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 3160-4 or 3160-5 form.

Operator Signature Date: 3/4/19
Well information:

**DJR OPERATING, LLC**
**30-045-35515 BETONNIE TSOSIE WASH UNIT #108H**

Application Type:

☐ P&A ☐ Drilling/Casing Change ☐ Location Change

☐ Recomplete/DHC (For hydraulic fracturing operations review EPA Underground injection control Guidance #84; Submit Gas Capture Plan form prior to spudding or initiating recompletion operations)

☒ Other: BHL Change & New Drilling Plan

Conditions of Approval:

- Notify NMOCD 24 Hours prior to commencing activities

This sundry has been approved by the OCD with the following COA:

BHL and Lateral orientation are exactly the same as the Betonnie Tsosie Wash Unit #109H API 30-045-35624. The 109H BHL has been changed by 1 foot to accommodate the entry of the BHL for this well. **DJR Cannot commence the Re-entry of the 109H until an NOI to change BHL and Lateral orientation have been approved by all agencies.**

NMOCD Approved by Signature

4/15/19
Date

Form 3160-5
(March 2012)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
MAR 04 2019
Farmington Field Office
Bureau of Land Management

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

**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.***

***SUBMIT IN TRIPLICATE*** – *Other instructions on page 2.*

| | |
|---|---|
| 1. Type of Well<br>☑ Oil Well ☐ Gas Well ☐ Other | 5. Lease Serial No.<br>NMNM 136161 |
| | 6. If Indian, Allottee or Tribe Name<br>N/A |
| | 7. If Unit of CA/Agreement, Name and/or No.<br>NMNM 135219X |
| | 8. Well Name and No.<br>BETONNIE TSOSIE WASH UNIT 108H |
| 2. Name of Operator<br>DJR Operating LLC. | 9. API Well No.<br>30-045-35515 |
| 3a. Address<br>1 Road 3263<br>Aztec, New Mexico 87410<br>3b. Phone No. *(include area code)*<br>505-632-3476 | 10. Field and Pool or Exploratory Area<br>Betonnie Tsosie Wash Mancos (OIL) |
| 4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*<br>SHL: 341' FSL and 182' FWL Section 11, T23N, R8W BHL: 330' FSL and 400' FWL Section 13, T23N, R8W | 11. County or Parish, State<br>San Juan County, NM |

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 | ☐ Fracture Treat | ☐ Reclamation | ☐ Well Integrity |
| ☐ Final Abandonment Notice | ☐ Casing Repair | ☐ New Construction | ☐ Recomplete | ☑ Other BHL Change & New Drilling Plan |
| | ☐ 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 recomplete 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 recompletion 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.)

DJR Operating LLC. has an approved APD for the proposed, Betonnie Tsosie Wash Unit 108H well (API 30-045-35515). DJR Operating is submitting this sundry to change the BHL and the Drilling Plan.

Please find attached an updated C-102 package reflecting the BHL change and the new drilling plan.

ADHERE TO PREVIOUS NMOCD CONDITIONS OF APPROVAL

BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

NMOCD

14. I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)*

Steven Merrell

Title Regulatory Specialist

MAR 11 2019
DISTRICT III

Signature Steven Merrell

Date 03/04/2019

**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved by JY Dalton

Title CE

Date 3/7/2019

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.

Office FFO

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)

NMOCD

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 |
|---|---|---|
| 30-045-35515 | 98175 | BETONNIE TSOSIE WASH MANCOS (OIL) |

| [4] Property Code | [5] Property Name | [6] Well Number |
|---|---|---|
| 316771 | BETONNIE TSOSIE WASH UNIT | 108H |

| [7] OGRID No. | [8] Operator Name | [9] Elevation |
|---|---|---|
| 371838 | DJR OPERATING, LLC | 6905' |

## [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 |
|---|---|---|---|---|---|---|---|---|---|
| M | 11 | 23N | 8W | | 341' | SOUTH | 182' | WEST | SAN JUAN |

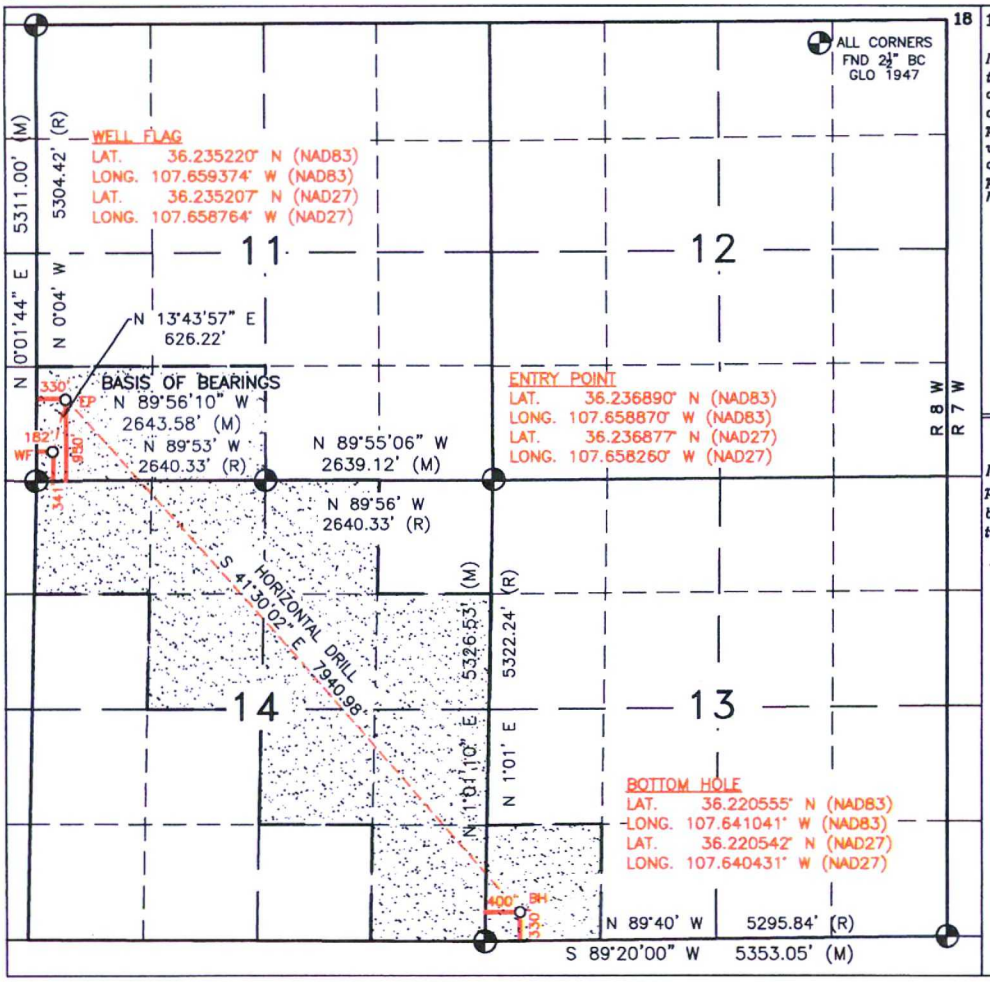
## [11] Bottom Hole Location If Different From Surface

| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| M | 13 | 23N | 8W | | 330' | SOUTH | 400' | WEST | SAN JUAN |

| [12] Dedicated Acres | [13] Joint or Infill | [14] Consolidation Code | [15] Order No. |
|---|---|---|---|
| PENETRATED SPACING UNIT; SW/SW & SE/SW SEC 11 (80 ACRES), NW/NW, NE/NW, SE/NW, NW/NE, SW/NE, SE/NE, NW/SE, NE/SE, & SE/SE SEC 14 (360 ACRES), & SW/SW SEC 13 (40 ACRES) = 480 ACRES TOTAL | | | R-13930A - 13,137 ACRES (UNDIVIDED) |

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




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.*

Steven Merrell 2/28/19
Signature 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.*

MAY 21, 2014
Date of Survey

Signature and Seal of Professional Surveyor:

HENRY P. BROADHURST
NEW MEXICO
11393
02/21/2019
PROFESSIONAL SURVEYOR

Certificate Number 11393

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240
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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

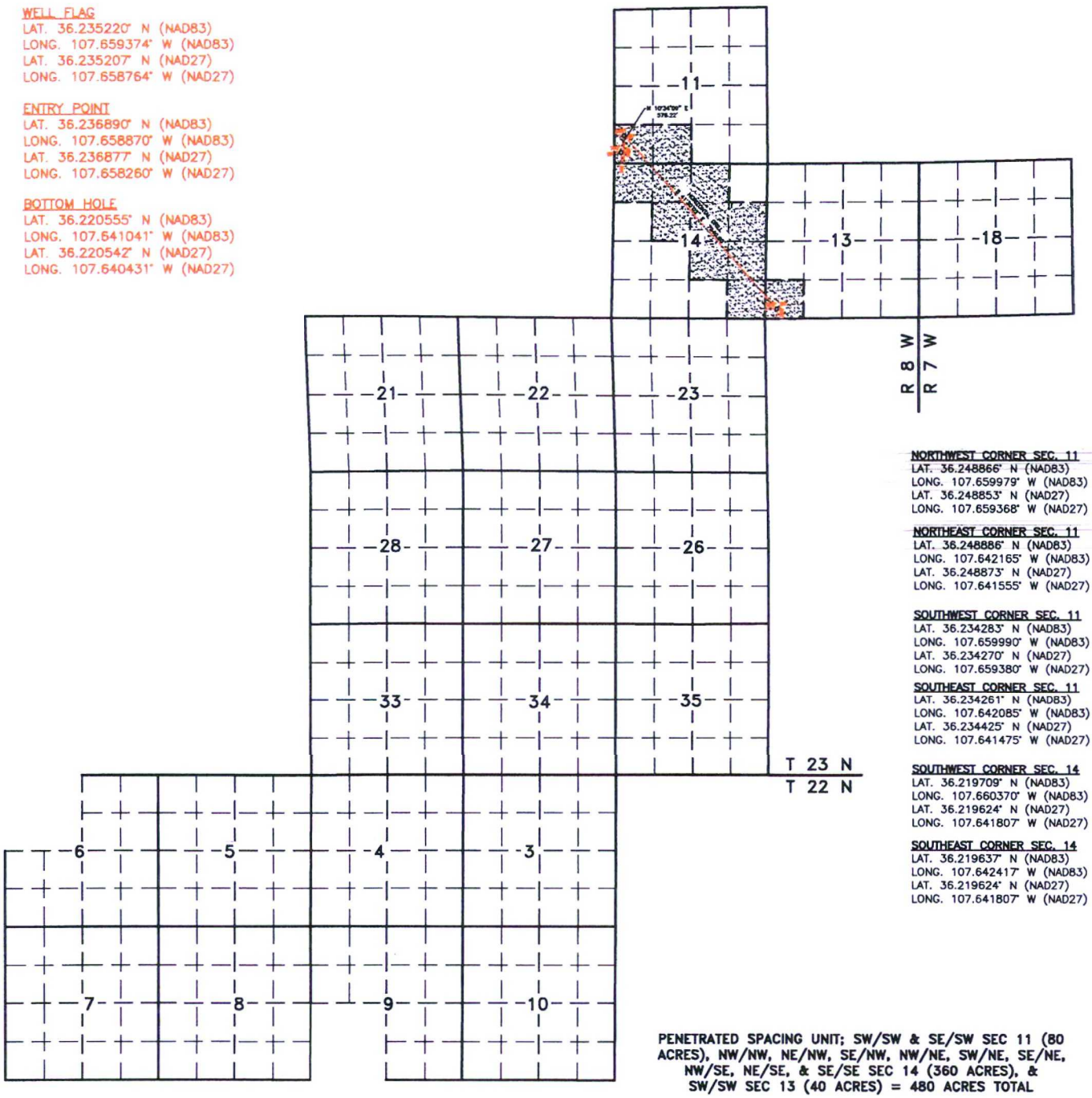
☐ AMENDED REPORT

# DJR OPERATING, LLC
# BETONNIE TSOSIE WASH UNIT #108H

WELL FLAG
LAT. 36.235220° N (NAD83)
LONG. 107.659374° W (NAD83)
LAT. 36.235207° N (NAD27)
LONG. 107.658764° W (NAD27)

ENTRY POINT
LAT. 36.236890° N (NAD83)
LONG. 107.658870° W (NAD83)
LAT. 36.236877° N (NAD27)
LONG. 107.658260° W (NAD27)

BOTTOM HOLE
LAT. 36.220555° N (NAD83)
LONG. 107.641041° W (NAD83)
LAT. 36.220542° N (NAD27)
LONG. 107.640431° W (NAD27)




NORTHWEST CORNER SEC. 11
LAT. 36.248866° N (NAD83)
LONG. 107.659979° W (NAD83)
LAT. 36.248853° N (NAD27)
LONG. 107.659368° W (NAD27)

NORTHEAST CORNER SEC. 11
LAT. 36.248886° N (NAD83)
LONG. 107.642165° W (NAD83)
LAT. 36.248873° N (NAD27)
LONG. 107.641555° W (NAD27)

SOUTHWEST CORNER SEC. 11
LAT. 36.234283° N (NAD83)
LONG. 107.659990° W (NAD83)
LAT. 36.234270° N (NAD27)
LONG. 107.659380° W (NAD27)

SOUTHEAST CORNER SEC. 11
LAT. 36.234261° N (NAD83)
LONG. 107.642085° W (NAD83)
LAT. 36.234425° N (NAD27)
LONG. 107.641475° W (NAD27)

SOUTHWEST CORNER SEC. 14
LAT. 36.219709° N (NAD83)
LONG. 107.660370° W (NAD83)
LAT. 36.219624° N (NAD27)
LONG. 107.641807° W (NAD27)

SOUTHEAST CORNER SEC. 14
LAT. 36.219637° N (NAD83)
LONG. 107.642417° W (NAD83)
LAT. 36.219624° N (NAD27)
LONG. 107.641807° W (NAD27)

**PENETRATED SPACING UNIT; SW/SW & SE/SW SEC 11 (80 ACRES), NW/NW, NE/NW, SE/NW, NW/NE, SW/NE, SE/NE, NW/SE, NE/SE, & SE/SE SEC 14 (360 ACRES), & SW/SW SEC 13 (40 ACRES) = 480 ACRES TOTAL**

13,137.00 ACRES - ALL SEC 18, T23N, R7W; ALL 11, 13, 14, 21-23, 26-28, 33-35, T23N, R8W; ALL 3-5, 7, 8, 10, 6 (E/2 & SW/4), 9 (E/2 & NW/4), T22N R8W - UNDIVIDED UNIT

DJR Operating

# DRILLING PLAN
# Betonnie Tsosie Wash Unit 108H
# San Juan County, New Mexico

**Surface Location**
182-ft FWL & 341-ft FSL
Sec 11 T23N R8W
Graded Elevation 6905' MSL
RKB Elevation 6919' (14' KB)

**SHL Geographical Coordinates (NAD-83)**
Latitude 36.2352200° N
Longitude 107.6593740° W

**Kick Off Point for Horizontal Build Curve**
4615-ft MD
4470-ft TVD

**Local Coordinates (from SHL)**
1009-ft North
327-ft West

**Heel Location (Pay zone entry)**
330-ft FWL & 950-ft FSL
Sec 11 T23N R8W

**Heel Geographical Coordinates (NAD-83)**
Latitude 36.23689° N
Longitude 107.65887000° W

**Bottom Hole Location (TD)**
400-ft FWL & 330-ft FSL
Sec 13 T23N R8W

**BHL Geographical Coordinates (NAD-83)**
Latitude 36.220555° N
Longitude 107.6410410° W

**First Take Point (FTP)**
5837-ft MD
Gallup C Sand

**FTP Geographical Coordinates (NAD-83)**
Latitude 36.2367666° N
Longitude -107.6587353° W

**Last Take Point (LTP)**
13655-ft MD
Gallup C Sand

**LTP Geographical Coordinates (NAD-83)**
Latitude 36.2206786° N
Longitude -107.6411758° W

**Well objectives**
This well is planned as a 7940-ft lateral in the Gallup C sand.

**Bottom Hole temperature and pressure**
The temperature in the Gallup C horizontal objective is 148°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 | 964 | 960 | Sd | W | 8.3 | 8.4 – 8.8 |
| Kirtland | 1107 | 1098 | Sh | - | 8.3 | 8.4 – 8.8 |
| Fruitland | 1285 | 1269 | C | G | 8.3 | 9.0 - 9.5 |
| Picture Cliffs | 1630 | 1601 | Sd | W | 8.3 | 9.0 - 9.5 |
| Lewis | 1855 | 1817 | Sh | - | | 9.0 - 9.5 |
| Chacra | 2458 | 2397 | Sd | - | 8.3 | 9.0 - 9.5 |
| Menefee | 3243 | 3151 | Sd, C | G | 8.3 | 9.0 - 9.5 |
| Point Lookout | 4133 | 4007 | Sd | - | 8.3 | 9.0 - 9.5 |
| Mancos | 4337 | 4203 | Sh | - | | 9.0 - 9.5 |
| Mancos Silt | 4680 | 4533 | Slt | O/G | 6.6 | 9.0 - 9.5 |
| Gallup A | 5161 | 4988 | Slt | O/G | 6.6 | 9.0 - 9.5 |
| Gallup B | 5214 | 5030 | Sd | O/G | 6.6 | 8.8 -9.0 |
| Gallup C | 5339 | 5118 | Sd | O/G | 6.6 | 8.8 -9.0 |
| Target | 5777 | 5262 | 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" | 23 | K-55 | LTC | surf | 5767 | surf | 5262 | surface |
| 4-1/2" | 6-1/8" | 11.6 | P-110 | LTC | 5567 | 13715 | 5228 | 5262 | 5567 |

