9 Compliance
- o Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
- o Regarding the use of a pit, closed loop system or below grade tank, the operator must comply with the following as applicable:
  - A pit requires a complete C-144 be submitted and approved prior to the construction or use of the pit, pursuant to 19.15.17.8.A
  - A closed loop system requires notification prior to use, pursuant to 19.15.17.9.A
  - A below grade tank requires a registration be filed prior to the construction or use of the below grade tank, pursuant to 19.15.17.8.C
- ✓ Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
- o Submit Gas Capture Plan form prior to spudding or initiating recompletion operations
- ✓ Regarding Hydraulic Fracturing, review EPA Underground Injection Control Guidance 84
- ✓ Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.
- ✓ Well-bore communication is regulated under 19.15.29 NMAC. This requires well-bore Communication to be reported in accordance with 19.15.29.8.

Brandon Powell _____ 4/2/20

NMOCD Approved by Signature Date

Form 3160-3
(June 2015)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM076842

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other

1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☑ Multiple Zone

7. If Unit or CA Agreement, Name and No.
NMNM135219A

8. Lease Name and Well No.
BETONNIE TSOSIE WASH UNIT
110H

2. Name of Operator
DJR OPERATING LLC

9. API Well No.
30-045-35513

3a. Address
1600 Broadway #1960 Denver CO 80202

3b. Phone No. *(include area code)*
(505)632-3476

10. Field and Pool, or Exploratory
~~ALAMITO MANCOS N (OIL)~~ Betonnie Tsosie Wash Mancos

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface LOT I / 2438 FSL / 480 FEL / LAT 36.240989 / LONG -107.661625

At proposed prod. zone LOT N / 370 FSL / 2593 FWL / LAT 36.220738 / LONG -107.6336

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 10 / T23N / R8W / NMP

14. Distance in miles and direction from nearest town or post office*
43 miles

12. County or Parish
SAN JUAN

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
480 feet

16. No of acres in lease
2400

17. Spacing Unit dedicated to this well
680

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
60 feet

19. Proposed Depth
5295 feet / 15685 feet

20. BLM/BIA Bond No. in file
FED: NMB001464

NMOCD

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
6933 feet

22. Approximate date work will start*
04/01/2020

23. Estimated duration
10 days

MAR 12 2020

DISTRICT III

24. Attachments

KP

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

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 requested by the BLM.

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	Vanessa Cameron / Ph: (303)868-6449	05/08/2019

Title
Regulatory Manager

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Mellisa Reeves-Wientjes / Ph: (505)564-7738	03/12/2020

Title	Office
Land Law Examiner	FARMINGTON

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.

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 03/12/2020

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
811 S. First St., Artesia, N.M. 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011

Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30-045-35513	98175	BETONNIE TSOSIE WASH UNIT MANCOS OIL POOL

4 Property Code	5 Property Name	6 Well Number
325179	BETONNIE TSOSIE WASH UNIT	110H

7 OGRID No.	8 Operator Name	9 Elevation
371838	DJR OPERATING, LLC	6933'

10 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	10	23N	8W		2438'	SOUTH	480'	EAST	SAN JUAN

11 Bottom Hole Location If Different From Surface

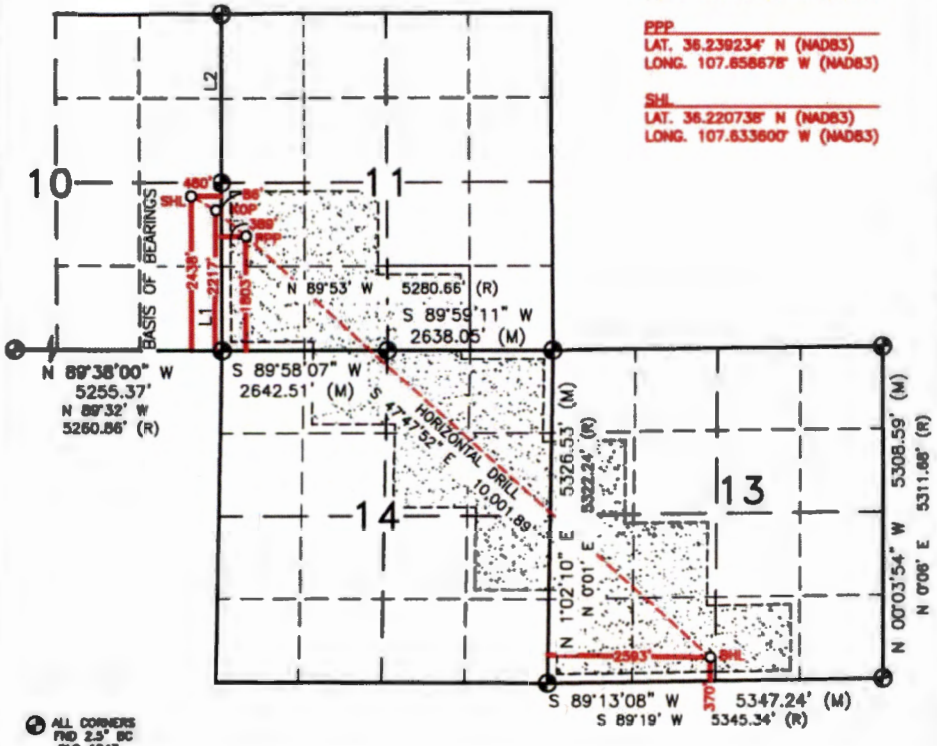
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	13	23N	8W		370'	SOUTH	2593'	WEST	SAN JUAN

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
DEDICATED SPACING UNIT: SEC. 11: SW/SE & SE/4 (280 AC.); SEC 14: NE/NW, NE/4 & NE/SE (240 AC.); SEC 13: SW/NW, SW/4, & SW/SE (240 AC.) = 880 ACRES TOTAL			R-13930, R-13930A

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

16

LINE TABLE
L1: N 00°09'22" W 2653.00'
L2: N 00°01'25" E 2655.84'
N 0°04' W 5304.42' (R)



18

17 OPERATOR CERTIFICATION

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

Signature 5/30/19 Date

Steven Merrell
Printed Name

Smerrell@djrllc.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.

AUGUST 16, 2013
Date of Survey
Signature and Seal of Professional Surveyor:

HENRY P. BROADHURST JR. NEW MEXICO 11393 PROFESSIONAL SURVEYOR 5/23/2019

Certificate Number 11393

DRILLING PLAN
Betonnie Tsosie 110H
San Juan County, New Mexico

Surface Location
480-ft FEL & 2438-ft FSL
Sec 10 T23N R8W
Graded Elevation 6933' MSL
RKB Elevation 6947' (14' KB)

SHL Geographical Coordinates (NAD-83)
Latitude 36.2409890° N
Longitude 107.6616250° W

Kick Off Point for Horizontal Build Curve
4750-ft MD
3988-ft TVD

Local Coordinates (from SHL)
223-ft South
392-ft East

Heel Location (Pay zone entry)
389-ft FWL & 1803-ft FSL
Sec 11 T23N R8W

Heel Geographical Coordinates (NAD-83)
Latitude 36.2392338° N
Longitude 107.65867810° W

Bottom Hole Location (TD)
2593-ft FWL & 370-ft FSL
Sec 13 T23N R8W

BHL Geographical Coordinates (NAD-83)
Latitude 36.2207375° N
Longitude 107.6336001° W

Well objectives
This well is planned as a 10000-ft lateral in the Gallup C sand.