*Note: all casing will be new*

### Casing Design Load Cases

| | | Casing String | | |
|---|---|---|---|---|
| | Description | 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

| | | Design Factors | | | |
|---|---|---|---|---|---|
| Casing string | Casing OD | 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 |
|---|---|
| Halliburton Name | HALCEM |
| Type | Class G |
| Additives | A |
| Planned top | Surface |
| Density (ppg) | 15.80 |
| Yield (cf/sx) | 1.17 |
| Mix water (gal/sx) | 5.15 |
| Volume (sx) | 205 |
| Volume (bbls) | 42 |

| 7" Intermediate Casing | Lead | Tail |
|---|---|---|
| Halliburton Name | HALCEM | VARICEM |
| Type | Poz/G | Poz/G |
| Additives | Ex, L, SA | Ex, FI, SA, L, THX |
| Planned top | Surface | 3837-ft |
| Density (ppg) | 12.30 | 13.50 |
| Yield (cf/sx) | 1.95 | 1.30 |
| Mix water (gal/sx) | 10.14 | 5.64 |
| Volume (sx) | 486 | 385 |
| Volume (bbls) | 169 | 90 |

| 4-1/2" Production Liner | Lead |
|---|---|
| Halliburton Name | EXTENDACEM |
| Type | Poz/G |
| Additives | B, De, Di, FI, Re, V |
| Planned top | 5567-ft |
| Density (ppg) | 13.3 |
| Yield (cf/sx) | 1.36 |
| Mix water (gal/sx) | 5.94 |
| Volume (sx) | 835 |
| Volume (bbls) | 202 |

**Wellhead & Pressure Control**
The well head will be an 11" 5M multi-bowl system. A 2M 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 – 5767 | 9.0 – 9.5 | 38 – 45 | 8 – 14 | <20 |
| | | | | | | |
| Production | Low solids, non-dispersed | 5767 – 13715 | 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

**Pad name : M11 2308 Pad**
**Well name : Betonnie Tsosoi Wash Unit #108H**

SHL Latitude : 36.23522000
SHL Longitude : -107.65937400

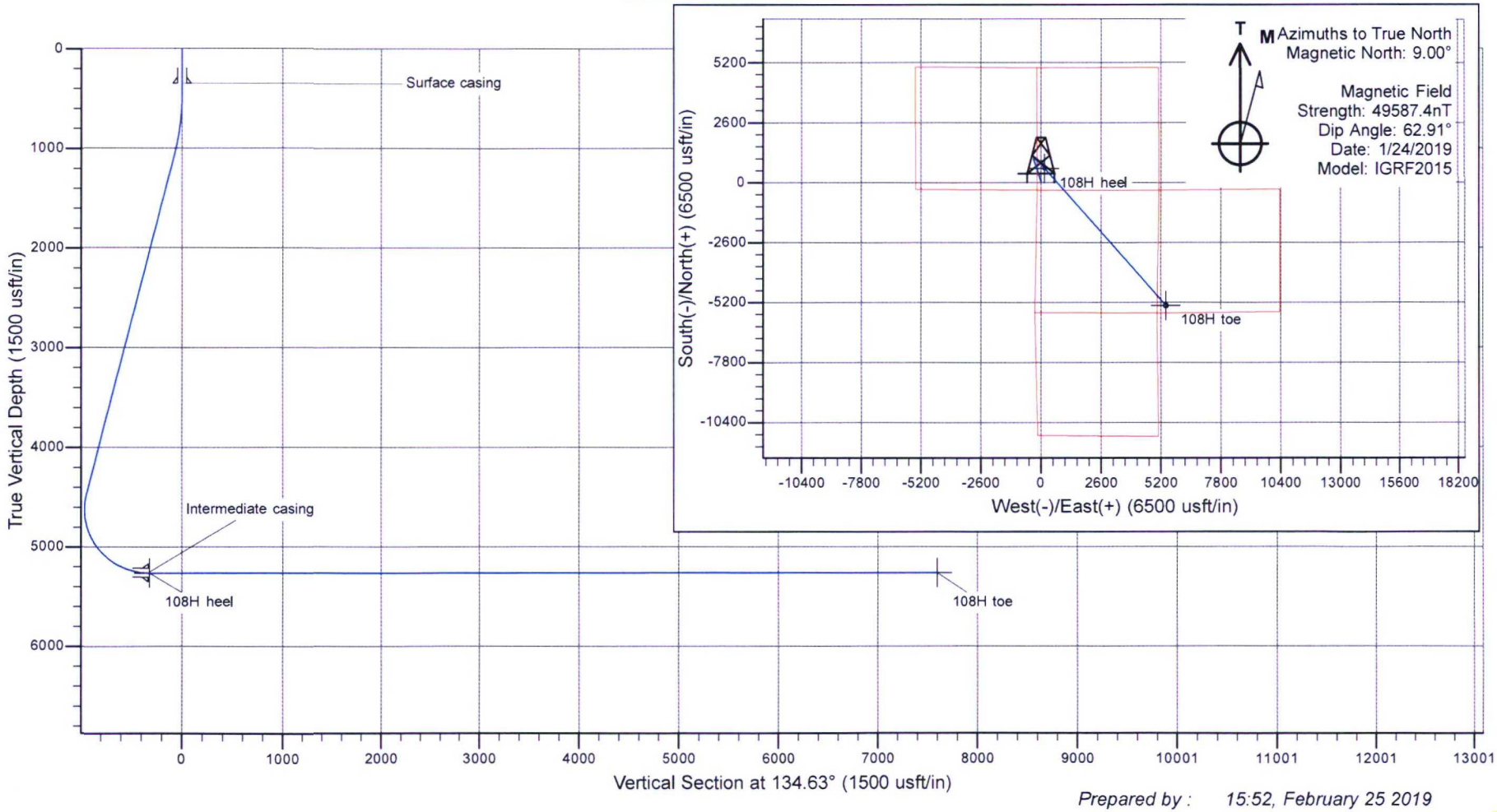
US State Plane 1983
North American Datum 1983
New Mexico Western Zone

TRAJECTORY DETAILS
Pad elevation : 6905.0 RKB @ 6919.0usft (AD 920)

| MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | VSect | Target |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | |
| 450.0 | 0.00 | 0.00 | 450.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | |
| 1090.4 | 16.01 | 342.03 | 1082.1 | 84.6 | -27.4 | 2.50 | 342.03 | -78.9 | |
| 4614.6 | 16.01 | 342.03 | 4469.6 | 1009.2 | -327.4 | 0.00 | 0.00 | -941.9 | |
| 5777.3 | 90.00 | 138.51 | 5262.0 | 607.9 | 148.6 | 9.00 | 155.64 | -321.3 | 108H heel |
| 13715.1 | 90.00 | 138.51 | 5262.0 | -5337.9 | 5407.5 | 0.00 | 0.00 | 7598.3 | 108H toe |

TARGET DETAILS

| Name | TVD | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude |
|---|---|---|---|---|---|---|---|
| 108H heel | 5262.0 | 607.9 | 148.6 | 1905572 | 2774541 | 36.23689000 | -107.65887000 |
| 108H toe | 5262.0 | -5337.9 | 5407.5 | 1899636 | 2779811 | 36.22055500 | -107.64104100 |







*Prepared by : 15:52, February 25 2019*

# DJR Operating

**Betonnie Tsosie Unit**
**M11 2308 Pad**
**# 108H**

**APD plan**

**Plan: APD**

# Standard Planning Report

**25 February, 2019**

# Planning Report

| | | | |
|---|---|---|---|
| **Database:** | EDM | **Local Co-ordinate Reference:** | Well # 108H |
| **Company:** | DJR Operating | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Project:** | Betonnie Tsosie Unit | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site:** | M11 2308 Pad | **North Reference:** | True |
| **Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | APD plan | | |
| **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** | M11 2308 Pad | | | | |
| **Site Position:** | | **Northing:** | 1,904,963 usft | **Latitude:** | 36.23521667 |
| **From:** | Lat/Long | **Easting:** | 2,774,401 usft | **Longitude:** | -107.65935000 |
| **Position Uncertainty:** | 0.0 usft | **Slot Radius:** | 16.000 in | **Grid Convergence:** | 0.10 ° |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well** | # 108H | | | | | |
| **Well Position** | **+N/-S** | 1.2 usft | **Northing:** | 1,904,964 usft | **Latitude:** | 36.23522000 |
| | **+E/-W** | -7.1 usft | **Easting:** | 2,774,393 usft | **Longitude:** | -107.65937400 |
| **Position Uncertainty** | | 0.0 usft | **Wellhead Elevation:** | | **Ground Level:** | 6,905.0 usft |

| | | | | | |
|---|---|---|---|---|---|
| **Wellbore** | APD plan | | | | |
| **Magnetics** | **Model Name** | **Sample Date** | **Declination (°)** | **Dip Angle (°)** | **Field Strength (nT)** |
| | IGRF2015 | 1/24/2019 | 9.00 | 62.91 | 49,587.36277943 |

| | | | | | |
|---|---|---|---|---|---|
| **Design** | APD | | | | |
| **Audit Notes:** | | | | | |
| **Version:** | | **Phase:** | PROTOTYPE | **Tie On Depth:** | 0.0 |
| **Vertical Section:** | **Depth From (TVD) (usft)** | **+N/-S (usft)** | **+E/-W (usft)** | **Direction (°)** | |
| | 0.0 | 0.0 | 0.0 | 134.63 | |

**Plan Survey Tool Program** **Date** 2/25/2019

| | Depth From (usft) | Depth To (usft) | Survey (Wellbore) | Tool Name | Remarks |
|---|---|---|---|---|---|
| 1 | 0.0 | 13,715.1 | APD (APD plan) | MWD+IGRF | |
| | | | | OWSG MWD + IGRF or WMM | |

**Plan Sections**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | TFO (°) | Target |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 450.0 | 0.00 | 0.00 | 450.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1,090.4 | 16.01 | 342.03 | 1,082.1 | 84.6 | -27.4 | 2.50 | 2.50 | 0.00 | 342.03 | |
| 4,614.6 | 16.01 | 342.03 | 4,469.6 | 1,009.2 | -327.4 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5,777.3 | 90.00 | 138.51 | 5,262.0 | 607.9 | 148.6 | 9.00 | 6.36 | 13.46 | 155.64 | 109H heel |
| 13,715.1 | 90.00 | 138.51 | 5,262.0 | -5,337.9 | 5,407.5 | 0.00 | 0.00 | 0.00 | 0.00 | 109H toe |

| | | | |
|---|---|---|---|
| **Database:** | EDM | **Local Co-ordinate Reference:** | Well # 108H |
| **Company:** | DJR Operating | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Project:** | Betonnie Tsosie Unit | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site:** | M11 2308 Pad | **North Reference:** | True |
| **Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | APD plan | | |
| **Design:** | APD | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 100.0 | 0.00 | 0.00 | 100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 200.0 | 0.00 | 0.00 | 200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 300.0 | 0.00 | 0.00 | 300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 350.0 | 0.00 | 0.00 | 350.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| **Surface casing** | | | | | | | | | |
| 400.0 | 0.00 | 0.00 | 400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 450.0 | 0.00 | 0.00 | 450.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 500.0 | 1.25 | 342.03 | 500.0 | 0.5 | -0.2 | -0.5 | 2.50 | 2.50 | 0.00 |
| 600.0 | 3.75 | 342.03 | 599.9 | 4.7 | -1.5 | -4.4 | 2.50 | 2.50 | 0.00 |
| 700.0 | 6.25 | 342.03 | 699.5 | 13.0 | -4.2 | -12.1 | 2.50 | 2.50 | 0.00 |
| 800.0 | 8.75 | 342.03 | 798.6 | 25.4 | -8.2 | -23.7 | 2.50 | 2.50 | 0.00 |
| 900.0 | 11.25 | 342.03 | 897.1 | 41.9 | -13.6 | -39.1 | 2.50 | 2.50 | 0.00 |
| 1,000.0 | 13.75 | 342.03 | 994.7 | 62.5 | -20.3 | -58.3 | 2.50 | 2.50 | 0.00 |
| 1,001.3 | 13.78 | 342.03 | 996.0 | 62.8 | -20.4 | -58.6 | 2.50 | 2.50 | 0.00 |
| **Ojo Alamo** | | | | | | | | | |
| 1,090.4 | 16.01 | 342.03 | 1,082.1 | 84.6 | -27.4 | -78.9 | 2.50 | 2.50 | 0.00 |
| 1,100.0 | 16.01 | 342.03 | 1,091.3 | 87.1 | -28.2 | -81.3 | 0.00 | 0.00 | 0.00 |
| 1,106.9 | 16.01 | 342.03 | 1,098.0 | 88.9 | -28.8 | -83.0 | 0.00 | 0.00 | 0.00 |
| **Kirtland** | | | | | | | | | |
| 1,200.0 | 16.01 | 342.03 | 1,187.4 | 113.3 | -36.8 | -105.8 | 0.00 | 0.00 | 0.00 |
| 1,284.8 | 16.01 | 342.03 | 1,269.0 | 135.6 | -44.0 | -126.5 | 0.00 | 0.00 | 0.00 |
| **Fruitland** | | | | | | | | | |
| 1,300.0 | 16.01 | 342.03 | 1,283.6 | 139.5 | -45.3 | -130.3 | 0.00 | 0.00 | 0.00 |
| 1,400.0 | 16.01 | 342.03 | 1,379.7 | 165.8 | -53.8 | -154.7 | 0.00 | 0.00 | 0.00 |
| 1,500.0 | 16.01 | 342.03 | 1,475.8 | 192.0 | -62.3 | -179.2 | 0.00 | 0.00 | 0.00 |
| 1,600.0 | 16.01 | 342.03 | 1,571.9 | 218.3 | -70.8 | -203.7 | 0.00 | 0.00 | 0.00 |
| 1,630.2 | 16.01 | 342.03 | 1,601.0 | 226.2 | -73.4 | -211.1 | 0.00 | 0.00 | 0.00 |
| **Picture Cliffs** | | | | | | | | | |
| 1,700.0 | 16.01 | 342.03 | 1,668.1 | 244.5 | -79.3 | -228.2 | 0.00 | 0.00 | 0.00 |
| 1,800.0 | 16.01 | 342.03 | 1,764.2 | 270.7 | -87.8 | -252.7 | 0.00 | 0.00 | 0.00 |
| 1,855.0 | 16.01 | 342.03 | 1,817.0 | 285.1 | -92.5 | -266.2 | 0.00 | 0.00 | 0.00 |
| **Lewis** | | | | | | | | | |
| 1,900.0 | 16.01 | 342.03 | 1,860.3 | 297.0 | -96.3 | -277.2 | 0.00 | 0.00 | 0.00 |
| 2,000.0 | 16.01 | 342.03 | 1,956.4 | 323.2 | -104.9 | -301.7 | 0.00 | 0.00 | 0.00 |
| 2,100.0 | 16.01 | 342.03 | 2,052.5 | 349.4 | -113.4 | -326.2 | 0.00 | 0.00 | 0.00 |
| 2,200.0 | 16.01 | 342.03 | 2,148.7 | 375.7 | -121.9 | -350.6 | 0.00 | 0.00 | 0.00 |
| 2,300.0 | 16.01 | 342.03 | 2,244.8 | 401.9 | -130.4 | -375.1 | 0.00 | 0.00 | 0.00 |
| 2,400.0 | 16.01 | 342.03 | 2,340.9 | 428.1 | -138.9 | -399.6 | 0.00 | 0.00 | 0.00 |
| 2,458.4 | 16.01 | 342.03 | 2,397.0 | 443.5 | -143.9 | -413.9 | 0.00 | 0.00 | 0.00 |
| **Chacra** | | | | | | | | | |
| 2,500.0 | 16.01 | 342.03 | 2,437.0 | 454.4 | -147.4 | -424.1 | 0.00 | 0.00 | 0.00 |
| 2,600.0 | 16.01 | 342.03 | 2,533.1 | 480.6 | -155.9 | -448.6 | 0.00 | 0.00 | 0.00 |
| 2,700.0 | 16.01 | 342.03 | 2,629.3 | 506.9 | -164.4 | -473.1 | 0.00 | 0.00 | 0.00 |
| 2,800.0 | 16.01 | 342.03 | 2,725.4 | 533.1 | -172.9 | -497.6 | 0.00 | 0.00 | 0.00 |
| 2,900.0 | 16.01 | 342.03 | 2,821.5 | 559.3 | -181.5 | -522.1 | 0.00 | 0.00 | 0.00 |
| 3,000.0 | 16.01 | 342.03 | 2,917.6 | 585.6 | -190.0 | -546.6 | 0.00 | 0.00 | 0.00 |
| 3,100.0 | 16.01 | 342.03 | 3,013.7 | 611.8 | -198.5 | -571.0 | 0.00 | 0.00 | 0.00 |
| 3,151.2 | 16.01 | 342.03 | 3,063.0 | 625.2 | -202.8 | -583.6 | 0.00 | 0.00 | 0.00 |
| **Cliffhouse** | | | | | | | | | |
| 3,200.0 | 16.01 | 342.03 | 3,109.9 | 638.0 | -207.0 | -595.5 | 0.00 | 0.00 | 0.00 |
| 3,242.8 | 16.01 | 342.03 | 3,151.0 | 649.3 | -210.6 | -606.0 | 0.00 | 0.00 | 0.00 |
| **Menefee** | | | | | | | | | |

| | | | |
|---|---|---|---|
| **Database:** | EDM | **Local Co-ordinate Reference:** | Well # 108H |
| **Company:** | DJR Operating | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Project:** | Betonnie Tsosie Unit | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site:** | M11 2308 Pad | **North Reference:** | True |
| **Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | APD plan | | |
| **Design:** | APD | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 3,300.0 | 16.01 | 342.03 | 3,206.0 | 664.3 | -215.5 | -620.0 | 0.00 | 0.00 | 0.00 |
| 3,400.0 | 16.01 | 342.03 | 3,302.1 | 690.5 | -224.0 | -644.5 | 0.00 | 0.00 | 0.00 |
| 3,500.0 | 16.01 | 342.03 | 3,398.2 | 716.7 | -232.5 | -669.0 | 0.00 | 0.00 | 0.00 |
| 3,600.0 | 16.01 | 342.03 | 3,494.3 | 743.0 | -241.0 | -693.5 | 0.00 | 0.00 | 0.00 |
| 3,700.0 | 16.01 | 342.03 | 3,590.5 | 769.2 | -249.6 | -718.0 | 0.00 | 0.00 | 0.00 |
| 3,800.0 | 16.01 | 342.03 | 3,686.6 | 795.4 | -258.1 | -742.5 | 0.00 | 0.00 | 0.00 |
| 3,900.0 | 16.01 | 342.03 | 3,782.7 | 821.7 | -266.6 | -767.0 | 0.00 | 0.00 | 0.00 |
| 4,000.0 | 16.01 | 342.03 | 3,878.8 | 847.9 | -275.1 | -791.4 | 0.00 | 0.00 | 0.00 |
| 4,100.0 | 16.01 | 342.03 | 3,975.0 | 874.2 | -283.6 | -815.9 | 0.00 | 0.00 | 0.00 |
| 4,133.3 | 16.01 | 342.03 | 4,007.0 | 882.9 | -286.4 | -824.1 | 0.00 | 0.00 | 0.00 |
| **Point Lookout** | | | | | | | | | |
| 4,200.0 | 16.01 | 342.03 | 4,071.1 | 900.4 | -292.1 | -840.4 | 0.00 | 0.00 | 0.00 |
| 4,300.0 | 16.01 | 342.03 | 4,167.2 | 926.6 | -300.6 | -864.9 | 0.00 | 0.00 | 0.00 |
| 4,337.3 | 16.01 | 342.03 | 4,203.0 | 936.4 | -303.8 | -874.0 | 0.00 | 0.00 | 0.00 |
| **Mancos** | | | | | | | | | |
| 4,400.0 | 16.01 | 342.03 | 4,263.3 | 952.9 | -309.1 | -889.4 | 0.00 | 0.00 | 0.00 |
| 4,500.0 | 16.01 | 342.03 | 4,359.4 | 979.1 | -317.6 | -913.9 | 0.00 | 0.00 | 0.00 |
| 4,600.0 | 16.01 | 342.03 | 4,455.6 | 1,005.3 | -326.2 | -938.4 | 0.00 | 0.00 | 0.00 |
| 4,614.6 | 16.01 | 342.03 | 4,469.6 | 1,009.2 | -327.4 | -942.0 | 0.00 | 0.00 | 0.00 |
| **KOP** | | | | | | | | | |
| 4,650.0 | 13.17 | 347.81 | 4,503.8 | 1,017.8 | -329.8 | -949.7 | 9.01 | -8.03 | 16.33 |
| 4,679.8 | 10.93 | 354.89 | 4,533.0 | 1,023.9 | -330.7 | -954.7 | 9.00 | -7.53 | 23.76 |
| **Mancos Silt** | | | | | | | | | |
| 4,700.0 | 9.53 | 1.49 | 4,552.9 | 1,027.5 | -330.9 | -957.3 | 9.00 | -6.89 | 32.68 |
| 4,750.0 | 6.98 | 27.82 | 4,602.4 | 1,034.3 | -329.3 | -961.0 | 9.00 | -5.11 | 52.66 |
| 4,800.0 | 6.84 | 65.89 | 4,652.0 | 1,038.2 | -325.2 | -960.8 | 9.00 | -0.27 | 76.15 |
| 4,850.0 | 9.23 | 93.73 | 4,701.5 | 1,039.2 | -318.5 | -956.7 | 9.00 | 4.78 | 55.67 |
| 4,900.0 | 12.81 | 108.26 | 4,750.6 | 1,037.2 | -309.2 | -948.7 | 9.00 | 7.15 | 29.07 |
| 4,950.0 | 16.83 | 116.26 | 4,799.0 | 1,032.2 | -297.4 | -936.8 | 9.00 | 8.04 | 15.99 |
| 5,000.0 | 21.04 | 121.19 | 4,846.2 | 1,024.4 | -283.3 | -921.2 | 9.00 | 8.42 | 9.86 |
| 5,050.0 | 25.34 | 124.52 | 4,892.2 | 1,013.7 | -266.8 | -901.9 | 9.00 | 8.61 | 6.66 |
| 5,100.0 | 29.70 | 126.93 | 4,936.5 | 1,000.1 | -248.0 | -879.1 | 9.00 | 8.72 | 4.82 |
| 5,150.0 | 34.10 | 128.77 | 4,979.0 | 983.9 | -227.2 | -852.9 | 9.00 | 8.79 | 3.68 |
| 5,161.0 | 35.06 | 129.12 | 4,988.0 | 980.0 | -222.4 | -846.7 | 9.00 | 8.82 | 3.18 |
| **Gallup A** | | | | | | | | | |
| 5,200.0 | 38.51 | 130.24 | 5,019.3 | 965.1 | -204.4 | -823.4 | 9.00 | 8.84 | 2.86 |
| 5,213.8 | 39.74 | 130.59 | 5,030.0 | 959.4 | -197.7 | -814.7 | 9.00 | 8.85 | 2.57 |
| **Gallup B** | | | | | | | | | |
| 5,250.0 | 42.94 | 131.44 | 5,057.1 | 943.7 | -179.7 | -790.9 | 9.00 | 8.87 | 2.35 |
| 5,300.0 | 47.39 | 132.46 | 5,092.4 | 920.0 | -153.3 | -755.5 | 9.00 | 8.88 | 2.04 |
| 5,339.1 | 50.87 | 133.16 | 5,118.0 | 899.9 | -131.6 | -725.9 | 9.00 | 8.90 | 1.79 |
| **Gallup C** | | | | | | | | | |
| 5,350.0 | 51.83 | 133.34 | 5,124.8 | 894.1 | -125.5 | -717.4 | 9.00 | 8.90 | 1.68 |
| 5,400.0 | 56.29 | 134.13 | 5,154.1 | 866.1 | -96.2 | -676.9 | 9.00 | 8.91 | 1.56 |
| 5,450.0 | 60.75 | 134.83 | 5,180.2 | 836.2 | -65.8 | -634.3 | 9.00 | 8.92 | 1.41 |
| 5,500.0 | 65.21 | 135.48 | 5,202.9 | 804.7 | -34.4 | -589.8 | 9.00 | 8.93 | 1.29 |
| 5,550.0 | 69.68 | 136.08 | 5,222.1 | 771.6 | -2.2 | -543.6 | 9.00 | 8.93 | 1.20 |
| 5,600.0 | 74.15 | 136.64 | 5,237.6 | 737.2 | 30.6 | -496.1 | 9.00 | 8.94 | 1.13 |
| 5,650.0 | 78.62 | 137.19 | 5,249.4 | 701.7 | 63.7 | -447.6 | 9.00 | 8.94 | 1.08 |
| 5,700.0 | 83.09 | 137.71 | 5,257.3 | 665.4 | 97.1 | -398.3 | 9.00 | 8.94 | 1.05 |
| 5,750.0 | 87.56 | 138.23 | 5,261.4 | 628.3 | 130.5 | -348.6 | 9.00 | 8.94 | 1.03 |
| 5,767.3 | 89.10 | 138.41 | 5,261.9 | 615.4 | 142.0 | -331.3 | 9.00 | 8.94 | 1.02 |
| **Intermediate casing** | | | | | | | | | |

| | | | |
|---|---|---|---|
| **Database:** | EDM | **Local Co-ordinate Reference:** | Well # 108H |
| **Company:** | DJR Operating | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Project:** | Betonnie Tsosie Unit | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site:** | M11 2308 Pad | **North Reference:** | True |
| **Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | APD plan | | |
| **Design:** | APD | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 5,777.3 | 90.00 | 138.51 | 5,262.0 | 607.9 | 148.6 | -321.3 | 9.00 | 8.94 | 1.02 |
| **Target** | | | | | | | | | |
| 5,800.0 | 90.00 | 138.51 | 5,262.0 | 590.9 | 163.6 | -298.7 | 0.00 | 0.00 | 0.00 |
| 5,837.3 | 90.00 | 138.51 | 5,262.0 | 563.0 | 188.4 | -261.5 | 0.00 | 0.00 | 0.00 |
| **First take point** | | | | | | | | | |
| 5,900.0 | 90.00 | 138.51 | 5,262.0 | 516.0 | 229.9 | -198.9 | 0.00 | 0.00 | 0.00 |
| 6,000.0 | 90.00 | 138.51 | 5,262.0 | 441.1 | 296.1 | -99.1 | 0.00 | 0.00 | 0.00 |
| 6,100.0 | 90.00 | 138.51 | 5,262.0 | 366.2 | 362.4 | 0.6 | 0.00 | 0.00 | 0.00 |
| 6,200.0 | 90.00 | 138.51 | 5,262.0 | 291.3 | 428.7 | 100.4 | 0.00 | 0.00 | 0.00 |
| 6,300.0 | 90.00 | 138.51 | 5,262.0 | 216.4 | 494.9 | 200.2 | 0.00 | 0.00 | 0.00 |
| 6,400.0 | 90.00 | 138.51 | 5,262.0 | 141.5 | 561.2 | 299.9 | 0.00 | 0.00 | 0.00 |
| 6,500.0 | 90.00 | 138.51 | 5,262.0 | 66.6 | 627.4 | 399.7 | 0.00 | 0.00 | 0.00 |
| 6,600.0 | 90.00 | 138.51 | 5,262.0 | -8.3 | 693.7 | 499.5 | 0.00 | 0.00 | 0.00 |
| 6,700.0 | 90.00 | 138.51 | 5,262.0 | -83.2 | 759.9 | 599.3 | 0.00 | 0.00 | 0.00 |
| 6,800.0 | 90.00 | 138.51 | 5,262.0 | -158.1 | 826.2 | 699.0 | 0.00 | 0.00 | 0.00 |
| 6,900.0 | 90.00 | 138.51 | 5,262.0 | -233.0 | 892.4 | 798.8 | 0.00 | 0.00 | 0.00 |
| 7,000.0 | 90.00 | 138.51 | 5,262.0 | -307.9 | 958.7 | 898.6 | 0.00 | 0.00 | 0.00 |
| 7,100.0 | 90.00 | 138.51 | 5,262.0 | -382.8 | 1,024.9 | 998.3 | 0.00 | 0.00 | 0.00 |
| 7,200.0 | 90.00 | 138.51 | 5,262.0 | -457.7 | 1,091.2 | 1,098.1 | 0.00 | 0.00 | 0.00 |
| 7,300.0 | 90.00 | 138.51 | 5,262.0 | -532.6 | 1,157.4 | 1,197.9 | 0.00 | 0.00 | 0.00 |
| 7,400.0 | 90.00 | 138.51 | 5,262.0 | -607.5 | 1,223.7 | 1,297.7 | 0.00 | 0.00 | 0.00 |
| 7,500.0 | 90.00 | 138.51 | 5,262.0 | -682.4 | 1,289.9 | 1,397.4 | 0.00 | 0.00 | 0.00 |
| 7,600.0 | 90.00 | 138.51 | 5,262.0 | -757.3 | 1,356.2 | 1,497.2 | 0.00 | 0.00 | 0.00 |
| 7,700.0 | 90.00 | 138.51 | 5,262.0 | -832.3 | 1,422.4 | 1,597.0 | 0.00 | 0.00 | 0.00 |
| 7,800.0 | 90.00 | 138.51 | 5,262.0 | -907.2 | 1,488.7 | 1,696.7 | 0.00 | 0.00 | 0.00 |
| 7,900.0 | 90.00 | 138.51 | 5,262.0 | -982.1 | 1,554.9 | 1,796.5 | 0.00 | 0.00 | 0.00 |
| 8,000.0 | 90.00 | 138.51 | 5,262.0 | -1,057.0 | 1,621.2 | 1,896.3 | 0.00 | 0.00 | 0.00 |
| 8,100.0 | 90.00 | 138.51 | 5,262.0 | -1,131.9 | 1,687.4 | 1,996.1 | 0.00 | 0.00 | 0.00 |
| 8,200.0 | 90.00 | 138.51 | 5,262.0 | -1,206.8 | 1,753.7 | 2,095.8 | 0.00 | 0.00 | 0.00 |
| 8,300.0 | 90.00 | 138.51 | 5,262.0 | -1,281.7 | 1,819.9 | 2,195.6 | 0.00 | 0.00 | 0.00 |
| 8,400.0 | 90.00 | 138.51 | 5,262.0 | -1,356.6 | 1,886.2 | 2,295.4 | 0.00 | 0.00 | 0.00 |
| 8,500.0 | 90.00 | 138.51 | 5,262.0 | -1,431.5 | 1,952.4 | 2,395.1 | 0.00 | 0.00 | 0.00 |
| 8,600.0 | 90.00 | 138.51 | 5,262.0 | -1,506.4 | 2,018.7 | 2,494.9 | 0.00 | 0.00 | 0.00 |
| 8,700.0 | 90.00 | 138.51 | 5,262.0 | -1,581.3 | 2,084.9 | 2,594.7 | 0.00 | 0.00 | 0.00 |
| 8,800.0 | 90.00 | 138.51 | 5,262.0 | -1,656.2 | 2,151.2 | 2,694.4 | 0.00 | 0.00 | 0.00 |
| 8,900.0 | 90.00 | 138.51 | 5,262.0 | -1,731.1 | 2,217.4 | 2,794.2 | 0.00 | 0.00 | 0.00 |
| 9,000.0 | 90.00 | 138.51 | 5,262.0 | -1,806.0 | 2,283.7 | 2,894.0 | 0.00 | 0.00 | 0.00 |
| 9,100.0 | 90.00 | 138.51 | 5,262.0 | -1,880.9 | 2,349.9 | 2,993.8 | 0.00 | 0.00 | 0.00 |
| 9,200.0 | 90.00 | 138.51 | 5,262.0 | -1,955.8 | 2,416.2 | 3,093.5 | 0.00 | 0.00 | 0.00 |
| 9,300.0 | 90.00 | 138.51 | 5,262.0 | -2,030.7 | 2,482.4 | 3,193.3 | 0.00 | 0.00 | 0.00 |
| 9,400.0 | 90.00 | 138.51 | 5,262.0 | -2,105.6 | 2,548.7 | 3,293.1 | 0.00 | 0.00 | 0.00 |
| 9,500.0 | 90.00 | 138.51 | 5,262.0 | -2,180.5 | 2,615.0 | 3,392.8 | 0.00 | 0.00 | 0.00 |
| 9,600.0 | 90.00 | 138.51 | 5,262.0 | -2,255.4 | 2,681.2 | 3,492.6 | 0.00 | 0.00 | 0.00 |
| 9,700.0 | 90.00 | 138.51 | 5,262.0 | -2,330.3 | 2,747.5 | 3,592.4 | 0.00 | 0.00 | 0.00 |
| 9,800.0 | 90.00 | 138.51 | 5,262.0 | -2,405.3 | 2,813.7 | 3,692.2 | 0.00 | 0.00 | 0.00 |
| 9,900.0 | 90.00 | 138.51 | 5,262.0 | -2,480.2 | 2,880.0 | 3,791.9 | 0.00 | 0.00 | 0.00 |
| 10,000.0 | 90.00 | 138.51 | 5,262.0 | -2,555.1 | 2,946.2 | 3,891.7 | 0.00 | 0.00 | 0.00 |
| 10,100.0 | 90.00 | 138.51 | 5,262.0 | -2,630.0 | 3,012.5 | 3,991.5 | 0.00 | 0.00 | 0.00 |
| 10,200.0 | 90.00 | 138.51 | 5,262.0 | -2,704.9 | 3,078.7 | 4,091.2 | 0.00 | 0.00 | 0.00 |
| 10,300.0 | 90.00 | 138.51 | 5,262.0 | -2,779.8 | 3,145.0 | 4,191.0 | 0.00 | 0.00 | 0.00 |
| 10,400.0 | 90.00 | 138.51 | 5,262.0 | -2,854.7 | 3,211.2 | 4,290.8 | 0.00 | 0.00 | 0.00 |
| 10,500.0 | 90.00 | 138.51 | 5,262.0 | -2,929.6 | 3,277.5 | 4,390.6 | 0.00 | 0.00 | 0.00 |
| 10,600.0 | 90.00 | 138.51 | 5,262.0 | -3,004.5 | 3,343.7 | 4,490.3 | 0.00 | 0.00 | 0.00 |