Bottom Hole temperature and pressure
The temperature in the Gallup C horizontal objective is 141°F. Bottom hole pressure in the Gallup C is forecast to be 1985 psi.

Formation Tops (Sd = Sand; Sh = Shale; Siltstone = Slt, Coal = C; W = water; O = oil; G = gas; NP = no penetration)

Name	MD (ft)	TVD (ft)	Lithology	Pore fluid	Expected Pore Pressure (ppg)	Planned Mud Weight (ppg)
Ojo Alamo	1047	1043	Sd	W	8.3	8.4 – 8.8
Kirtland	1148	1145	Sh	-	8.3	8.4 – 8.8
Fruitland	1320	1316	C	G	8.3	9.0 - 9.5
Pictured Cliffs	1654	1648	Sd	W	8.3	9.0 - 9.5
Lewis	1871	1864	Sh	-		9.0 - 9.5
Chacra	2455	2444	Sd	-	8.3	9.0 - 9.5
Menefee	3199	3184	Sd, C	G	8.3	9.0 - 9.5
Point Lookout	4060	4040	Sd	-	8.3	9.0 - 9.5
Mancos	4257	4236	Sh	-		9.0 - 9.5
Mancos Silt	4589	4566	Slt	O/G	6.6	9.0 - 9.5
Gallup A	5068	5021	Slt	O/G	6.6	9.0 - 9.5
Gallup B	5121	5063	Sd	O/G	6.6	8.8 -9.0
Gallup C	5246	5151	Sd	O/G	6.6	8.8 -9.0
Target	5683	5295	Sd	O/G	6.6	8.8 -9.0

Casing Program

Casing OD	Hole Size	Weight (#/ft)	Grade	Coupling	MD Top	MD Bottom	TVD Top	TVD Bottom	Top of Cement
9-5/8"	12-1/4"	36	K-55	STC	surf	350	surf	350	surface
7"	8-3/4"	26	K-55	LTC	surf	5673	surf	5295	surface
4-1/2"	6-1/8"	11.6	P-110	BTC	5473	15685	5261	5295	5473

Note: all casing will be new

Casing Design Load Cases

	Description	Casing String 9-5/8" Surface	7" Intermediate	4-1/2" Production Liner
Collapse	Full internal evacuation[1]	✓	✓	✓
	Cementing	✓	✓	✓
Burst	Pressure test	✓[2]	✓[2]	✓
	Gas kick		✓[3]	
	Fracture at shoe, 1/3 BHP at surface		✓[4]	
	Injection down casing			✓[5]
Axial	Dynamic load on casing coupling[6]	✓	✓	✓
Axial	Overpull[7]	✓	✓	✓

Note #

1 Fluid level at shoe, air column to surface, pore pressure outside
2 Tested to 80% of minimum internal yield with freshwater inside, pore pressure outside
3 50 bbl kick at TD, 0.50 ppg intensity, 4" drill pipe, 9.0 ppg mud, fracture gradient at shoe
4 2060 psi BHP, 687 psi surface pressure, 12.5 ppg EMW shoe integrity
5 Surface stimulation pressure of 8000 psi on 8.3 ppg fluid column. Stimulation will be down frac string, so load does not apply to 7" intermediate casing.
6 Shock load from abrupt pipe deceleration, evaluated against coupling rating
7 Overpull values as follows: Surface casing 20,000 lbs, Intermediate & Production 100,000 lbs

Casing Design Factors

Casing string	Casing OD	Design Factors Burst	Collapse	Axial	Triaxial
Surface	9-5/8"	1.25	13.38	8.16	1.56
Intermediate	7"	1.25	1.50	1.68	1.34
Production liner	4-1/2"	1.37	3.68	1.88	1.69

Cement Design

Additives: A=Accelerator; B=Bond Enhancer; De=Defoamer; Di=Dispersant; Ex=Extender; Fl=Fluid Loss L=Lost Circulation; R=Retarder; SA=Suspending Agent; THX=Thixotropic Additive; V=Viscosifier

9-5/8" Surface Casing	Lead
Name	Redi-Mix
Type	I-II
Additives	20% Fly Ash
Planned top	Surface
Density (ppg)	14.50
Yield (cf/sx)	1.61
Mix water (gal/sx)	7.41
Volume (sx)	114
Volume (bbls)	33
Volume (cu. ft.)	185
Excess %	50

7" Intermediate Casing	Lead	Tail
Halliburton Name	HALCEM	VARICEM
Type	Poz/G	Poz/G
Additives	Ex, L, SA	Ex, Fl, SA, L, THX
Planned top	Surface	3757-ft
Density (ppg)	12.30	13.50
Yield (cf/sx)	1.95	1.30
Mix water (gal/sx)	10.14	5.64
Volume (sx)	475	383

Volume (bbls)	165	89
Volume (cu.ft.)	929	499
Excess %	70	70

4-1/2" Production Liner	Lead
Halliburton Name	EXTENDACEM
Type	Poz/G
Additives	B, De, Di, Fl, Re, V
Planned top	5473-ft
Density (ppg)	13.3
Yield (cf/sx)	1.36
Mix water (gal/sx)	5.94
Volume (sx)	1037
Volume (bbls)	251
Volume (cu.ft)	1411
Excess %	30

Wellhead & Pressure Control
The well head will be an 11" 5M multi-bowl system. A 3M BOPE conforming to Onshore Order #2 will be installed on the surface casing. The BOP and accumulator will meet API 16D and 16E respectively.

A PVT mud monitoring system and a trip tank will be rigged up and operational for all hole intervals. An electronic geolograph will be employed to monitor and record drilling data (ROP, WOB, SPM, Pressure, RPM and torque).

Mud Program
Surface hole will be drilled with a fresh water, native mud system. In intermediate hole, a low weight 7% KCl LSND drilling fluid will be used, with KCl providing chemical stability for the young shales and clays present in the interval. In production hole a LSND system with polymer and lubricant additives is programmed. Sufficient drill water and mud additives will be on hand to maintain adequate pit volumes and maintain well control.

Hole Section	Fluid type	Interval (MD)	Density (ppg)	Funnel Viscosity	Yield Point	Fluid Loss (cc/30 min)
Surface	Fresh water spud mud	0 – 350	8.4 – 8.8	32 – 44	2 – 12	NC
Intermediate	7% KCl Low solids, non-dispersed	350 – 5673	9.0 – 9.5	38 – 45	8 – 14	<20
Production	Low solids, non-dispersed	5673 – 15685	8.8 – 9.2	34 – 38	6 – 8	6 – 8

Cores, tests and logs
Wellbore surveying: Drift (inclination only) surveys will be obtained in surface hole. MWD directional surveys will be taken in intermediate and production hole.

Logging while drilling: None in surface hole. MWD GR in intermediate and production hole.

Mud logging: a two-person mud logging unit with C1 – C4 gas analysis will be operational in intermediate and production hole.

Electric logging: No open hole electric logs are programmed. A cased hole GR/CCL will be run during completions for perforating depth control.

Cuttings and drilling fluids management
A closed loop, steel tank-based circulating system will be used. In addition to the rig solids control equipment, a dewatering centrifuge and chemical flocculation system will be operational to strip solids from the whole mud. All solids will be collected in 3-sided bins and will then be put into transports with a bucket loader. Drying agents will be used if necessary. The solids will be taken to a licensed commercial disposal facility. Whole mud will be dewatered back to drill water and used as make up for subsequent wells or hauled off for disposal. A diagram of the closed loop system is included.

Completion
It is envisioned that this well will be completed with a multi-stage sand frac, using the plug and perf technique. After drilling out the plugs, the current plan is to install a 2-7/8" plunger-assisted gas lift tubing string. The stimulation and completion plan will be sundried at a later date.

DJR Operating

Betonnie Tsosie Unit
I10 2308
 # 110H

Original drilling

Plan: APD

Standard Planning Report

01 May, 2019

DJR Operating

Pad name : I10 2308
Well name : Betonnie Tsosie Wash Unit #110H

SHL Latitude : 36.24098900
SHL Longitude : -107.66162500

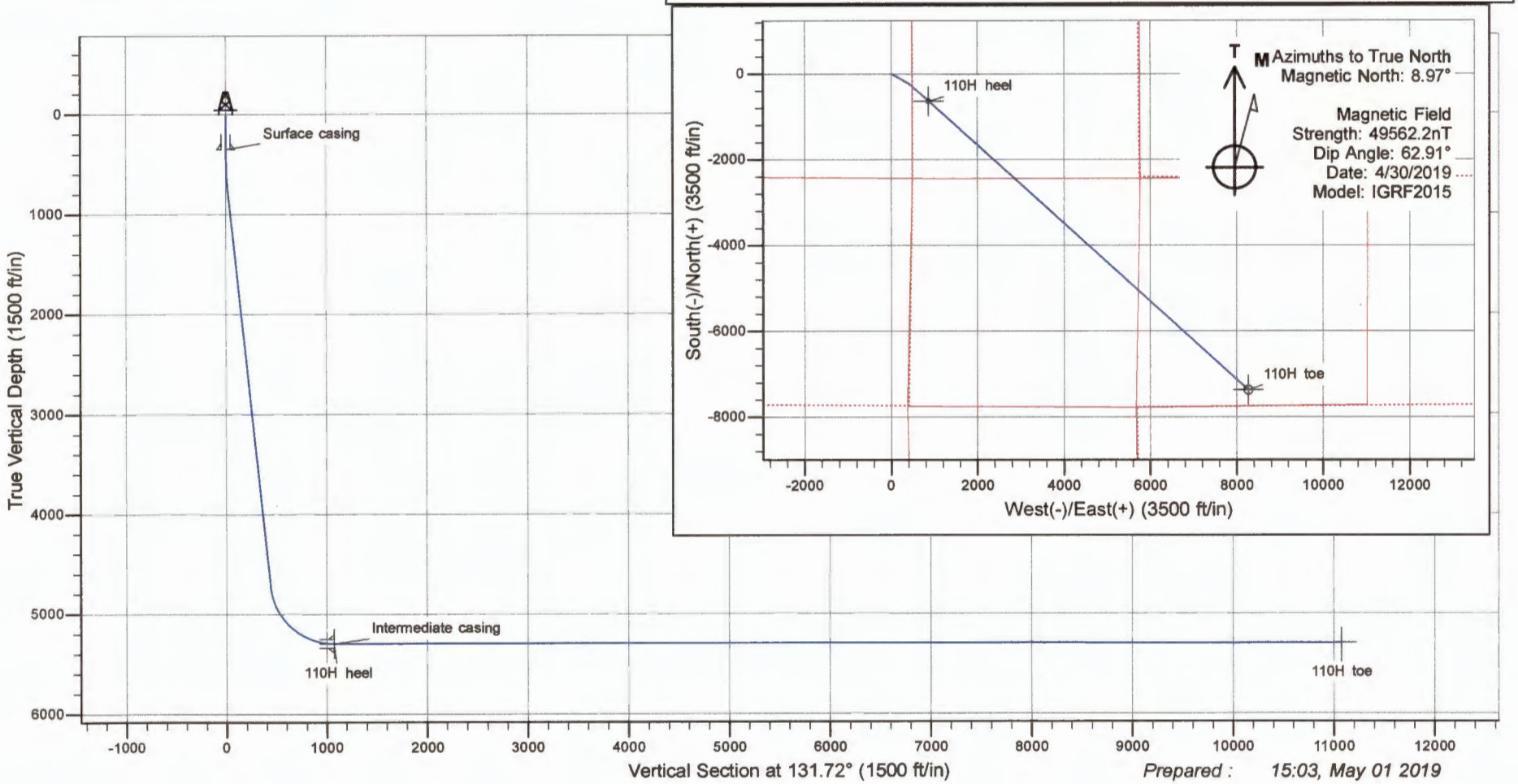
US State Plane 1983
North American Datum 1983
New Mexico Western Zone

TRAJECTORY DETAILS
Pad elevation : 6933 RKB @ 6947ft (RIG TBD)

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0	0.00	0.00	0	0	0	0.00	0.00	0	
450	0.00	0.00	450	0	0	0.00	0.00	0	
762	6.24	119.65	762	-8	15	2.00	119.65	17	
4750	6.24	119.65	4726	-223	392	0.00	0.00	441	
5683	90.00	132.30	5295	-639	869	9.00	12.73	1074	110H heel
15685	90.00	132.30	5295	-7371	8266	0.00	0.00	11075	110H toe

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
110H heel	5295	-639	869	1906426	2774596	36.23923380	-107.65867810
110H toe	5295	-7371	8266	1899707	2782005	36.22073750	-107.63360010



Prepared : 15:03, May 01 2019

Database:	EDM	**Local Co-ordinate Reference:**	Well # 110H
Company:	DJR Operating	**TVD Reference:**	RKB @ 6947ft (RIG TBD)
Project:	Betonnie Tsosie Unit	**MD Reference:**	RKB @ 6947ft (RIG TBD)
Site:	I10 2308	**North Reference:**	True
Well:	# 110H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original drilling		
Design:	APD		

Project Betonnie Tsosie Unit

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site I10 2308

Site Position:		**Northing:**	1,907,116 usft	**Latitude:**	36.24113400
From:	Lat/Long	**Easting:**	2,773,697 usft	**Longitude:**	-107.66172200
Position Uncertainty:	0 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.10 °