| | | | |
|---|---|---|---|
| **Database:** | EDM | **Local Co-ordinate Reference:** | Well # 108H |
| **Company:** | DJR Operating | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Project:** | Betonnie Tsosie Unit | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site:** | M11 2308 Pad | **North Reference:** | True |
| **Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | APD plan | | |
| **Design:** | APD | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 10,700.0 | 90.00 | 138.51 | 5,262.0 | -3,079.4 | 3,410.0 | 4,590.1 | 0.00 | 0.00 | 0.00 |
| 10,800.0 | 90.00 | 138.51 | 5,262.0 | -3,154.3 | 3,476.2 | 4,689.9 | 0.00 | 0.00 | 0.00 |
| 10,900.0 | 90.00 | 138.51 | 5,262.0 | -3,229.2 | 3,542.5 | 4,789.6 | 0.00 | 0.00 | 0.00 |
| 11,000.0 | 90.00 | 138.51 | 5,262.0 | -3,304.1 | 3,608.7 | 4,889.4 | 0.00 | 0.00 | 0.00 |
| 11,100.0 | 90.00 | 138.51 | 5,262.0 | -3,379.0 | 3,675.0 | 4,989.2 | 0.00 | 0.00 | 0.00 |
| 11,200.0 | 90.00 | 138.51 | 5,262.0 | -3,453.9 | 3,741.2 | 5,088.9 | 0.00 | 0.00 | 0.00 |
| 11,300.0 | 90.00 | 138.51 | 5,262.0 | -3,528.8 | 3,807.5 | 5,188.7 | 0.00 | 0.00 | 0.00 |
| 11,400.0 | 90.00 | 138.51 | 5,262.0 | -3,603.7 | 3,873.7 | 5,288.5 | 0.00 | 0.00 | 0.00 |
| 11,500.0 | 90.00 | 138.51 | 5,262.0 | -3,678.6 | 3,940.0 | 5,388.3 | 0.00 | 0.00 | 0.00 |
| 11,600.0 | 90.00 | 138.51 | 5,262.0 | -3,753.5 | 4,006.2 | 5,488.0 | 0.00 | 0.00 | 0.00 |
| 11,700.0 | 90.00 | 138.51 | 5,262.0 | -3,828.4 | 4,072.5 | 5,587.8 | 0.00 | 0.00 | 0.00 |
| 11,800.0 | 90.00 | 138.51 | 5,262.0 | -3,903.3 | 4,138.7 | 5,687.6 | 0.00 | 0.00 | 0.00 |
| 11,900.0 | 90.00 | 138.51 | 5,262.0 | -3,978.3 | 4,205.0 | 5,787.3 | 0.00 | 0.00 | 0.00 |
| 12,000.0 | 90.00 | 138.51 | 5,262.0 | -4,053.2 | 4,271.2 | 5,887.1 | 0.00 | 0.00 | 0.00 |
| 12,100.0 | 90.00 | 138.51 | 5,262.0 | -4,128.1 | 4,337.5 | 5,986.9 | 0.00 | 0.00 | 0.00 |
| 12,200.0 | 90.00 | 138.51 | 5,262.0 | -4,203.0 | 4,403.7 | 6,086.7 | 0.00 | 0.00 | 0.00 |
| 12,300.0 | 90.00 | 138.51 | 5,262.0 | -4,277.9 | 4,470.0 | 6,186.4 | 0.00 | 0.00 | 0.00 |
| 12,400.0 | 90.00 | 138.51 | 5,262.0 | -4,352.8 | 4,536.2 | 6,286.2 | 0.00 | 0.00 | 0.00 |
| 12,500.0 | 90.00 | 138.51 | 5,262.0 | -4,427.7 | 4,602.5 | 6,386.0 | 0.00 | 0.00 | 0.00 |
| 12,600.0 | 90.00 | 138.51 | 5,262.0 | -4,502.6 | 4,668.7 | 6,485.7 | 0.00 | 0.00 | 0.00 |
| 12,700.0 | 90.00 | 138.51 | 5,262.0 | -4,577.5 | 4,735.0 | 6,585.5 | 0.00 | 0.00 | 0.00 |
| 12,800.0 | 90.00 | 138.51 | 5,262.0 | -4,652.4 | 4,801.3 | 6,685.3 | 0.00 | 0.00 | 0.00 |
| 12,900.0 | 90.00 | 138.51 | 5,262.0 | -4,727.3 | 4,867.5 | 6,785.1 | 0.00 | 0.00 | 0.00 |
| 13,000.0 | 90.00 | 138.51 | 5,262.0 | -4,802.2 | 4,933.8 | 6,884.8 | 0.00 | 0.00 | 0.00 |
| 13,100.0 | 90.00 | 138.51 | 5,262.0 | -4,877.1 | 5,000.0 | 6,984.6 | 0.00 | 0.00 | 0.00 |
| 13,200.0 | 90.00 | 138.51 | 5,262.0 | -4,952.0 | 5,066.3 | 7,084.4 | 0.00 | 0.00 | 0.00 |
| 13,300.0 | 90.00 | 138.51 | 5,262.0 | -5,026.9 | 5,132.5 | 7,184.1 | 0.00 | 0.00 | 0.00 |
| 13,400.0 | 90.00 | 138.51 | 5,262.0 | -5,101.8 | 5,198.8 | 7,283.9 | 0.00 | 0.00 | 0.00 |
| 13,500.0 | 90.00 | 138.51 | 5,262.0 | -5,176.7 | 5,265.0 | 7,383.7 | 0.00 | 0.00 | 0.00 |
| 13,600.0 | 90.00 | 138.51 | 5,262.0 | -5,251.6 | 5,331.3 | 7,483.4 | 0.00 | 0.00 | 0.00 |
| 13,655.1 | 90.00 | 138.51 | 5,262.0 | -5,292.9 | 5,367.8 | 7,538.4 | 0.00 | 0.00 | 0.00 |
| **Last take point** | | | | | | | | | |
| 13,700.0 | 90.00 | 138.51 | 5,262.0 | -5,326.5 | 5,397.5 | 7,583.2 | 0.00 | 0.00 | 0.00 |
| 13,715.1 | 90.00 | 138.51 | 5,262.0 | -5,337.9 | 5,407.5 | 7,598.3 | 0.00 | 0.00 | 0.00 |

| | | | |
|---|---|---|---|
| **Database:** | EDM | **Local Co-ordinate Reference:** | Well # 108H |
| **Company:** | DJR Operating | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Project:** | Betonnie Tsosie Unit | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site:** | M11 2308 Pad | **North Reference:** | True |
| **Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | APD plan | | |
| **Design:** | APD | | |

**Design Targets**

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| 728H toe | 0.00 | 0.00 | 5,226.0 | -6,167.7 | 4,643.5 | 1,898,805 | 2,779,048 | 36.21827589 | -107.64363160 |
| - plan misses target center by 1128.5usft at 13715.1usft MD (5262.0 TVD, -5337.9 N, 5407.5 E) | | | | | | | | | |
| - Circle (radius 100.0) | | | | | | | | | |
| 728H heel | 0.00 | 0.00 | 5,226.0 | -1,671.2 | 379.1 | 1,903,294 | 2,774,776 | 36.23062917 | -107.65808850 |
| - plan misses target center by 1337.8usft at 7637.2usft MD (5262.0 TVD, -785.2 N, 1380.8 E) | | | | | | | | | |
| - Circle (radius 50.0) | | | | | | | | | |
| 109H heel | 0.00 | 0.00 | 5,262.0 | 607.9 | 148.6 | 1,905,572 | 2,774,541 | 36.23689000 | -107.65887000 |
| - plan hits target center | | | | | | | | | |
| - Circle (radius 50.0) | | | | | | | | | |
| 109H toe | 0.00 | 0.00 | 5,262.0 | -5,337.9 | 5,407.5 | 1,899,636 | 2,779,811 | 36.22055500 | -107.64104100 |
| - plan hits target center | | | | | | | | | |
| - Circle (radius 100.0) | | | | | | | | | |

**Casing Points**

| Measured Depth (usft) | Vertical Depth (usft) | Name | Casing Diameter (in) | Hole Diameter (in) |
|---|---|---|---|---|
| 350.0 | 350.0 | Surface casing | 9.625 | 12.250 |
| 5,767.3 | 5,261.9 | Intermediate casing | 7.000 | 8.750 |

**Formations**

| Measured Depth (usft) | Vertical Depth (usft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|---|---|---|---|---|---|
| 1,001.3 | 996.0 | Ojo Alamo | | 0.00 | |
| 1,106.9 | 1,098.0 | Kirtland | | 0.00 | |
| 1,284.8 | 1,269.0 | Fruitland | | 0.00 | |
| 1,630.2 | 1,601.0 | Picture Cliffs | | 0.00 | |
| 1,855.0 | 1,817.0 | Lewis | | 0.00 | |
| 2,458.4 | 2,397.0 | Chacra | | 0.00 | |
| 3,151.2 | 3,063.0 | Cliffhouse | | 0.00 | |
| 3,242.8 | 3,151.0 | Menefee | | 0.00 | |
| 4,133.3 | 4,007.0 | Point Lookout | | 0.00 | |
| 4,337.3 | 4,203.0 | Mancos | | 0.00 | |
| 4,679.8 | 4,533.0 | Mancos Silt | | 0.00 | |
| 5,161.0 | 4,988.0 | Gallup A | | 0.00 | |
| 5,213.8 | 5,030.0 | Gallup B | | 0.00 | |
| 5,339.1 | 5,118.0 | Gallup C | | 0.00 | |
| 5,777.3 | 5,262.0 | Target | | 0.00 | |

**Plan Annotations**

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates +N/-S (usft) | Local Coordinates +E/-W (usft) | Comment |
|---|---|---|---|---|
| 4,614.6 | 4,469.6 | 1,009.2 | -327.4 | KOP |
| 5,837.3 | 5,262.0 | 563.0 | 188.4 | First take point |
| 13,655.1 | 5,262.0 | -5,292.9 | 5,367.8 | Last take point |

# DJR Operating

**Betonnie Tsosie Unit**
**M11 2308 Pad**
**# 108H**

**Original drilling**
**APD**

# Anticollision Report

**25 February, 2019**

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | DJR Operating | **Local Co-ordinate Reference:** | Well # 108H |
| **Project:** | Betonnie Tsosie Unit | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Reference Site:** | M11 2308 Pad | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **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 10,000.0 usft | **Error Surface:** | Pedal Curve |
| **Warning Levels Evaluated at:** | 2.00 **Sigma** | **Casing Method:** | Not applied |

**Survey Tool Program** **Date** 2/25/2019

| From (usft) | To (usft) | Survey (Wellbore) | Tool Name | Description |
|---|---|---|---|---|
| 0.0 | 13,715.1 | APD (Original drilling) | MWD+IGRF | OWSG MWD + IGRF or WMM |

**Summary**

| Site Name<br>Offset Well - Wellbore - Design | Reference Measured Depth (usft) | Offset Measured Depth (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|
| Athena 2308-14L (Logos) | | | | | | |
| 1H - Original drilling - As drilled | 9,318.4 | 4,485.0 | 3,109.1 | 3,002.5 | 29.147 | CC |
| 1H - Original drilling - As drilled | 9,400.0 | 4,485.0 | 3,110.2 | 3,001.7 | 28.674 | ES |
| 1H - Original drilling - As drilled | 10,300.0 | 4,485.0 | 3,260.4 | 3,136.7 | 26.352 | SF |
| 2H - Original drilling - As drilled | 9,540.6 | 3,969.2 | 3,492.9 | 3,386.5 | 32.821 | CC |
| 2H - Original drilling - As drilled | 9,700.0 | 4,081.7 | 3,495.3 | 3,383.3 | 31.201 | ES |
| 2H - Original drilling - As drilled | 11,000.0 | 4,675.0 | 3,749.9 | 3,602.8 | 25.496 | SF |
| 3H - Original drilling - As drilled | 9,077.4 | 4,673.0 | 2,533.8 | 2,433.0 | 25.142 | CC |
| 3H - Original drilling - As drilled | 9,100.0 | 4,673.0 | 2,533.9 | 2,432.7 | 25.026 | ES |
| 3H - Original drilling - As drilled | 9,700.0 | 4,673.0 | 2,609.2 | 2,497.9 | 23.453 | SF |
| Chaco 2308-14E (Enduring) | | | | | | |
| 151H - Original drilling - Pathfinder | 6,716.8 | 5,047.0 | 1,022.2 | 968.6 | 19.060 | CC, ES |
| 151H - Original drilling - Pathfinder | 6,900.0 | 5,013.9 | 1,037.4 | 980.6 | 18.265 | SF |
| 152H - Original drilling - Pathfinder | 473.5 | 475.1 | 1,782.9 | 1,780.5 | 744.197 | CC |
| 152H - Original drilling - Pathfinder | 500.0 | 499.5 | 1,783.0 | 1,780.5 | 691.723 | ES |
| 152H - Original drilling - Pathfinder | 8,900.0 | 4,735.0 | 2,385.9 | 2,289.0 | 24.608 | SF |
| M11 2308 Pad | | | | | | |
| # 728H - Original drilling - APD | 675.7 | 675.9 | 25.7 | 21.3 | 5.824 | CC, ES |
| # 728H - Original drilling - APD | 13,715.1 | 11,887.0 | 1,125.9 | 747.3 | 2.974 | SF |
| P&A'd conductor - Abandoned - Abandoned | 0.0 | 6.0 | 43.1 | | | |
| P&A'd conductor - Abandoned - Abandoned | 100.0 | 40.0 | 78.8 | 75.0 | 20.465 | SF |

**Offset Design** Athena 2308-14L (Logos) - 1H - Original drilling - As drilled

**Offset Site Error:** 0.0 usft

**Survey Program:** 418-MWD+IGRF **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 174.64 | -3,481.1 | 326.8 | 3,496.6 | | | | |
| 100.0 | 100.0 | 70.2 | 70.2 | 0.2 | 0.1 | 174.64 | -3,481.2 | 326.8 | 3,496.5 | 3,496.2 | 0.28 | N/A | |
| 200.0 | 200.0 | 166.5 | 166.5 | 0.5 | 0.3 | 174.64 | -3,481.3 | 326.8 | 3,496.6 | 3,495.8 | 0.80 | 4,365.028 | |
| 300.0 | 300.0 | 262.7 | 262.7 | 0.9 | 0.5 | 174.64 | -3,481.5 | 326.8 | 3,496.9 | 3,495.5 | 1.33 | 2,636.679 | |
| 400.0 | 400.0 | 358.9 | 358.9 | 1.2 | 0.6 | 174.64 | -3,481.9 | 326.8 | 3,497.2 | 3,495.4 | 1.85 | 1,888.937 | |
| 450.0 | 450.0 | 407.0 | 407.0 | 1.4 | 0.7 | 174.64 | -3,482.1 | 326.8 | 3,497.4 | 3,495.3 | 2.11 | 1,654.407 | |

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

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | DJR Operating | **Local Co-ordinate Reference:** | Well # 108H |
| **Project:** | Betonnie Tsosie Unit | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Reference Site:** | M11 2308 Pad | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Original drilling | **Database:** | EDM |
| **Reference Design:** | APD | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Athena 2308-14L (Logos) - 1H - Original drilling - As drilled — **Offset Site Error:** 0.0 usft