Well # 110H

Well Position	**+N/-S**	-53 ft	**Northing:**	1,907,063 usft	**Latitude:**	36.24098900
	+E/-W	29 ft	**Easting:**	2,773,726 usft	**Longitude:**	-107.66162500
Position Uncertainty		0 ft	**Wellhead Elevation:**		**Ground Level:**	6933 ft

Wellbore Original drilling

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	4/30/2019	8.97	62.91	49,562.18082898

Design APD

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0	0	0	131.72

Plan Survey Tool Program **Date** 5/1/2019

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0	15,685	APD (Original drilling)	MWD+IGRF OWSG MWD + IGRF or WMM	

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0	0.00	0.00	0	0	0	0.00	0.00	0.00	0.00	
450	0.00	0.00	450	0	0	0.00	0.00	0.00	0.00	
762	6.24	119.65	762	-8	15	2.00	2.00	0.00	119.65	
4750	6.24	119.65	4726	-223	392	0.00	0.00	0.00	0.00	
5683	90.00	132.30	5295	-639	869	9.00	8.98	1.36	12.73	110H heel
15,685	90.00	132.30	5295	-7371	8266	0.00	0.00	0.00	0.00	110H toe

Database:	EDM	**Local Co-ordinate Reference:**	Well # 110H
Company:	DJR Operating	**TVD Reference:**	RKB @ 6947ft (RIG TBD)
Project:	Betonnie Tsosie Unit	**MD Reference:**	RKB @ 6947ft (RIG TBD)
Site:	I10 2308	**North Reference:**	True
Well:	# 110H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original drilling		
Design:	APD		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0	0.00	0.00	0	0	0	0	0.00	0.00	0.00
100	0.00	0.00	100	0	0	0	0.00	0.00	0.00
200	0.00	0.00	200	0	0	0	0.00	0.00	0.00
300	0.00	0.00	300	0	0	0	0.00	0.00	0.00
350	0.00	0.00	350	0	0	0	0.00	0.00	0.00
Surface casing									
400	0.00	0.00	400	0	0	0	0.00	0.00	0.00
450	0.00	0.00	450	0	0	0	0.00	0.00	0.00
500	1.00	119.65	500	0	0	0	2.00	2.00	0.00
600	3.00	119.65	600	-2	3	4	2.00	2.00	0.00
700	5.00	119.65	700	-5	9	11	2.00	2.00	0.00
762	6.24	119.65	762	-8	15	17	2.00	2.00	0.00
800	6.24	119.65	799	-10	18	21	0.00	0.00	0.00
900	6.24	119.65	899	-16	28	31	0.00	0.00	0.00
1000	6.24	119.65	998	-21	37	42	0.00	0.00	0.00
1045	6.24	119.65	1043	-24	42	47	0.00	0.00	0.00
Ojo Alamo									
1100	6.24	119.65	1097	-27	47	53	0.00	0.00	0.00
1148	6.24	119.65	1145	-29	51	58	0.00	0.00	0.00
Kirtland									
1200	6.24	119.65	1197	-32	56	63	0.00	0.00	0.00
1300	6.24	119.65	1296	-37	66	74	0.00	0.00	0.00
1320	6.24	119.65	1316	-38	67	76	0.00	0.00	0.00
Fruitland									
1400	6.24	119.65	1396	-43	75	84	0.00	0.00	0.00
1500	6.24	119.65	1495	-48	84	95	0.00	0.00	0.00
1600	6.24	119.65	1594	-53	94	106	0.00	0.00	0.00
1654	6.24	119.65	1648	-56	99	111	0.00	0.00	0.00
Picture Cliffs									
1700	6.24	119.65	1694	-59	103	116	0.00	0.00	0.00
1800	6.24	119.65	1793	-64	113	127	0.00	0.00	0.00
1871	6.24	119.65	1864	-68	120	135	0.00	0.00	0.00
Lewis									
1900	6.24	119.65	1893	-70	122	138	0.00	0.00	0.00
2000	6.24	119.65	1992	-75	132	148	0.00	0.00	0.00
2100	6.24	119.65	2091	-80	141	159	0.00	0.00	0.00
2200	6.24	119.65	2191	-86	151	170	0.00	0.00	0.00
2300	6.24	119.65	2290	-91	160	180	0.00	0.00	0.00
2400	6.24	119.65	2390	-97	170	191	0.00	0.00	0.00
2455	6.24	119.65	2444	-99	175	197	0.00	0.00	0.00
Chacra									
2500	6.24	119.65	2489	-102	179	201	0.00	0.00	0.00
2600	6.24	119.65	2588	-107	188	212	0.00	0.00	0.00
2700	6.24	119.65	2688	-113	198	223	0.00	0.00	0.00
2800	6.24	119.65	2787	-118	207	233	0.00	0.00	0.00
2900	6.24	119.65	2887	-123	217	244	0.00	0.00	0.00
3000	6.24	119.65	2986	-129	226	255	0.00	0.00	0.00
3100	6.24	119.65	3086	-134	236	265	0.00	0.00	0.00
3199	6.24	119.65	3184	-139	245	276	0.00	0.00	0.00
Menefee									
3200	6.24	119.65	3185	-140	245	276	0.00	0.00	0.00
3300	6.24	119.65	3284	-145	255	286	0.00	0.00	0.00
3400	6.24	119.65	3384	-150	264	297	0.00	0.00	0.00