**Survey Program:** 418-MWD+IGRF — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 500.0 | 500.0 | 457.7 | 457.7 | 1.6 | 0.9 | -167.38 | -3,482.3 | 326.7 | 3,498.2 | 3,495.7 | 2.45 | 1,425.199 | |
| 600.0 | 599.9 | 544.9 | 544.9 | 1.9 | 1.2 | -167.37 | -3,482.8 | 326.5 | 3,503.0 | 3,499.9 | 3.13 | 1,119.776 | |
| 700.0 | 699.5 | 638.3 | 638.3 | 2.3 | 1.5 | -167.34 | -3,483.6 | 326.2 | 3,512.3 | 3,508.5 | 3.83 | 917.286 | |
| 800.0 | 798.6 | 728.2 | 728.2 | 2.7 | 1.8 | -167.29 | -3,484.7 | 325.6 | 3,526.2 | 3,521.7 | 4.52 | 780.100 | |
| 900.0 | 897.1 | 832.6 | 832.6 | 3.1 | 2.2 | -167.23 | -3,486.0 | 324.4 | 3,544.3 | 3,539.0 | 5.27 | 673.174 | |
| 1,000.0 | 994.7 | 975.0 | 975.0 | 3.6 | 2.7 | -167.19 | -3,486.6 | 322.6 | 3,565.6 | 3,559.5 | 6.14 | 580.596 | |
| 1,090.4 | 1,082.1 | 1,059.5 | 1,059.4 | 4.0 | 3.0 | -167.12 | -3,486.7 | 321.3 | 3,588.3 | 3,581.5 | 6.78 | 528.866 | |
| 1,100.0 | 1,091.3 | 1,072.4 | 1,072.4 | 4.1 | 3.1 | -167.13 | -3,486.7 | 321.0 | 3,590.8 | 3,584.0 | 6.87 | 522.480 | |
| 1,200.0 | 1,187.4 | 1,161.5 | 1,161.4 | 4.6 | 3.4 | -167.20 | -3,486.8 | 319.4 | 3,617.6 | 3,610.1 | 7.56 | 478.482 | |
| 1,300.0 | 1,283.6 | 1,247.0 | 1,247.0 | 5.2 | 3.7 | -167.26 | -3,486.9 | 318.3 | 3,644.6 | 3,636.4 | 8.24 | 442.145 | |
| 1,400.0 | 1,379.7 | 1,338.1 | 1,338.1 | 5.8 | 4.0 | -167.33 | -3,487.4 | 317.2 | 3,672.0 | 3,663.0 | 8.95 | 410.210 | |
| 1,500.0 | 1,475.8 | 1,442.2 | 1,442.1 | 6.4 | 4.4 | -167.41 | -3,487.8 | 315.7 | 3,699.1 | 3,689.4 | 9.71 | 380.939 | |
| 1,600.0 | 1,571.9 | 1,526.5 | 1,526.3 | 7.0 | 4.7 | -167.47 | -3,488.2 | 314.1 | 3,726.4 | 3,716.0 | 10.40 | 358.310 | |
| 1,700.0 | 1,668.1 | 1,621.1 | 1,620.9 | 7.6 | 5.0 | -167.52 | -3,489.1 | 311.7 | 3,754.0 | 3,742.9 | 11.13 | 337.255 | |
| 1,800.0 | 1,764.2 | 1,712.9 | 1,712.7 | 8.2 | 5.3 | -167.57 | -3,489.8 | 309.5 | 3,781.6 | 3,769.7 | 11.85 | 319.033 | |
| 1,900.0 | 1,860.3 | 1,811.0 | 1,810.8 | 8.8 | 5.7 | -167.63 | -3,490.7 | 307.5 | 3,809.1 | 3,796.5 | 12.60 | 302.285 | |
| 2,000.0 | 1,956.4 | 1,906.5 | 1,906.3 | 9.4 | 6.0 | -167.68 | -3,491.4 | 305.6 | 3,836.7 | 3,823.3 | 13.34 | 287.607 | |
| 2,100.0 | 2,052.5 | 1,971.8 | 1,971.5 | 10.0 | 6.3 | -167.72 | -3,492.1 | 304.4 | 3,864.5 | 3,850.6 | 13.96 | 276.793 | |
| 2,200.0 | 2,148.7 | 1,996.0 | 1,995.7 | 10.6 | 6.4 | -167.73 | -3,492.5 | 303.8 | 3,893.6 | 3,879.2 | 14.42 | 270.042 | |
| 2,300.0 | 2,244.8 | 2,057.0 | 2,056.7 | 11.2 | 6.6 | -167.75 | -3,494.8 | 301.7 | 3,923.9 | 3,908.9 | 15.02 | 261.256 | |
| 2,400.0 | 2,340.9 | 2,097.4 | 2,097.0 | 11.9 | 6.7 | -167.76 | -3,497.1 | 300.1 | 3,955.6 | 3,940.1 | 15.53 | 254.656 | |
| 2,500.0 | 2,437.0 | 2,144.1 | 2,143.5 | 12.5 | 6.9 | -167.77 | -3,500.1 | 298.1 | 3,988.4 | 3,972.3 | 16.07 | 248.220 | |
| 2,600.0 | 2,533.1 | 2,179.0 | 2,178.3 | 13.1 | 7.0 | -167.78 | -3,502.7 | 297.2 | 4,022.4 | 4,005.9 | 16.55 | 243.079 | |
| 2,700.0 | 2,629.3 | 2,239.0 | 2,238.1 | 13.7 | 7.3 | -167.82 | -3,508.2 | 296.7 | 4,057.8 | 4,040.6 | 17.13 | 236.928 | |
| 2,800.0 | 2,725.4 | 2,267.2 | 2,266.1 | 14.3 | 7.4 | -167.84 | -3,511.1 | 296.7 | 4,094.2 | 4,076.6 | 17.56 | 233.093 | |
| 2,900.0 | 2,821.5 | 2,316.0 | 2,314.6 | 15.0 | 7.5 | -167.86 | -3,516.6 | 295.9 | 4,131.7 | 4,113.7 | 18.09 | 228.417 | |
| 3,000.0 | 2,917.6 | 2,360.0 | 2,358.2 | 15.6 | 7.7 | -167.87 | -3,522.1 | 294.8 | 4,170.3 | 4,151.7 | 18.59 | 224.345 | |
| 3,100.0 | 3,013.7 | 2,421.0 | 2,418.6 | 16.2 | 7.9 | -167.88 | -3,530.5 | 292.9 | 4,209.9 | 4,190.7 | 19.17 | 219.663 | |
| 3,200.0 | 3,109.9 | 2,446.5 | 2,443.9 | 16.8 | 8.0 | -167.88 | -3,534.4 | 292.0 | 4,250.4 | 4,230.9 | 19.57 | 217.164 | |
| 3,300.0 | 3,206.0 | 2,482.0 | 2,478.8 | 17.5 | 8.2 | -167.88 | -3,540.1 | 290.7 | 4,292.2 | 4,272.2 | 20.02 | 214.387 | |
| 3,400.0 | 3,302.1 | 2,523.1 | 2,519.2 | 18.1 | 8.4 | -167.88 | -3,547.3 | 289.0 | 4,335.1 | 4,314.7 | 20.49 | 211.544 | |
| 3,500.0 | 3,398.2 | 2,569.0 | 2,564.3 | 18.7 | 8.5 | -167.88 | -3,555.8 | 287.0 | 4,379.0 | 4,358.1 | 20.99 | 208.664 | |
| 3,600.0 | 3,494.3 | 2,604.0 | 2,598.6 | 19.3 | 8.7 | -167.87 | -3,562.6 | 285.2 | 4,423.8 | 4,402.4 | 21.42 | 206.525 | |
| 3,700.0 | 3,590.5 | 2,665.0 | 2,658.2 | 20.0 | 8.9 | -167.86 | -3,575.2 | 282.6 | 4,469.5 | 4,447.5 | 21.98 | 203.305 | |
| 3,800.0 | 3,686.6 | 2,697.4 | 2,689.8 | 20.6 | 9.1 | -167.87 | -3,582.2 | 281.8 | 4,516.2 | 4,493.8 | 22.40 | 201.655 | |
| 3,900.0 | 3,782.7 | 2,767.6 | 2,758.3 | 21.2 | 9.4 | -167.88 | -3,597.8 | 280.8 | 4,563.6 | 4,540.6 | 23.00 | 198.417 | |
| 4,000.0 | 3,878.8 | 2,822.7 | 2,812.0 | 21.8 | 9.6 | -167.90 | -3,610.1 | 279.8 | 4,611.2 | 4,587.7 | 23.53 | 196.012 | |
| 4,100.0 | 3,975.0 | 2,868.9 | 2,856.9 | 22.5 | 9.9 | -167.90 | -3,621.0 | 278.6 | 4,659.7 | 4,635.7 | 24.00 | 194.137 | |
| 4,200.0 | 4,071.1 | 2,911.0 | 2,897.7 | 23.1 | 10.1 | -167.90 | -3,631.2 | 277.5 | 4,708.9 | 4,684.5 | 24.45 | 192.557 | |
| 4,300.0 | 4,167.2 | 2,974.0 | 2,958.7 | 23.7 | 10.4 | -167.90 | -3,646.9 | 275.9 | 4,758.8 | 4,733.7 | 25.02 | 190.193 | |
| 4,400.0 | 4,263.3 | 3,008.9 | 2,992.3 | 24.3 | 10.5 | -167.90 | -3,655.9 | 275.0 | 4,809.3 | 4,783.9 | 25.43 | 189.127 | |
| 4,500.0 | 4,359.4 | 3,144.7 | 3,123.4 | 25.0 | 11.2 | -167.90 | -3,691.6 | 271.0 | 4,860.4 | 4,834.0 | 26.41 | 184.045 | |
| 4,600.0 | 4,455.6 | 3,195.2 | 3,172.2 | 25.6 | 11.5 | -167.90 | -3,704.4 | 269.7 | 4,910.7 | 4,883.8 | 26.91 | 182.511 | |
| 4,614.6 | 4,469.6 | 3,199.4 | 3,176.3 | 25.7 | 11.5 | -167.90 | -3,705.5 | 269.6 | 4,918.1 | 4,891.2 | 26.96 | 182.417 | |
| 4,650.0 | 4,503.8 | 3,228.0 | 3,203.8 | 25.9 | 11.6 | -174.55 | -3,713.2 | 269.0 | 4,935.7 | 4,908.5 | 27.19 | 181.516 | |
| 4,700.0 | 4,552.9 | 3,228.0 | 3,203.8 | 26.2 | 11.6 | 170.75 | -3,713.2 | 269.0 | 4,958.0 | 4,930.7 | 27.27 | 181.804 | |
| 4,750.0 | 4,602.4 | 3,228.0 | 3,203.8 | 26.3 | 11.6 | 143.61 | -3,713.2 | 269.0 | 4,977.7 | 4,950.4 | 27.33 | 182.117 | |
| 4,800.0 | 4,652.0 | 3,257.8 | 3,232.4 | 26.5 | 11.8 | 104.97 | -3,721.4 | 268.5 | 4,994.6 | 4,967.0 | 27.55 | 181.288 | |
| 4,850.0 | 4,701.5 | 3,291.0 | 3,264.2 | 26.6 | 12.0 | 76.77 | -3,731.0 | 267.9 | 5,008.7 | 4,981.0 | 27.77 | 180.351 | |
| 4,900.0 | 4,750.6 | 3,298.4 | 3,271.3 | 26.6 | 12.0 | 61.99 | -3,733.2 | 267.7 | 5,019.8 | 4,992.0 | 27.83 | 180.394 | |
| 4,950.0 | 4,799.0 | 3,404.7 | 3,373.1 | 26.6 | 12.6 | 54.22 | -3,763.6 | 266.0 | 5,027.4 | 4,998.9 | 28.45 | 176.707 | |
| 5,000.0 | 4,846.2 | 3,447.7 | 3,414.3 | 26.6 | 12.8 | 49.52 | -3,775.7 | 265.7 | 5,031.5 | 5,002.8 | 28.69 | 175.382 | |

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

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | DJR Operating | **Local Co-ordinate Reference:** | Well # 108H |
| **Project:** | Betonnie Tsosie Unit | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Reference Site:** | M11 2308 Pad | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Original drilling | **Database:** | EDM |
| **Reference Design:** | APD | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Athena 2308-14L (Logos) - 1H - Original drilling - As drilled — **Offset Site Error:** 0.0 usft