Database:	EDM	**Local Co-ordinate Reference:**	Well # 110H
Company:	DJR Operating	**TVD Reference:**	RKB @ 6947ft (RIG TBD)
Project:	Betonnie Tsosie Unit	**MD Reference:**	RKB @ 6947ft (RIG TBD)
Site:	I10 2308	**North Reference:**	True
Well:	# 110H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original drilling		
Design:	APD		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
3500	6.24	119.65	3483	-156	274	308	0.00	0.00	0.00
3600	6.24	119.65	3583	-181	283	318	0.00	0.00	0.00
3700	6.24	119.65	3682	-166	292	329	0.00	0.00	0.00
3800	6.24	119.65	3781	-172	302	340	0.00	0.00	0.00
3900	6.24	119.65	3881	-177	311	350	0.00	0.00	0.00
4000	6.24	119.65	3980	-183	321	361	0.00	0.00	0.00
4060	6.24	119.65	4040	-186	326	367	0.00	0.00	0.00
Point Lookout									
4100	6.24	119.65	4080	-188	330	372	0.00	0.00	0.00
4200	6.24	119.65	4179	-193	340	382	0.00	0.00	0.00
4257	6.24	119.65	4236	-196	345	388	0.00	0.00	0.00
Mancos									
4300	6.24	119.65	4278	-199	349	393	0.00	0.00	0.00
4400	6.24	119.65	4378	-204	359	403	0.00	0.00	0.00
4500	6.24	119.65	4477	-209	368	414	0.00	0.00	0.00
4589	6.24	119.65	4566	-214	376	424	0.00	0.00	0.00
Mancos Silt									
4600	6.24	119.65	4577	-215	377	425	0.00	0.00	0.00
4700	6.24	119.65	4676	-220	387	435	0.00	0.00	0.00
4750	6.24	119.65	4726	-223	392	441	0.00	0.00	0.00
KOP									
4800	10.65	124.98	4775	-227	398	448	8.94	8.81	10.66
4850	15.12	127.22	4824	-234	407	459	9.00	8.95	4.47
4900	19.60	128.45	4872	-243	419	474	9.00	8.97	2.46
4950	24.10	129.23	4918	-254	433	492	9.00	8.98	1.57
5000	28.59	129.78	4963	-268	450	515	9.00	8.99	1.10
5050	33.08	130.20	5006	-285	470	540	9.00	8.99	0.82
5068	34.74	130.32	5021	-292	478	550	9.00	8.99	0.69
Gallup A									
5100	37.58	130.52	5047	-304	492	569	9.00	8.99	0.62
5121	39.47	130.64	5063	-312	502	582	9.00	8.99	0.56
Gallup B									
5150	42.08	130.78	5085	-325	516	601	9.00	8.99	0.51
5200	46.57	131.00	5121	-347	542	636	9.00	8.99	0.44
5246	50.70	131.18	5151	-370	568	671	9.00	9.00	0.38
Gallup C									
5250	51.07	131.19	5154	-372	571	674	9.00	9.00	0.36
5300	55.57	131.36	5183	-399	601	714	9.00	9.00	0.34
5350	60.07	131.51	5210	-427	633	756	9.00	9.00	0.30
5400	64.57	131.65	5233	-456	666	800	9.00	9.00	0.28
5450	69.06	131.78	5253	-487	700	846	9.00	9.00	0.26
5473	71.13	131.83	5261	-501	716	868	9.00	9.00	0.24
Top of liner									
5500	73.56	131.90	5269	-518	735	894	9.00	9.00	0.24
5550	78.06	132.01	5281	-551	771	942	9.00	9.00	0.23
5600	82.56	132.12	5290	-584	808	991	9.00	9.00	0.22
5650	87.06	132.23	5294	-617	845	1041	9.00	9.00	0.22
5683	90.00	132.30	5295	-639	869	1074	8.91	8.91	0.21
Target - Intermediate casing									
5700	90.00	132.30	5295	-651	882	1091	0.00	0.00	0.00
5800	90.00	132.30	5295	-718	956	1191	0.00	0.00	0.00
5900	90.00	132.30	5295	-785	1030	1291	0.00	0.00	0.00
6000	90.00	132.30	5295	-852	1104	1391	0.00	0.00	0.00

Database:	EDM	**Local Co-ordinate Reference:**	Well # 110H
Company:	DJR Operating	**TVD Reference:**	RKB @ 6947ft (RIG TBD)
Project:	Betonnie Tsosie Unit	**MD Reference:**	RKB @ 6947ft (RIG TBD)
Site:	I10 2308	**North Reference:**	True
Well:	# 110H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original drilling		
Design:	APD		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6100	90.00	132.30	5295	-920	1178	1491	0.00	0.00	0.00
6200	90.00	132.30	5295	-987	1252	1591	0.00	0.00	0.00
6300	90.00	132.30	5295	-1054	1326	1691	0.00	0.00	0.00
6400	90.00	132.30	5295	-1122	1400	1791	0.00	0.00	0.00
6500	90.00	132.30	5295	-1189	1473	1891	0.00	0.00	0.00
6600	90.00	132.30	5295	-1256	1547	1991	0.00	0.00	0.00
6700	90.00	132.30	5295	-1324	1621	2091	0.00	0.00	0.00
6800	90.00	132.30	5295	-1391	1695	2191	0.00	0.00	0.00
6900	90.00	132.30	5295	-1458	1769	2291	0.00	0.00	0.00
7000	90.00	132.30	5295	-1526	1843	2391	0.00	0.00	0.00
7100	90.00	132.30	5295	-1593	1917	2491	0.00	0.00	0.00
7200	90.00	132.30	5295	-1660	1991	2591	0.00	0.00	0.00
7300	90.00	132.30	5295	-1727	2065	2691	0.00	0.00	0.00
7400	90.00	132.30	5295	-1795	2139	2791	0.00	0.00	0.00
7500	90.00	132.30	5295	-1862	2213	2891	0.00	0.00	0.00
7600	90.00	132.30	5295	-1929	2287	2991	0.00	0.00	0.00
7700	90.00	132.30	5295	-1997	2361	3091	0.00	0.00	0.00
7800	90.00	132.30	5295	-2064	2435	3191	0.00	0.00	0.00
7900	90.00	132.30	5295	-2131	2509	3291	0.00	0.00	0.00
8000	90.00	132.30	5295	-2199	2583	3391	0.00	0.00	0.00
8100	90.00	132.30	5295	-2266	2657	3491	0.00	0.00	0.00
8200	90.00	132.30	5295	-2333	2731	3591	0.00	0.00	0.00
8300	90.00	132.30	5295	-2401	2805	3691	0.00	0.00	0.00
8400	90.00	132.30	5295	-2468	2879	3791	0.00	0.00	0.00
8500	90.00	132.30	5295	-2535	2953	3891	0.00	0.00	0.00
8600	90.00	132.30	5295	-2602	3027	3991	0.00	0.00	0.00
8700	90.00	132.30	5295	-2670	3101	4091	0.00	0.00	0.00
8800	90.00	132.30	5295	-2737	3175	4191	0.00	0.00	0.00
8900	90.00	132.30	5295	-2804	3249	4291	0.00	0.00	0.00
9000	90.00	132.30	5295	-2872	3322	4391	0.00	0.00	0.00
9100	90.00	132.30	5295	-2939	3396	4491	0.00	0.00	0.00
9200	90.00	132.30	5295	-3006	3470	4591	0.00	0.00	0.00
9300	90.00	132.30	5295	-3074	3544	4691	0.00	0.00	0.00
9400	90.00	132.30	5295	-3141	3618	4791	0.00	0.00	0.00
9500	90.00	132.30	5295	-3208	3692	4891	0.00	0.00	0.00
9600	90.00	132.30	5295	-3276	3766	4991	0.00	0.00	0.00
9700	90.00	132.30	5295	-3343	3840	5091	0.00	0.00	0.00
9800	90.00	132.30	5295	-3410	3914	5191	0.00	0.00	0.00
9900	90.00	132.30	5295	-3477	3988	5291	0.00	0.00	0.00
10,000	90.00	132.30	5295	-3545	4062	5391	0.00	0.00	0.00
10,100	90.00	132.30	5295	-3612	4136	5491	0.00	0.00	0.00
10,200	90.00	132.30	5295	-3679	4210	5591	0.00	0.00	0.00
10,300	90.00	132.30	5295	-3747	4284	5691	0.00	0.00	0.00
10,400	90.00	132.30	5295	-3814	4358	5791	0.00	0.00	0.00
10,500	90.00	132.30	5295	-3881	4432	5891	0.00	0.00	0.00
10,600	90.00	132.30	5295	-3949	4506	5991	0.00	0.00	0.00
10,700	90.00	132.30	5295	-4016	4580	6091	0.00	0.00	0.00
10,800	90.00	132.30	5295	-4083	4654	6191	0.00	0.00	0.00
10,900	90.00	132.30	5295	-4150	4728	6291	0.00	0.00	0.00
11,000	90.00	132.30	5295	-4218	4802	6391	0.00	0.00	0.00
11,100	90.00	132.30	5295	-4285	4876	6491	0.00	0.00	0.00
11,200	90.00	132.30	5295	-4352	4950	6591	0.00	0.00	0.00
11,300	90.00	132.30	5295	-4420	5024	6691	0.00	0.00	0.00
11,400	90.00	132.30	5295	-4487	5097	6791	0.00	0.00	0.00

Database:	EDM	**Local Co-ordinate Reference:**	Well # 110H
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Project:	Betonnie Tsosie Unit	**MD Reference:**	RKB @ 6947ft (RIG TBD)
Site:	I10 2308	**North Reference:**	True
Well:	# 110H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original drilling		
Design:	APD		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
11,500	90.00	132.30	5295	-4554	5171	6891	0.00	0.00	0.00
11,600	90.00	132.30	5295	-4622	5245	6991	0.00	0.00	0.00
11,700	90.00	132.30	5295	-4689	5319	7091	0.00	0.00	0.00
11,800	90.00	132.30	5295	-4756	5393	7191	0.00	0.00	0.00
11,900	90.00	132.30	5295	-4824	5467	7291	0.00	0.00	0.00
12,000	90.00	132.30	5295	-4891	5541	7391	0.00	0.00	0.00
12,100	90.00	132.30	5295	-4958	5615	7491	0.00	0.00	0.00
12,200	90.00	132.30	5295	-5025	5689	7591	0.00	0.00	0.00
12,300	90.00	132.30	5295	-5093	5763	7691	0.00	0.00	0.00
12,400	90.00	132.30	5295	-5160	5837	7791	0.00	0.00	0.00
12,500	90.00	132.30	5295	-5227	5911	7891	0.00	0.00	0.00
12,600	90.00	132.30	5295	-5295	5985	7991	0.00	0.00	0.00
12,700	90.00	132.30	5295	-5362	6059	8091	0.00	0.00	0.00
12,800	90.00	132.30	5295	-5429	6133	8191	0.00	0.00	0.00
12,900	90.00	132.30	5295	-5497	6207	8291	0.00	0.00	0.00
13,000	90.00	132.30	5295	-5564	6281	8391	0.00	0.00	0.00
13,100	90.00	132.30	5295	-5631	6355	8491	0.00	0.00	0.00
13,200	90.00	132.30	5295	-5699	6429	8591	0.00	0.00	0.00
13,300	90.00	132.30	5295	-5766	6503	8691	0.00	0.00	0.00
13,400	90.00	132.30	5295	-5833	6577	8791	0.00	0.00	0.00
13,500	90.00	132.30	5295	-5900	6651	8891	0.00	0.00	0.00
13,600	90.00	132.30	5295	-5968	6725	8991	0.00	0.00	0.00
13,700	90.00	132.30	5295	-6035	6799	9091	0.00	0.00	0.00
13,800	90.00	132.30	5295	-6102	6872	9191	0.00	0.00	0.00
13,900	90.00	132.30	5295	-6170	6946	9291	0.00	0.00	0.00
14,000	90.00	132.30	5295	-6237	7020	9391	0.00	0.00	0.00
14,100	90.00	132.30	5295	-6304	7094	9491	0.00	0.00	0.00
14,200	90.00	132.30	5295	-6372	7168	9591	0.00	0.00	0.00
14,300	90.00	132.30	5295	-6439	7242	9691	0.00	0.00	0.00
14,400	90.00	132.30	5295	-6506	7316	9791	0.00	0.00	0.00
14,500	90.00	132.30	5295	-6574	7390	9891	0.00	0.00	0.00
14,600	90.00	132.30	5295	-6641	7464	9991	0.00	0.00	0.00
14,700	90.00	132.30	5295	-6708	7538	10,091	0.00	0.00	0.00
14,800	90.00	132.30	5295	-6775	7612	10,191	0.00	0.00	0.00
14,900	90.00	132.30	5295	-6843	7686	10,291	0.00	0.00	0.00
15,000	90.00	132.30	5295	-6910	7760	10,391	0.00	0.00	0.00
15,100	90.00	132.30	5295	-6977	7834	10,491	0.00	0.00	0.00
15,200	90.00	132.30	5295	-7045	7908	10,591	0.00	0.00	0.00
15,300	90.00	132.30	5295	-7112	7982	10,691	0.00	0.00	0.00
15,400	90.00	132.30	5295	-7179	8056	10,791	0.00	0.00	0.00
15,500	90.00	132.30	5295	-7247	8130	10,891	0.00	0.00	0.00
15,600	90.00	132.30	5295	-7314	8204	10,991	0.00	0.00	0.00
15,685	90.00	132.30	5295	-7371	8266	11,075	0.00	0.00	0.00

Database:	EDM	**Local Co-ordinate Reference:**	Well # 110H
Company:	DJR Operating	**TVD Reference:**	RKB @ 6947ft (RIG TBD)
Project:	Betonnie Tsosie Unit	**MD Reference:**	RKB @ 6947ft (RIG TBD)
Site:	I10 2308	**North Reference:**	True
Well:	# 110H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original drilling		
Design:	APD		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
110H toe - plan hits target center - Circle (radius 100)	0.00	0.00	5295	-7371	8266	1,699,707	2,762,005	36.22073750	-107.63360010
110H heel - plan hits target center - Circle (radius 50)	0.00	0.00	5295	-639	869	1,906,426	2,774,596	36.23923360	-107.65867810

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
350	350	Surface casing	9.625	12.250
5683	5295	Intermediate casing	7.000	8.750

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1045	1043	Ojo Alamo		0.00	
1148	1145	Kirtland		0.00	
1320	1316	Fruitland		0.00	
1654	1648	Picture Cliffs		0.00	
1871	1864	Lewis		0.00	
2455	2444	Chacra		0.00	
3199	3184	Menefee		0.00	
4060	4040	Point Lookout		0.00	
4257	4236	Mancos		0.00	
4589	4566	Mancos Silt		0.00	
5068	5021	Gallup A		0.00	
5121	5063	Gallup B		0.00	
5246	5151	Gallup C		0.00	
5683	5295	Target		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
4750	4726	-223	392	KOP
5473	5261	-501	716	Top of liner

DJR Operating

Betonnie Tsosie Unit
I10 2308
 # 110H

Original drilling
APD

Anticollision Report

01 May, 2019

Anticollision Report

Company:	DJR Operating	**Local Co-ordinate Reference:**	Well # 110H
Project:	Betonnie Tsosie Unit	**TVD Reference:**	RKB @ 6947ft (RIG TBD)
Reference Site:	I10 2308	**MD Reference:**	RKB @ 6947ft (RIG TBD)
Site Error:	0 ft	**North Reference:**	True
Reference Well:	# 110H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Original drilling	**Database:**	EDM
Reference Design:	APD	**Offset TVD Reference:**	Offset Datum