**Survey Program:** 418-MWD+IGRF — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,050.0 | 4,892.2 | 3,510.3 | 3,474.5 | 26.5 | 13.2 | 46.66 | -3,793.3 | 265.4 | 5,032.3 | 5,003.3 | 29.03 | 173.335 | |
| 5,100.0 | 4,936.5 | 3,626.6 | 3,586.4 | 26.5 | 13.8 | 45.15 | -3,824.8 | 265.2 | 5,029.3 | 4,999.6 | 29.68 | 169.458 | |
| 5,150.0 | 4,979.0 | 3,702.0 | 3,659.2 | 26.3 | 14.2 | 44.26 | -3,844.5 | 265.4 | 5,022.7 | 4,992.6 | 30.08 | 166.967 | |
| 5,200.0 | 5,019.3 | 3,752.9 | 3,708.4 | 26.2 | 14.5 | 43.84 | -3,857.5 | 265.9 | 5,012.7 | 4,982.3 | 30.34 | 165.195 | |
| 5,250.0 | 5,057.1 | 3,828.4 | 3,781.4 | 26.0 | 14.9 | 44.05 | -3,876.9 | 265.4 | 4,999.5 | 4,968.8 | 30.75 | 162.575 | |
| 5,300.0 | 5,092.4 | 3,899.4 | 3,850.1 | 25.9 | 15.3 | 44.71 | -3,894.4 | 264.2 | 4,983.0 | 4,951.8 | 31.14 | 160.000 | |
| 5,350.0 | 5,124.8 | 3,922.0 | 3,872.0 | 25.7 | 15.5 | 45.42 | -3,900.0 | 264.0 | 4,963.6 | 4,932.4 | 31.27 | 158.737 | |
| 5,400.0 | 5,154.1 | 3,922.0 | 3,872.0 | 25.5 | 15.5 | 46.30 | -3,900.0 | 264.0 | 4,941.7 | 4,910.5 | 31.28 | 157.982 | |
| 5,450.0 | 5,180.2 | 3,950.1 | 3,899.3 | 25.3 | 15.6 | 47.77 | -3,907.1 | 263.7 | 4,917.3 | 4,885.9 | 31.48 | 156.230 | |
| 5,500.0 | 5,202.9 | 3,961.5 | 3,910.3 | 25.2 | 15.7 | 49.46 | -3,910.0 | 263.6 | 4,890.7 | 4,859.1 | 31.60 | 154.788 | |
| 5,550.0 | 5,222.1 | 3,985.0 | 3,932.9 | 25.0 | 15.8 | 51.67 | -3,916.2 | 263.1 | 4,862.0 | 4,830.2 | 31.82 | 152.818 | |
| 5,600.0 | 5,237.6 | 3,985.0 | 3,932.9 | 24.9 | 15.8 | 54.01 | -3,916.2 | 263.1 | 4,831.2 | 4,799.3 | 31.93 | 151.323 | |
| 5,650.0 | 5,249.4 | 3,985.0 | 3,932.9 | 24.8 | 15.8 | 56.78 | -3,916.2 | 263.1 | 4,798.7 | 4,766.7 | 32.07 | 149.639 | |
| 5,700.0 | 5,257.3 | 3,985.0 | 3,932.9 | 24.8 | 15.8 | 59.99 | -3,916.2 | 263.1 | 4,764.6 | 4,732.4 | 32.24 | 147.774 | |
| 5,750.0 | 5,261.4 | 4,004.2 | 3,951.4 | 24.8 | 15.9 | 64.00 | -3,921.4 | 262.7 | 4,729.0 | 4,696.5 | 32.57 | 145.214 | |
| 5,777.3 | 5,262.0 | 4,007.0 | 3,954.1 | 24.8 | 15.9 | 66.29 | -3,922.2 | 262.6 | 4,709.1 | 4,676.4 | 32.71 | 143.962 | |
| 5,800.0 | 5,262.0 | 4,009.2 | 3,956.1 | 24.8 | 15.9 | 66.32 | -3,922.8 | 262.6 | 4,692.4 | 4,659.6 | 32.83 | 142.914 | |
| 5,900.0 | 5,262.0 | 4,018.6 | 3,965.2 | 25.2 | 16.0 | 66.48 | -3,925.3 | 262.3 | 4,619.4 | 4,586.0 | 33.45 | 138.091 | |
| 6,000.0 | 5,262.0 | 4,508.5 | 4,441.2 | 25.8 | 18.6 | 75.21 | -4,035.9 | 243.6 | 4,547.2 | 4,510.1 | 37.08 | 122.641 | |
| 6,100.0 | 5,262.0 | 4,508.4 | 4,441.2 | 26.7 | 18.6 | 75.21 | -4,035.9 | 243.6 | 4,474.7 | 4,436.8 | 37.93 | 117.960 | |
| 6,200.0 | 5,262.0 | 4,508.4 | 4,441.2 | 27.8 | 18.6 | 75.20 | -4,035.9 | 243.6 | 4,403.3 | 4,364.4 | 38.92 | 113.152 | |
| 6,300.0 | 5,262.0 | 4,508.4 | 4,441.2 | 29.1 | 18.6 | 75.20 | -4,035.9 | 243.6 | 4,333.1 | 4,293.1 | 40.02 | 108.281 | |
| 6,400.0 | 5,262.0 | 4,485.0 | 4,418.4 | 30.6 | 18.5 | 74.77 | -4,032.1 | 247.5 | 4,264.3 | 4,223.2 | 41.09 | 103.780 | |
| 6,500.0 | 5,262.0 | 4,485.0 | 4,418.4 | 32.2 | 18.5 | 74.77 | -4,032.1 | 247.5 | 4,196.5 | 4,154.0 | 42.42 | 98.926 | |
| 6,600.0 | 5,262.0 | 4,485.0 | 4,418.4 | 33.8 | 18.5 | 74.77 | -4,032.1 | 247.5 | 4,130.0 | 4,086.1 | 43.86 | 94.161 | |
| 6,700.0 | 5,262.0 | 4,485.0 | 4,418.4 | 35.6 | 18.5 | 74.77 | -4,032.1 | 247.5 | 4,064.8 | 4,019.4 | 45.41 | 89.521 | |
| 6,800.0 | 5,262.0 | 4,485.0 | 4,418.4 | 37.5 | 18.5 | 74.77 | -4,032.1 | 247.5 | 4,001.2 | 3,954.1 | 47.05 | 85.034 | |
| 6,900.0 | 5,262.0 | 4,485.0 | 4,418.4 | 39.4 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,939.0 | 3,890.2 | 48.80 | 80.719 | |
| 7,000.0 | 5,262.0 | 4,485.0 | 4,418.4 | 41.4 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,878.4 | 3,827.7 | 50.64 | 76.592 | |
| 7,100.0 | 5,262.0 | 4,485.0 | 4,418.4 | 43.4 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,819.4 | 3,766.9 | 52.56 | 72.662 | |
| 7,200.0 | 5,262.0 | 4,485.0 | 4,418.4 | 45.4 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,762.2 | 3,707.7 | 54.58 | 68.933 | |
| 7,300.0 | 5,262.0 | 4,485.0 | 4,418.4 | 47.5 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,706.9 | 3,650.2 | 56.67 | 65.407 | |
| 7,400.0 | 5,262.0 | 4,485.0 | 4,418.4 | 49.7 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,653.4 | 3,594.5 | 58.85 | 62.083 | |
| 7,500.0 | 5,262.0 | 4,485.0 | 4,418.4 | 51.8 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,601.9 | 3,540.8 | 61.09 | 58.958 | |
| 7,600.0 | 5,262.0 | 4,485.0 | 4,418.4 | 54.0 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,552.4 | 3,489.0 | 63.41 | 56.027 | |
| 7,700.0 | 5,262.0 | 4,485.0 | 4,418.4 | 56.2 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,505.1 | 3,439.4 | 65.78 | 53.283 | |
| 7,800.0 | 5,262.0 | 4,485.0 | 4,418.4 | 58.4 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,460.1 | 3,391.9 | 68.22 | 50.722 | |
| 7,900.0 | 5,262.0 | 4,485.0 | 4,418.4 | 60.7 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,417.4 | 3,346.7 | 70.70 | 48.335 | |
| 8,000.0 | 5,262.0 | 4,485.0 | 4,418.4 | 62.9 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,377.1 | 3,303.9 | 73.23 | 46.115 | |
| 8,100.0 | 5,262.0 | 4,485.0 | 4,418.4 | 65.2 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,339.3 | 3,263.5 | 75.80 | 44.054 | |
| 8,200.0 | 5,262.0 | 4,485.0 | 4,418.4 | 67.5 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,304.2 | 3,225.8 | 78.40 | 42.146 | |
| 8,300.0 | 5,262.0 | 4,485.0 | 4,418.4 | 69.8 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,271.7 | 3,190.7 | 81.02 | 40.383 | |
| 8,400.0 | 5,262.0 | 4,485.0 | 4,418.4 | 72.1 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,241.9 | 3,158.3 | 83.65 | 38.757 | |
| 8,500.0 | 5,262.0 | 4,485.0 | 4,418.4 | 74.4 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,215.0 | 3,128.8 | 86.28 | 37.263 | |
| 8,600.0 | 5,262.0 | 4,485.0 | 4,418.4 | 76.7 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,191.1 | 3,102.1 | 88.91 | 35.892 | |
| 8,700.0 | 5,262.0 | 4,485.0 | 4,418.4 | 79.0 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,170.0 | 3,078.5 | 91.52 | 34.638 | |
| 8,800.0 | 5,262.0 | 4,485.0 | 4,418.4 | 81.3 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,152.1 | 3,058.0 | 94.10 | 33.497 | |
| 8,900.0 | 5,262.0 | 4,485.0 | 4,418.4 | 83.7 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,137.2 | 3,040.5 | 96.65 | 32.460 | |
| 9,000.0 | 5,262.0 | 4,485.0 | 4,418.4 | 86.0 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,125.4 | 3,026.2 | 99.14 | 31.524 | |
| 9,100.0 | 5,262.0 | 4,485.0 | 4,418.4 | 88.4 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,116.8 | 3,015.2 | 101.58 | 30.682 | |
| 9,200.0 | 5,262.0 | 4,485.0 | 4,418.4 | 90.7 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,111.4 | 3,007.4 | 103.96 | 29.929 | |
| 9,300.0 | 5,262.0 | 4,485.0 | 4,418.4 | 93.1 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,109.2 | 3,002.9 | 106.26 | 29.261 | |

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

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | DJR Operating | **Local Co-ordinate Reference:** | Well # 108H |
| **Project:** | Betonnie Tsosie Unit | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Reference Site:** | M11 2308 Pad | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Original drilling | **Database:** | EDM |
| **Reference Design:** | APD | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Athena 2308-14L (Logos) - 1H - Original drilling - As drilled — **Offset Site Error:** 0.0 usft

**Survey Program:** 418-MWD+IGRF — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9,318.4 | 5,262.0 | 4,485.0 | 4,418.4 | 93.5 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,109.1 | 3,002.5 | 106.67 | 29.147 | CC |
| 9,400.0 | 5,262.0 | 4,485.0 | 4,418.4 | 95.5 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,110.2 | 3,001.7 | 108.47 | 28.674 | ES |
| 9,500.0 | 5,262.0 | 4,485.0 | 4,418.4 | 97.8 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,114.4 | 3,003.8 | 110.59 | 28.162 | |
| 9,600.0 | 5,262.0 | 4,485.0 | 4,418.4 | 100.2 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,121.8 | 3,009.2 | 112.62 | 27.721 | |
| 9,700.0 | 5,262.0 | 4,485.0 | 4,418.4 | 102.6 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,132.4 | 3,017.9 | 114.54 | 27.349 | |
| 9,800.0 | 5,262.0 | 4,485.0 | 4,418.4 | 105.0 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,146.2 | 3,029.8 | 116.35 | 27.041 | |
| 9,900.0 | 5,262.0 | 4,485.0 | 4,418.4 | 107.3 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,163.0 | 3,045.0 | 118.05 | 26.794 | |
| 10,000.0 | 5,262.0 | 4,485.0 | 4,418.4 | 109.7 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,182.9 | 3,063.3 | 119.64 | 26.604 | |
| 10,100.0 | 5,262.0 | 4,485.0 | 4,418.4 | 112.1 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,205.8 | 3,084.7 | 121.11 | 26.469 | |
| 10,200.0 | 5,262.0 | 4,485.0 | 4,418.4 | 114.5 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,231.7 | 3,109.2 | 122.48 | 26.386 | |
| 10,300.0 | 5,262.0 | 4,485.0 | 4,418.4 | 116.9 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,260.4 | 3,136.7 | 123.72 | 26.352 | SF |
| 10,400.0 | 5,262.0 | 4,485.0 | 4,418.4 | 119.3 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,291.9 | 3,167.0 | 124.86 | 26.364 | |
| 10,500.0 | 5,262.0 | 4,485.0 | 4,418.4 | 121.7 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,326.1 | 3,200.2 | 125.89 | 26.421 | |
| 10,600.0 | 5,262.0 | 4,485.0 | 4,418.4 | 124.1 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,362.9 | 3,236.1 | 126.81 | 26.519 | |
| 10,700.0 | 5,262.0 | 4,485.0 | 4,418.4 | 126.5 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,402.3 | 3,274.6 | 127.63 | 26.657 | |
| 10,800.0 | 5,262.0 | 4,485.0 | 4,418.4 | 128.9 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,444.1 | 3,315.7 | 128.36 | 26.832 | |
| 10,900.0 | 5,262.0 | 4,485.0 | 4,418.4 | 131.3 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,488.3 | 3,359.3 | 128.99 | 27.043 | |
| 11,000.0 | 5,262.0 | 4,485.0 | 4,418.4 | 133.7 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,534.7 | 3,405.2 | 129.53 | 27.288 | |
| 11,100.0 | 5,262.0 | 4,485.0 | 4,418.4 | 136.1 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,583.4 | 3,453.4 | 130.00 | 27.565 | |
| 11,200.0 | 5,262.0 | 4,485.0 | 4,418.4 | 138.5 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,634.1 | 3,503.7 | 130.38 | 27.873 | |
| 11,300.0 | 5,262.0 | 4,485.0 | 4,418.4 | 140.9 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,686.9 | 3,556.2 | 130.69 | 28.210 | |
| 11,400.0 | 5,262.0 | 4,485.0 | 4,418.4 | 143.4 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,741.6 | 3,610.7 | 130.94 | 28.575 | |
| 11,500.0 | 5,262.0 | 4,485.0 | 4,418.4 | 145.8 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,798.1 | 3,667.0 | 131.12 | 28.966 | |
| 11,600.0 | 5,262.0 | 4,485.0 | 4,418.4 | 148.2 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,856.4 | 3,725.2 | 131.25 | 29.383 | |
| 11,700.0 | 5,262.0 | 4,485.0 | 4,418.4 | 150.6 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,916.4 | 3,785.1 | 131.32 | 29.823 | |
| 11,800.0 | 5,262.0 | 4,485.0 | 4,418.4 | 153.0 | 18.5 | 74.77 | -4,032.1 | 247.5 | 3,978.0 | 3,846.7 | 131.35 | 30.286 | |
| 11,900.0 | 5,262.0 | 4,485.0 | 4,418.4 | 155.4 | 18.5 | 74.77 | -4,032.1 | 247.5 | 4,041.2 | 3,909.8 | 131.33 | 30.771 | |
| 12,000.0 | 5,262.0 | 4,485.0 | 4,418.4 | 157.9 | 18.5 | 74.77 | -4,032.1 | 247.5 | 4,105.8 | 3,974.5 | 131.27 | 31.277 | |
| 12,100.0 | 5,262.0 | 4,485.0 | 4,418.4 | 160.3 | 18.5 | 74.77 | -4,032.1 | 247.5 | 4,171.8 | 4,040.6 | 131.18 | 31.802 | |
| 12,200.0 | 5,262.0 | 4,485.0 | 4,418.4 | 162.7 | 18.5 | 74.77 | -4,032.1 | 247.5 | 4,239.1 | 4,108.0 | 131.05 | 32.347 | |
| 12,300.0 | 5,262.0 | 4,485.0 | 4,418.4 | 165.1 | 18.5 | 74.77 | -4,032.1 | 247.5 | 4,307.7 | 4,176.8 | 130.90 | 32.909 | |
| 12,400.0 | 5,262.0 | 4,485.0 | 4,418.4 | 167.5 | 18.5 | 74.77 | -4,032.1 | 247.5 | 4,377.5 | 4,246.8 | 130.72 | 33.489 | |
| 12,500.0 | 5,262.0 | 4,485.0 | 4,418.4 | 170.0 | 18.5 | 74.77 | -4,032.1 | 247.5 | 4,448.5 | 4,318.0 | 130.51 | 34.085 | |
| 12,600.0 | 5,262.0 | 4,485.0 | 4,418.4 | 172.4 | 18.5 | 74.77 | -4,032.1 | 247.5 | 4,520.5 | 4,390.2 | 130.29 | 34.697 | |
| 12,700.0 | 5,262.0 | 4,485.0 | 4,418.4 | 174.8 | 18.5 | 74.77 | -4,032.1 | 247.5 | 4,593.6 | 4,463.6 | 130.04 | 35.324 | |
| 12,800.0 | 5,262.0 | 4,485.0 | 4,418.4 | 177.2 | 18.5 | 74.77 | -4,032.1 | 247.5 | 4,667.7 | 4,538.0 | 129.78 | 35.966 | |
| 12,900.0 | 5,262.0 | 4,485.0 | 4,418.4 | 179.7 | 18.5 | 74.77 | -4,032.1 | 247.5 | 4,742.8 | 4,613.3 | 129.51 | 36.621 | |
| 13,000.0 | 5,262.0 | 4,485.0 | 4,418.4 | 182.1 | 18.5 | 74.77 | -4,032.1 | 247.5 | 4,818.8 | 4,689.5 | 129.23 | 37.289 | |
| 13,100.0 | 5,262.0 | 4,485.0 | 4,418.4 | 184.5 | 18.5 | 74.77 | -4,032.1 | 247.5 | 4,895.6 | 4,766.7 | 128.93 | 37.971 | |
| 13,200.0 | 5,262.0 | 4,485.0 | 4,418.4 | 186.9 | 18.5 | 74.77 | -4,032.1 | 247.5 | 4,973.2 | 4,844.6 | 128.63 | 38.664 | |
| 13,300.0 | 5,262.0 | 4,485.0 | 4,418.4 | 189.4 | 18.5 | 74.77 | -4,032.1 | 247.5 | 5,051.7 | 4,923.4 | 128.32 | 39.369 | |
| 13,400.0 | 5,262.0 | 4,485.0 | 4,418.4 | 191.8 | 18.5 | 74.77 | -4,032.1 | 247.5 | 5,130.9 | 5,002.9 | 128.00 | 40.085 | |
| 13,500.0 | 5,262.0 | 4,485.0 | 4,418.4 | 194.2 | 18.5 | 74.77 | -4,032.1 | 247.5 | 5,210.8 | 5,083.1 | 127.68 | 40.812 | |
| 13,600.0 | 5,262.0 | 4,485.0 | 4,418.4 | 196.7 | 18.5 | 74.77 | -4,032.1 | 247.5 | 5,291.3 | 5,164.0 | 127.35 | 41.549 | |
| 13,700.0 | 5,262.0 | 4,485.0 | 4,418.4 | 199.1 | 18.5 | 74.77 | -4,032.1 | 247.5 | 5,372.6 | 5,245.6 | 127.02 | 42.296 | |
| 13,715.1 | 5,262.0 | 4,485.0 | 4,418.4 | 199.5 | 18.5 | 74.77 | -4,032.1 | 247.5 | 5,384.9 | 5,258.0 | 126.97 | 42.410 | |

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | DJR Operating | **Local Co-ordinate Reference:** | Well # 108H |
| **Project:** | Betonnie Tsosie Unit | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Reference Site:** | M11 2308 Pad | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Original drilling | **Database:** | EDM |
| **Reference Design:** | APD | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Athena 2308-14L (Logos) - 2H - Original drilling - As drilled — **Offset Site Error:** 0.0 usft