Reference	APD		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000 ft	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 5/1/2019

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0	15,685	APD (Original drilling)	MWD+IGRF	OWSG MWD + IGRF or WMM

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
I10 2308						
# 731H - Original drilling - APD	450	450	60	57	21.308	CC, ES
# 731H - Original drilling - APD	15,685	16,825	1186	624	2.112	SF

Offset Design I10 2308 - # 731H - Original drilling - APD — Offset Site Error: 0 ft

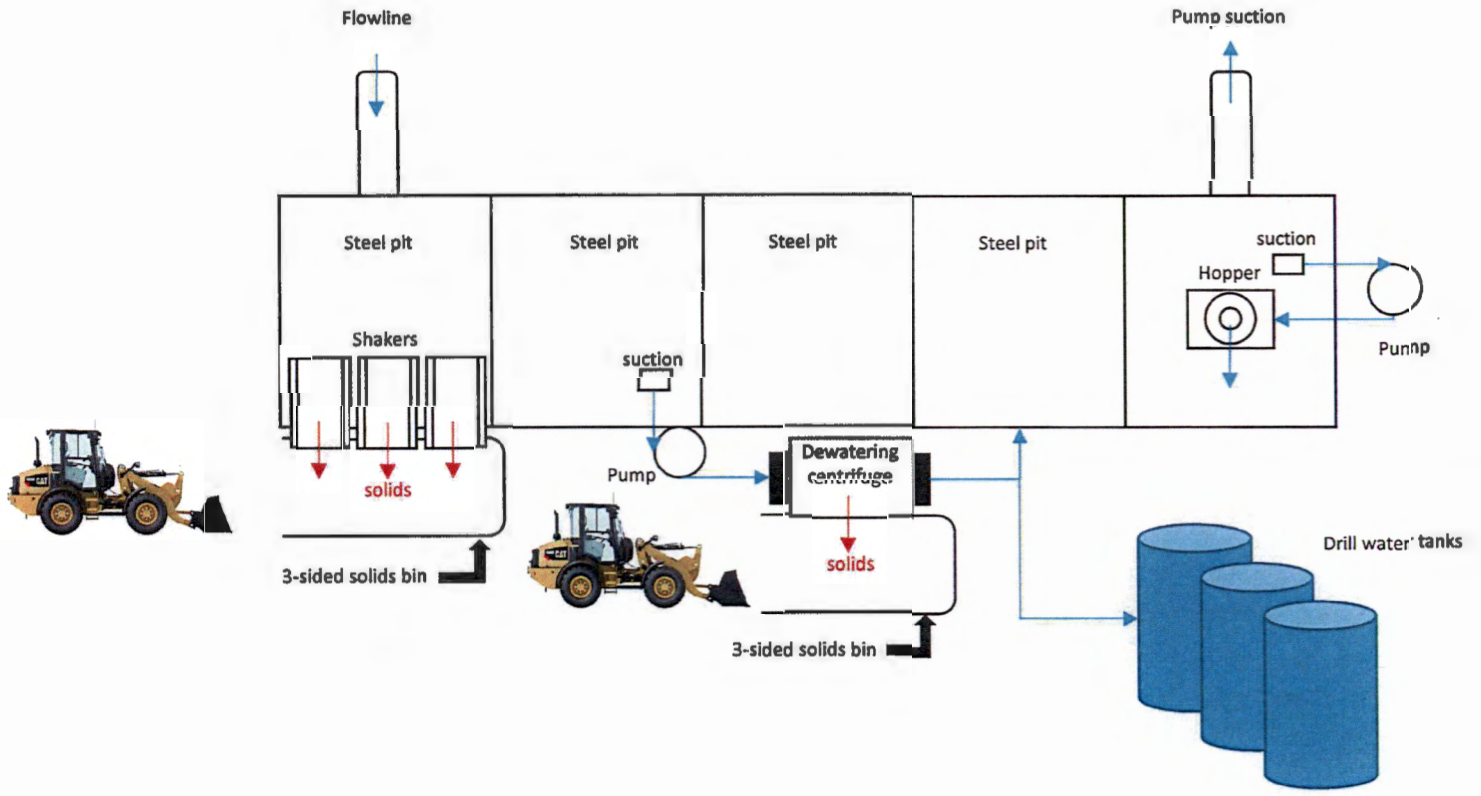
Survey Program: 0-MWD+IGRF — Offset Well Error: 0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0	0	0	0	0	0	-28.45	53	-29	60				
100	100	100	100	0	0	-28.45	53	-29	60	60	0.31	194.741	
200	200	200	200	1	1	-28.45	53	-29	60	59	1.03	58.558	
300	300	300	300	1	1	-28.45	53	-29	60	58	1.74	34.460	
400	400	400	400	1	1	-28.45	53	-29	60	58	2.46	24.414	
450	450	450	450	1	1	-28.45	53	-29	60	57	2.82	21.308	CC, ES
500	500	499	499	2	2	-148.03	53	-28	61	58	3.17	19.169	
600	600	598	597	2	2	-147.51	58	-28	66	62	3.86	17.124	
700	700	695	695	2	2	-146.68	63	-26	77	72	4.57	16.852	
762	762	755	755	3	3	-146.11	68	-24	86	81	5.01	17.243	
800	799	792	791	3	3	-145.76	72	-23	93	88	5.28	17.605	
900	899	887	886	3	3	-144.27	85	-20	112	106	5.99	18.705	
1000	998	982	979	3	3	-142.34	100	-15	134	127	6.70	19.947	
1100	1097	1075	1070	4	4	-140.26	118	-10	158	151	7.41	21.309	
1200	1197	1166	1159	4	4	-138.19	139	-5	185	177	8.12	22.778	
1300	1296	1257	1247	5	5	-136.21	162	2	215	206	8.83	24.320	
1400	1396	1352	1338	5	5	-134.48	187	9	246	236	9.59	25.613	
1500	1495	1447	1429	5	6	-133.14	212	18	277	266	10.35	26.715	
1600	1594	1542	1520	6	6	-132.07	237	23	308	297	11.12	27.664	
1700	1694	1637	1612	6	7	-131.20	262	30	339	327	11.90	28.489	
1800	1793	1732	1703	7	7	-130.48	287	37	370	358	12.67	29.211	
1900	1893	1826	1794	7	8	-129.86	312	44	402	388	13.45	29.847	
2000	1992	1921	1885	7	9	-129.34	337	51	433	419	14.23	30.413	
2100	2091	2016	1977	8	9	-128.88	362	58	464	449	15.02	30.918	
2200	2191	2111	2068	8	10	-128.49	387	65	496	480	15.80	31.371	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

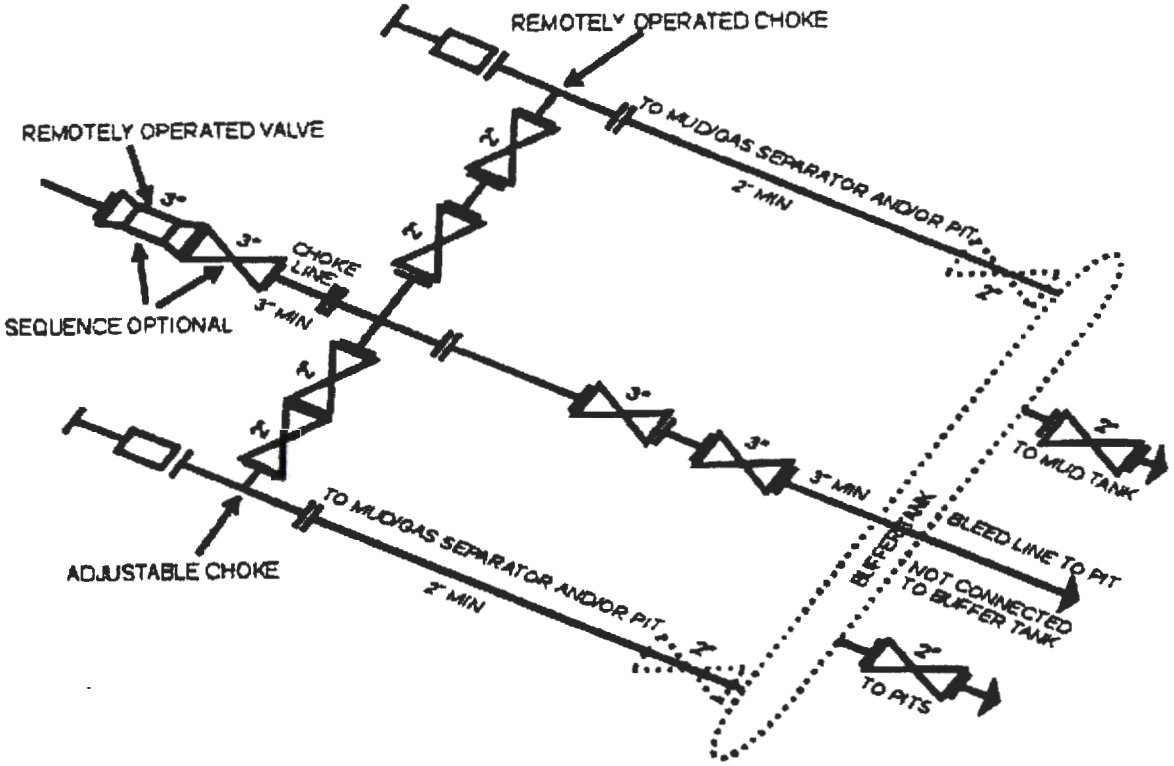
Closed Loop Mud System

DJR Operating



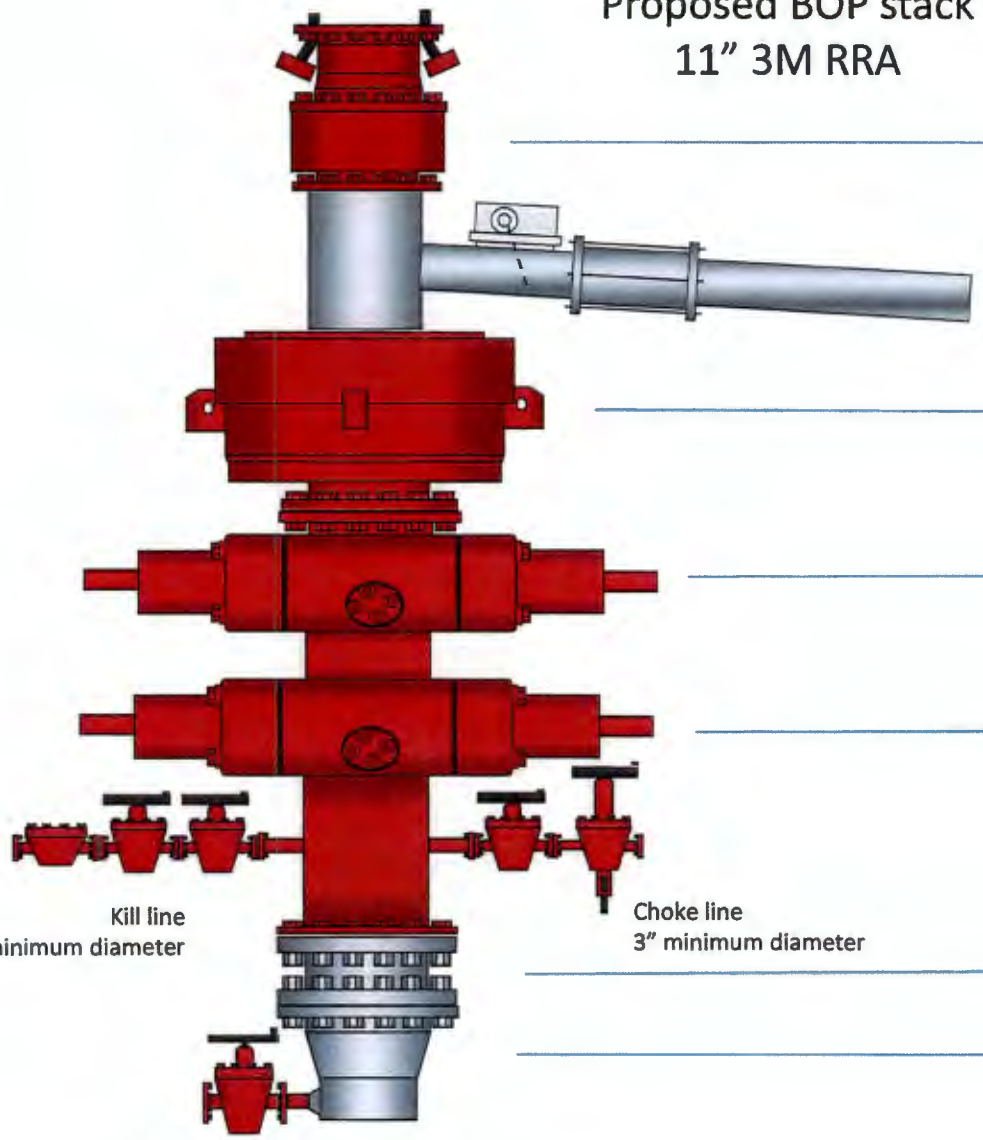
Choke Manifold

Actual system to conform with Onshore Order 2



Proposed BOP stack
11" 3M RRA

DJR Operating



Low pressure rotating head

Flowline

3M Annular preventer

3M Pipe rams

3M Blind rams

Double gate with integral choke/kill outlets

Kill line
2" minimum diameter

Choke line
3" minimum diameter

Tie-down flange
(moves with BOP)

11" 5M Multi-bowl casing head