**Survey Program:** 415-MWD+IGRF — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 174.75 | -3,500.4 | 321.8 | 3,515.3 | | | | |
| 100.0 | 100.0 | 74.4 | 74.4 | 0.2 | 0.1 | 174.75 | -3,500.4 | 321.7 | 3,515.2 | 3,514.9 | 0.28 | N/A | |
| 200.0 | 200.0 | 176.2 | 176.2 | 0.5 | 0.3 | 174.75 | -3,500.4 | 321.4 | 3,515.1 | 3,514.3 | 0.82 | 4,295.155 | |
| 300.0 | 300.0 | 278.1 | 278.1 | 0.9 | 0.5 | 174.76 | -3,500.3 | 320.8 | 3,515.0 | 3,513.6 | 1.35 | 2,596.770 | |
| 400.0 | 400.0 | 380.0 | 380.0 | 1.2 | 0.7 | 174.78 | -3,500.2 | 320.0 | 3,514.8 | 3,512.9 | 1.89 | 1,860.868 | |
| 450.0 | 450.0 | 431.2 | 431.2 | 1.4 | 0.8 | 174.78 | -3,500.2 | 319.5 | 3,514.7 | 3,512.5 | 2.19 | 1,607.041 | |
| 455.6 | 455.6 | 437.1 | 437.1 | 1.4 | 0.8 | -167.24 | -3,500.2 | 319.4 | 3,514.7 | 3,512.5 | 2.23 | 1,577.237 | |
| 500.0 | 500.0 | 483.5 | 483.5 | 1.6 | 1.0 | -167.23 | -3,500.1 | 318.8 | 3,515.1 | 3,512.6 | 2.55 | 1,376.152 | |
| 600.0 | 599.9 | 559.5 | 559.5 | 1.9 | 1.2 | -167.20 | -3,500.0 | 317.7 | 3,519.2 | 3,516.0 | 3.19 | 1,103.646 | |
| 700.0 | 699.5 | 597.0 | 597.0 | 2.3 | 1.4 | -167.15 | -3,500.4 | 317.0 | 3,528.9 | 3,525.2 | 3.69 | 956.021 | |
| 800.0 | 798.6 | 657.0 | 656.9 | 2.7 | 1.6 | -167.07 | -3,502.1 | 315.9 | 3,544.2 | 3,539.9 | 4.27 | 829.335 | |
| 900.0 | 897.1 | 744.5 | 744.3 | 3.1 | 1.9 | -166.98 | -3,505.3 | 314.3 | 3,564.5 | 3,559.6 | 4.95 | 719.442 | |
| 1,000.0 | 994.7 | 837.0 | 836.8 | 3.6 | 2.2 | -166.88 | -3,508.8 | 312.8 | 3,589.1 | 3,583.5 | 5.66 | 634.320 | |
| 1,090.4 | 1,082.1 | 919.2 | 918.9 | 4.0 | 2.5 | -166.78 | -3,511.9 | 311.7 | 3,615.0 | 3,608.7 | 6.29 | 574.295 | |
| 1,100.0 | 1,091.3 | 926.9 | 926.7 | 4.1 | 2.6 | -166.79 | -3,512.2 | 311.6 | 3,617.9 | 3,611.6 | 6.36 | 568.426 | |
| 1,200.0 | 1,187.4 | 1,044.3 | 1,043.9 | 4.6 | 3.0 | -166.88 | -3,516.7 | 310.1 | 3,648.4 | 3,641.2 | 7.15 | 510.050 | |
| 1,300.0 | 1,283.6 | 1,160.8 | 1,160.4 | 5.2 | 3.4 | -166.96 | -3,520.2 | 308.1 | 3,678.0 | 3,670.1 | 7.95 | 462.745 | |
| 1,400.0 | 1,379.7 | 1,261.4 | 1,260.9 | 5.8 | 3.8 | -167.03 | -3,522.9 | 306.6 | 3,707.4 | 3,698.7 | 8.69 | 426.608 | |
| 1,500.0 | 1,475.8 | 1,371.5 | 1,370.9 | 6.4 | 4.2 | -167.11 | -3,525.7 | 305.0 | 3,736.6 | 3,727.1 | 9.47 | 394.473 | |
| 1,600.0 | 1,571.9 | 1,464.1 | 1,463.6 | 7.0 | 4.5 | -167.19 | -3,527.7 | 304.2 | 3,765.6 | 3,755.4 | 10.19 | 369.510 | |
| 1,700.0 | 1,668.1 | 1,581.0 | 1,580.4 | 7.6 | 4.9 | -167.28 | -3,530.1 | 303.2 | 3,794.4 | 3,783.4 | 11.00 | 344.863 | |
| 1,800.0 | 1,764.2 | 1,667.9 | 1,667.2 | 8.2 | 5.2 | -167.35 | -3,531.6 | 302.5 | 3,823.0 | 3,811.3 | 11.70 | 326.658 | |
| 1,900.0 | 1,860.3 | 1,790.3 | 1,789.6 | 8.8 | 5.7 | -167.45 | -3,533.4 | 301.7 | 3,851.2 | 3,838.7 | 12.54 | 307.099 | |
| 2,000.0 | 1,956.4 | 1,884.4 | 1,883.8 | 9.4 | 6.0 | -167.52 | -3,534.6 | 301.1 | 3,879.4 | 3,866.1 | 13.27 | 292.299 | |
| 2,100.0 | 2,052.5 | 1,981.3 | 1,980.7 | 10.0 | 6.4 | -167.61 | -3,535.6 | 301.0 | 3,907.3 | 3,893.3 | 14.01 | 278.886 | |
| 2,200.0 | 2,148.7 | 2,032.0 | 2,031.4 | 10.6 | 6.5 | -167.65 | -3,536.4 | 301.2 | 3,935.9 | 3,921.3 | 14.57 | 270.132 | |
| 2,300.0 | 2,244.8 | 2,089.8 | 2,089.1 | 11.2 | 6.7 | -167.70 | -3,538.1 | 301.0 | 3,965.6 | 3,950.5 | 15.16 | 261.648 | |
| 2,400.0 | 2,340.9 | 2,151.7 | 2,151.0 | 11.9 | 7.0 | -167.75 | -3,540.4 | 300.5 | 3,996.1 | 3,980.4 | 15.76 | 253.586 | |
| 2,500.0 | 2,437.0 | 2,203.2 | 2,202.4 | 12.5 | 7.2 | -167.78 | -3,542.8 | 299.9 | 4,027.5 | 4,011.2 | 16.32 | 246.843 | |
| 2,600.0 | 2,533.1 | 2,236.0 | 2,235.2 | 13.1 | 7.3 | -167.80 | -3,544.7 | 299.7 | 4,060.1 | 4,043.3 | 16.79 | 241.784 | |
| 2,700.0 | 2,629.3 | 2,297.0 | 2,296.0 | 13.7 | 7.5 | -167.85 | -3,548.9 | 299.7 | 4,093.7 | 4,076.3 | 17.38 | 235.537 | |
| 2,800.0 | 2,725.4 | 2,322.6 | 2,321.5 | 14.3 | 7.6 | -167.87 | -3,551.1 | 299.8 | 4,128.7 | 4,110.9 | 17.81 | 231.758 | |
| 2,900.0 | 2,821.5 | 2,357.0 | 2,355.7 | 15.0 | 7.7 | -167.88 | -3,554.6 | 299.4 | 4,165.1 | 4,146.8 | 18.28 | 227.838 | |
| 3,000.0 | 2,917.6 | 2,357.0 | 2,355.7 | 15.6 | 7.7 | -167.88 | -3,554.6 | 299.4 | 4,203.2 | 4,184.6 | 18.59 | 226.143 | |
| 3,100.0 | 3,013.7 | 2,418.0 | 2,416.1 | 16.2 | 8.0 | -167.89 | -3,562.8 | 297.3 | 4,242.5 | 4,223.3 | 19.17 | 221.364 | |
| 3,200.0 | 3,109.9 | 2,418.0 | 2,416.1 | 16.8 | 8.0 | -167.89 | -3,562.8 | 297.3 | 4,283.2 | 4,263.8 | 19.45 | 220.185 | |
| 3,300.0 | 3,206.0 | 2,454.0 | 2,451.5 | 17.5 | 8.1 | -167.88 | -3,568.8 | 295.3 | 4,325.4 | 4,305.5 | 19.91 | 217.292 | |
| 3,400.0 | 3,302.1 | 2,479.0 | 2,476.1 | 18.1 | 8.2 | -167.87 | -3,573.4 | 293.6 | 4,368.9 | 4,348.6 | 20.30 | 215.224 | |
| 3,500.0 | 3,398.2 | 2,479.0 | 2,476.1 | 18.7 | 8.2 | -167.87 | -3,573.4 | 293.6 | 4,414.0 | 4,393.4 | 20.56 | 214.703 | |
| 3,600.0 | 3,494.3 | 2,540.0 | 2,535.4 | 19.3 | 8.5 | -167.83 | -3,586.7 | 288.5 | 4,460.4 | 4,439.3 | 21.13 | 211.121 | |
| 3,700.0 | 3,590.5 | 2,540.0 | 2,535.4 | 20.0 | 8.5 | -167.83 | -3,586.7 | 288.5 | 4,507.8 | 4,486.5 | 21.37 | 210.935 | |
| 3,800.0 | 3,686.6 | 2,540.0 | 2,535.4 | 20.6 | 8.5 | -167.83 | -3,586.7 | 288.5 | 4,557.0 | 4,535.4 | 21.60 | 210.932 | |
| 3,900.0 | 3,782.7 | 2,572.0 | 2,566.2 | 21.2 | 8.6 | -167.79 | -3,595.0 | 285.4 | 4,607.3 | 4,585.3 | 22.01 | 209.364 | |
| 4,000.0 | 3,878.8 | 2,601.0 | 2,593.8 | 21.8 | 8.8 | -167.76 | -3,603.1 | 282.5 | 4,658.9 | 4,636.5 | 22.39 | 208.114 | |
| 4,100.0 | 3,975.0 | 2,601.0 | 2,593.8 | 22.5 | 8.8 | -167.76 | -3,603.1 | 282.5 | 4,711.7 | 4,689.1 | 22.60 | 208.519 | |
| 4,200.0 | 4,071.1 | 2,628.8 | 2,620.1 | 23.1 | 8.9 | -167.73 | -3,611.5 | 279.7 | 4,765.7 | 4,742.7 | 22.96 | 207.568 | |
| 4,300.0 | 4,167.2 | 2,662.0 | 2,651.4 | 23.7 | 9.1 | -167.70 | -3,622.2 | 276.4 | 4,820.9 | 4,797.6 | 23.35 | 206.451 | |
| 4,400.0 | 4,263.3 | 2,662.0 | 2,651.4 | 24.3 | 9.1 | -167.70 | -3,622.2 | 276.4 | 4,877.1 | 4,853.6 | 23.54 | 207.179 | |
| 4,500.0 | 4,359.4 | 2,662.0 | 2,651.4 | 25.0 | 9.1 | -167.70 | -3,622.2 | 276.4 | 4,934.7 | 4,910.9 | 23.72 | 208.020 | |
| 4,600.0 | 4,455.6 | 2,697.3 | 2,684.3 | 25.6 | 9.3 | -167.66 | -3,634.5 | 273.0 | 4,992.9 | 4,968.8 | 24.11 | 207.053 | |
| 4,614.6 | 4,469.6 | 2,723.0 | 2,708.1 | 25.7 | 9.4 | -167.63 | -3,644.0 | 270.5 | 5,001.8 | 4,977.5 | 24.30 | 205.848 | |
| 4,650.0 | 4,503.8 | 2,723.0 | 2,708.1 | 25.9 | 9.4 | -174.53 | -3,644.0 | 270.5 | 5,022.1 | 4,997.7 | 24.35 | 206.219 | |

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

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | DJR Operating | **Local Co-ordinate Reference:** | Well # 108H |
| **Project:** | Betonnie Tsosie Unit | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Reference Site:** | M11 2308 Pad | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Original drilling | **Database:** | EDM |
| **Reference Design:** | APD | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Athena 2308-14L (Logos) - 2H - Original drilling - As drilled — **Offset Site Error:** 0.0 usft

**Survey Program:** 415-MWD+IGRF — **Offset Well Error:** 0.0 usft

| Reference | | Offset | | Semi Major Axis | | | Offset Wellbore Centre | | Distance | | | | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Measured Depth (usft) | Vertical Depth (usft) | Measured Depth (usft) | Vertical Depth (usft) | Reference (usft) | Offset (usft) | Highside Toolface (°) | +N/-S (usft) | +E/-W (usft) | Between Centres (usft) | Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | |
| 4,700.0 | 4,552.9 | 2,723.0 | 2,708.1 | 26.2 | 9.4 | 170.44 | -3,644.0 | 270.5 | 5,048.6 | 5,024.2 | 24.41 | 206.790 | |
| 4,750.0 | 4,602.4 | 2,723.0 | 2,708.1 | 26.3 | 9.4 | 143.01 | -3,644.0 | 270.5 | 5,072.8 | 5,048.3 | 24.46 | 207.402 | |
| 4,800.0 | 4,652.0 | 2,723.0 | 2,708.1 | 26.5 | 9.4 | 104.05 | -3,644.0 | 270.5 | 5,094.4 | 5,069.9 | 24.49 | 208.051 | |
| 4,850.0 | 4,701.5 | 2,723.0 | 2,708.1 | 26.6 | 9.4 | 75.53 | -3,644.0 | 270.5 | 5,113.3 | 5,088.8 | 24.50 | 208.738 | |
| 4,900.0 | 4,750.6 | 2,754.7 | 2,737.2 | 26.6 | 9.6 | 60.61 | -3,656.4 | 267.7 | 5,129.1 | 5,104.4 | 24.69 | 207.719 | |
| 4,950.0 | 4,799.0 | 2,782.0 | 2,762.0 | 26.6 | 9.7 | 52.39 | -3,667.4 | 265.4 | 5,142.3 | 5,117.4 | 24.85 | 206.958 | |
| 5,000.0 | 4,846.2 | 2,782.0 | 2,762.0 | 26.6 | 9.7 | 47.28 | -3,667.4 | 265.4 | 5,152.3 | 5,127.5 | 24.81 | 207.632 | |
| 5,050.0 | 4,892.2 | 2,782.0 | 2,762.0 | 26.5 | 9.7 | 43.91 | -3,667.4 | 265.4 | 5,159.3 | 5,134.6 | 24.77 | 208.284 | |
| 5,100.0 | 4,936.5 | 2,808.8 | 2,786.3 | 26.5 | 9.9 | 41.73 | -3,678.5 | 263.3 | 5,163.3 | 5,138.4 | 24.89 | 207.436 | |
| 5,150.0 | 4,979.0 | 2,845.0 | 2,819.0 | 26.3 | 10.1 | 40.33 | -3,693.9 | 260.8 | 5,164.2 | 5,139.2 | 25.07 | 206.007 | |
| 5,200.0 | 5,019.3 | 2,845.0 | 2,819.0 | 26.2 | 10.1 | 39.25 | -3,693.9 | 260.8 | 5,161.9 | 5,136.9 | 25.01 | 206.401 | |
| 5,250.0 | 5,057.1 | 2,845.0 | 2,819.0 | 26.0 | 10.1 | 38.56 | -3,693.9 | 260.8 | 5,156.6 | 5,131.6 | 24.95 | 206.667 | |
| 5,300.0 | 5,092.4 | 2,868.5 | 2,840.2 | 25.9 | 10.3 | 38.37 | -3,704.0 | 259.3 | 5,148.2 | 5,123.1 | 25.05 | 205.489 | |
| 5,350.0 | 5,124.8 | 2,880.5 | 2,850.9 | 25.7 | 10.4 | 38.40 | -3,709.3 | 258.6 | 5,136.9 | 5,111.8 | 25.09 | 204.731 | |
| 5,400.0 | 5,154.1 | 2,909.0 | 2,876.3 | 25.5 | 10.6 | 38.83 | -3,722.1 | 256.8 | 5,122.7 | 5,097.4 | 25.25 | 202.861 | |
| 5,450.0 | 5,180.2 | 2,909.0 | 2,876.3 | 25.3 | 10.6 | 39.32 | -3,722.1 | 256.8 | 5,105.5 | 5,080.3 | 25.24 | 202.240 | |
| 5,500.0 | 5,202.9 | 2,909.0 | 2,876.3 | 25.2 | 10.6 | 40.07 | -3,722.1 | 256.8 | 5,085.7 | 5,060.4 | 25.26 | 201.334 | |
| 5,550.0 | 5,222.1 | 2,909.0 | 2,876.3 | 25.0 | 10.6 | 41.09 | -3,722.1 | 256.8 | 5,063.3 | 5,038.0 | 25.30 | 200.123 | |
| 5,600.0 | 5,237.6 | 2,909.0 | 2,876.3 | 24.9 | 10.6 | 42.39 | -3,722.1 | 256.8 | 5,038.4 | 5,013.0 | 25.37 | 198.598 | |
| 5,650.0 | 5,249.4 | 2,909.0 | 2,876.3 | 24.8 | 10.6 | 44.00 | -3,722.1 | 256.8 | 5,011.1 | 4,985.6 | 25.47 | 196.758 | |
| 5,700.0 | 5,257.3 | 2,936.6 | 2,900.8 | 24.8 | 10.7 | 46.30 | -3,734.8 | 255.2 | 4,981.3 | 4,955.5 | 25.78 | 193.185 | |
| 5,750.0 | 5,261.4 | 2,941.3 | 2,904.9 | 24.8 | 10.8 | 48.74 | -3,737.0 | 255.0 | 4,949.6 | 4,923.6 | 25.98 | 190.533 | |
| 5,777.3 | 5,262.0 | 2,943.6 | 2,906.9 | 24.8 | 10.8 | 50.25 | -3,738.1 | 254.9 | 4,931.4 | 4,905.3 | 26.10 | 188.977 | |
| 5,800.0 | 5,262.0 | 2,945.4 | 2,908.5 | 24.8 | 10.8 | 50.28 | -3,738.9 | 254.8 | 4,916.2 | 4,890.0 | 26.20 | 187.670 | |
| 5,900.0 | 5,262.0 | 2,972.0 | 2,931.8 | 25.2 | 11.0 | 50.66 | -3,751.7 | 253.9 | 4,849.6 | 4,822.8 | 26.84 | 180.711 | |
| 6,000.0 | 5,262.0 | 2,972.0 | 2,931.8 | 25.8 | 11.0 | 50.66 | -3,751.7 | 253.9 | 4,784.0 | 4,756.6 | 27.42 | 174.491 | |
| 6,100.0 | 5,262.0 | 2,972.0 | 2,931.8 | 26.7 | 11.0 | 50.66 | -3,751.7 | 253.9 | 4,719.5 | 4,691.4 | 28.12 | 167.853 | |
| 6,200.0 | 5,262.0 | 2,972.0 | 2,931.8 | 27.8 | 11.0 | 50.66 | -3,751.7 | 253.9 | 4,656.3 | 4,627.4 | 28.93 | 160.934 | |
| 6,300.0 | 5,262.0 | 2,972.0 | 2,931.8 | 29.1 | 11.0 | 50.66 | -3,751.7 | 253.9 | 4,594.4 | 4,564.6 | 29.86 | 153.865 | |
| 6,400.0 | 5,262.0 | 3,002.1 | 2,957.9 | 30.6 | 11.2 | 51.08 | -3,766.6 | 253.3 | 4,533.6 | 4,502.5 | 31.12 | 145.689 | |
| 6,500.0 | 5,262.0 | 3,013.2 | 2,967.5 | 32.2 | 11.3 | 51.23 | -3,772.2 | 253.1 | 4,474.2 | 4,441.8 | 32.34 | 138.353 | |
| 6,600.0 | 5,262.0 | 3,036.0 | 2,987.1 | 33.8 | 11.5 | 51.56 | -3,783.9 | 252.8 | 4,416.2 | 4,382.4 | 33.75 | 130.858 | |
| 6,700.0 | 5,262.0 | 3,036.0 | 2,987.1 | 35.6 | 11.5 | 51.56 | -3,783.9 | 252.8 | 4,359.5 | 4,324.5 | 35.07 | 124.305 | |
| 6,800.0 | 5,262.0 | 3,036.0 | 2,987.1 | 37.5 | 11.5 | 51.56 | -3,783.9 | 252.8 | 4,304.4 | 4,268.0 | 36.48 | 118.005 | |
| 6,900.0 | 5,262.0 | 3,036.0 | 2,987.1 | 39.4 | 11.5 | 51.56 | -3,783.9 | 252.8 | 4,251.0 | 4,213.0 | 37.96 | 111.988 | |
| 7,000.0 | 5,262.0 | 3,069.0 | 3,015.2 | 41.4 | 11.7 | 52.02 | -3,801.3 | 252.5 | 4,198.8 | 4,159.0 | 39.80 | 105.505 | |
| 7,100.0 | 5,262.0 | 3,099.0 | 3,040.4 | 43.4 | 12.0 | 52.44 | -3,817.6 | 252.1 | 4,148.6 | 4,106.9 | 41.69 | 99.509 | |
| 7,200.0 | 5,262.0 | 3,099.0 | 3,040.4 | 45.4 | 12.0 | 52.44 | -3,817.6 | 252.1 | 4,099.9 | 4,056.5 | 43.39 | 94.486 | |
| 7,300.0 | 5,262.0 | 3,139.9 | 3,074.6 | 47.5 | 12.3 | 53.02 | -3,839.9 | 251.9 | 4,052.8 | 4,007.2 | 45.53 | 89.011 | |
| 7,400.0 | 5,262.0 | 3,231.3 | 3,151.5 | 49.7 | 13.1 | 54.32 | -3,889.4 | 252.2 | 4,006.9 | 3,958.7 | 48.23 | 83.078 | |
| 7,500.0 | 5,262.0 | 3,226.0 | 3,147.0 | 51.8 | 13.0 | 54.25 | -3,886.5 | 252.1 | 3,962.7 | 3,912.6 | 50.08 | 79.121 | |
| 7,600.0 | 5,262.0 | 3,257.2 | 3,173.2 | 54.0 | 13.3 | 54.69 | -3,903.5 | 252.3 | 3,920.2 | 3,867.8 | 52.35 | 74.879 | |
| 7,700.0 | 5,262.0 | 3,289.0 | 3,199.7 | 56.2 | 13.6 | 55.15 | -3,921.1 | 252.2 | 3,879.8 | 3,825.1 | 54.69 | 70.936 | |
| 7,800.0 | 5,262.0 | 3,289.0 | 3,199.7 | 58.4 | 13.6 | 55.15 | -3,921.1 | 252.2 | 3,841.2 | 3,784.5 | 56.75 | 67.685 | |
| 7,900.0 | 5,262.0 | 3,409.5 | 3,299.9 | 60.7 | 14.7 | 56.87 | -3,988.0 | 254.5 | 3,804.1 | 3,743.9 | 60.19 | 63.207 | |
| 8,000.0 | 5,262.0 | 3,448.0 | 3,331.9 | 62.9 | 15.0 | 57.42 | -4,009.3 | 256.0 | 3,768.5 | 3,705.7 | 62.80 | 60.012 | |
| 8,100.0 | 5,262.0 | 3,479.0 | 3,357.7 | 65.2 | 15.3 | 57.87 | -4,026.5 | 257.3 | 3,734.8 | 3,669.4 | 65.38 | 57.127 | |
| 8,200.0 | 5,262.0 | 3,506.1 | 3,380.1 | 67.5 | 15.6 | 58.26 | -4,041.7 | 258.4 | 3,703.1 | 3,635.2 | 67.96 | 54.488 | |
| 8,300.0 | 5,262.0 | 3,543.0 | 3,410.5 | 69.8 | 15.9 | 58.79 | -4,062.5 | 259.8 | 3,673.7 | 3,603.0 | 70.71 | 51.954 | |
| 8,400.0 | 5,262.0 | 3,543.0 | 3,410.5 | 72.1 | 15.9 | 58.79 | -4,062.5 | 259.8 | 3,646.4 | 3,573.3 | 73.03 | 49.933 | |
| 8,500.0 | 5,262.0 | 3,575.1 | 3,436.8 | 74.4 | 16.2 | 59.25 | -4,080.9 | 261.1 | 3,621.3 | 3,545.5 | 75.78 | 47.785 | |
| 8,600.0 | 5,262.0 | 3,606.0 | 3,461.8 | 76.7 | 16.5 | 59.69 | -4,098.9 | 262.3 | 3,598.6 | 3,520.1 | 78.55 | 45.812 | |

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

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | DJR Operating | **Local Co-ordinate Reference:** | Well # 108H |
| **Project:** | Betonnie Tsosie Unit | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Reference Site:** | M11 2308 Pad | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Original drilling | **Database:** | EDM |
| **Reference Design:** | APD | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Athena 2308-14L (Logos) - 2H - Original drilling - As drilled — **Offset Site Error:** 0.0 usft

**Survey Program:** 415-MWD+IGRF — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8,700.0 | 5,262.0 | 3,651.4 | 3,498.6 | 79.0 | 17.0 | 60.34 | -4,125.5 | 264.2 | 3,578.2 | 3,496.6 | 81.56 | 43.872 | |
| 8,800.0 | 5,262.0 | 3,696.5 | 3,535.2 | 81.3 | 17.5 | 60.99 | -4,151.7 | 266.0 | 3,559.6 | 3,475.0 | 84.59 | 42.079 | |
| 8,900.0 | 5,262.0 | 3,733.0 | 3,564.9 | 83.7 | 17.8 | 61.52 | -4,172.9 | 267.2 | 3,543.3 | 3,455.8 | 87.53 | 40.482 | |
| 9,000.0 | 5,262.0 | 3,768.7 | 3,594.0 | 86.0 | 18.2 | 62.04 | -4,193.6 | 268.0 | 3,529.4 | 3,438.9 | 90.46 | 39.014 | |
| 9,100.0 | 5,262.0 | 3,835.5 | 3,648.7 | 88.4 | 18.9 | 63.02 | -4,231.9 | 269.2 | 3,517.5 | 3,423.6 | 93.91 | 37.455 | |
| 9,200.0 | 5,262.0 | 3,884.2 | 3,688.8 | 90.7 | 19.4 | 63.74 | -4,259.5 | 270.0 | 3,507.6 | 3,410.6 | 97.09 | 36.129 | |
| 9,300.0 | 5,262.0 | 3,906.9 | 3,707.5 | 93.1 | 19.6 | 64.07 | -4,272.4 | 270.4 | 3,500.3 | 3,400.4 | 99.82 | 35.066 | |
| 9,400.0 | 5,262.0 | 3,923.0 | 3,720.7 | 95.5 | 19.8 | 64.31 | -4,281.7 | 270.6 | 3,495.5 | 3,393.0 | 102.41 | 34.131 | |
| 9,500.0 | 5,262.0 | 3,958.4 | 3,749.7 | 97.8 | 20.2 | 64.83 | -4,302.0 | 270.7 | 3,493.1 | 3,387.8 | 105.32 | 33.168 | |
| 9,540.6 | 5,262.0 | 3,969.2 | 3,758.5 | 98.8 | 20.3 | 64.99 | -4,308.2 | 270.7 | 3,492.9 | 3,386.5 | 106.42 | 32.821 CC | |
| 9,600.0 | 5,262.0 | 4,020.1 | 3,800.6 | 100.2 | 20.8 | 65.75 | -4,336.9 | 270.3 | 3,493.2 | 3,384.5 | 108.68 | 32.142 | |
| 9,700.0 | 5,262.0 | 4,081.7 | 3,851.8 | 102.6 | 21.5 | 66.68 | -4,371.1 | 269.7 | 3,495.3 | 3,383.3 | 112.03 | 31.201 ES | |
| 9,800.0 | 5,262.0 | 4,113.0 | 3,877.9 | 105.0 | 21.8 | 67.15 | -4,388.3 | 269.2 | 3,499.8 | 3,385.0 | 114.77 | 30.493 | |
| 9,900.0 | 5,262.0 | 4,113.0 | 3,877.9 | 107.3 | 21.8 | 67.15 | -4,388.3 | 269.2 | 3,507.0 | 3,390.1 | 116.86 | 30.010 | |
| 10,000.0 | 5,262.0 | 4,113.0 | 3,877.9 | 109.7 | 21.8 | 67.15 | -4,388.3 | 269.2 | 3,516.9 | 3,398.1 | 118.86 | 29.590 | |
| 10,100.0 | 5,262.0 | 4,146.5 | 3,905.7 | 112.1 | 22.2 | 67.65 | -4,407.1 | 268.4 | 3,529.2 | 3,407.7 | 121.46 | 29.055 | |
| 10,200.0 | 5,262.0 | 4,176.0 | 3,929.8 | 114.5 | 22.5 | 68.09 | -4,424.0 | 267.3 | 3,544.4 | 3,420.5 | 123.93 | 28.601 | |
| 10,300.0 | 5,262.0 | 4,176.0 | 3,929.8 | 116.9 | 22.5 | 68.09 | -4,424.0 | 267.3 | 3,562.0 | 3,436.3 | 125.68 | 28.342 | |
| 10,400.0 | 5,262.0 | 4,176.0 | 3,929.8 | 119.3 | 22.5 | 68.09 | -4,424.0 | 267.3 | 3,582.3 | 3,455.0 | 127.34 | 28.133 | |
| 10,500.0 | 5,262.0 | 4,176.0 | 3,929.8 | 121.7 | 22.5 | 68.09 | -4,424.0 | 267.3 | 3,605.3 | 3,476.4 | 128.89 | 27.972 | |
| 10,600.0 | 5,262.0 | 4,206.7 | 3,954.6 | 124.1 | 22.8 | 68.54 | -4,442.1 | 265.8 | 3,630.4 | 3,499.3 | 131.08 | 27.697 | |
| 10,700.0 | 5,262.0 | 4,239.0 | 3,980.3 | 126.5 | 23.2 | 69.02 | -4,461.5 | 263.8 | 3,658.3 | 3,525.1 | 133.23 | 27.458 | |
| 10,800.0 | 5,262.0 | 4,239.0 | 3,980.3 | 128.9 | 23.2 | 69.02 | -4,461.5 | 263.8 | 3,688.2 | 3,553.7 | 134.52 | 27.417 | |
| 10,900.0 | 5,262.0 | 4,675.0 | 4,342.8 | 131.3 | 27.8 | 75.48 | -4,701.6 | 245.3 | 3,719.6 | 3,573.8 | 145.74 | 25.522 | |
| 11,000.0 | 5,262.0 | 4,675.0 | 4,342.8 | 133.7 | 27.8 | 75.48 | -4,701.6 | 245.3 | 3,749.9 | 3,602.8 | 147.07 | 25.496 SF | |
| 11,100.0 | 5,262.0 | 4,675.0 | 4,342.8 | 136.1 | 27.8 | 75.48 | -4,701.6 | 245.3 | 3,782.6 | 3,634.3 | 148.30 | 25.506 | |
| 11,200.0 | 5,262.0 | 4,675.0 | 4,342.8 | 138.5 | 27.8 | 75.48 | -4,701.6 | 245.3 | 3,817.6 | 3,668.2 | 149.43 | 25.548 | |
| 11,300.0 | 5,262.0 | 4,675.0 | 4,342.8 | 140.9 | 27.8 | 75.48 | -4,701.6 | 245.3 | 3,854.9 | 3,704.5 | 150.46 | 25.622 | |
| 11,400.0 | 5,262.0 | 4,704.8 | 4,368.9 | 143.4 | 28.1 | 75.93 | -4,715.9 | 243.8 | 3,894.0 | 3,742.0 | 152.05 | 25.611 | |
| 11,500.0 | 5,262.0 | 4,713.1 | 4,376.1 | 145.8 | 28.2 | 76.05 | -4,719.9 | 243.3 | 3,935.4 | 3,782.3 | 153.08 | 25.708 | |
| 11,600.0 | 5,262.0 | 4,739.0 | 4,398.5 | 148.2 | 28.4 | 76.44 | -4,732.7 | 241.4 | 3,979.0 | 3,824.5 | 154.43 | 25.765 | |
| 11,700.0 | 5,262.0 | 4,739.0 | 4,398.5 | 150.6 | 28.4 | 76.44 | -4,732.7 | 241.4 | 4,024.2 | 3,869.1 | 155.12 | 25.943 | |
| 11,800.0 | 5,262.0 | 4,739.0 | 4,398.5 | 153.0 | 28.4 | 76.44 | -4,732.7 | 241.4 | 4,071.4 | 3,915.7 | 155.72 | 26.146 | |
| 11,900.0 | 5,262.0 | 4,763.7 | 4,419.7 | 155.4 | 28.7 | 76.81 | -4,745.2 | 239.5 | 4,120.4 | 3,963.6 | 156.84 | 26.271 | |
| 12,000.0 | 5,262.0 | 4,794.2 | 4,445.8 | 157.9 | 29.0 | 77.26 | -4,760.9 | 237.2 | 4,171.0 | 4,013.0 | 158.05 | 26.391 | |
| 12,100.0 | 5,262.0 | 4,802.0 | 4,452.4 | 160.3 | 29.1 | 77.37 | -4,765.0 | 236.6 | 4,223.2 | 4,064.6 | 158.64 | 26.621 | |
| 12,200.0 | 5,262.0 | 4,830.9 | 4,476.8 | 162.7 | 29.4 | 77.80 | -4,780.3 | 234.4 | 4,276.9 | 4,117.2 | 159.72 | 26.778 | |
| 12,300.0 | 5,262.0 | 4,848.0 | 4,491.1 | 165.1 | 29.5 | 78.04 | -4,789.6 | 233.0 | 4,332.1 | 4,171.7 | 160.44 | 27.001 | |
| 12,400.0 | 5,262.0 | 4,866.0 | 4,506.1 | 167.5 | 29.7 | 78.30 | -4,799.6 | 231.6 | 4,388.8 | 4,227.6 | 161.15 | 27.235 | |
| 12,500.0 | 5,262.0 | 4,866.0 | 4,506.1 | 170.0 | 29.7 | 78.30 | -4,799.6 | 231.6 | 4,446.9 | 4,285.5 | 161.32 | 27.565 | |
| 12,600.0 | 5,262.0 | 4,879.3 | 4,517.0 | 172.4 | 29.9 | 78.49 | -4,807.0 | 230.4 | 4,506.3 | 4,344.5 | 161.81 | 27.849 | |
| 12,700.0 | 5,262.0 | 4,897.0 | 4,531.3 | 174.8 | 30.1 | 78.74 | -4,817.2 | 228.6 | 4,567.3 | 4,404.9 | 162.39 | 28.126 | |
| 12,800.0 | 5,262.0 | 4,897.0 | 4,531.3 | 177.2 | 30.1 | 78.74 | -4,817.2 | 228.6 | 4,629.4 | 4,467.0 | 162.43 | 28.501 | |
| 12,900.0 | 5,262.0 | 4,897.0 | 4,531.3 | 179.7 | 30.1 | 78.74 | -4,817.2 | 228.6 | 4,692.8 | 4,530.4 | 162.42 | 28.892 | |
| 13,000.0 | 5,262.0 | 4,897.0 | 4,531.3 | 182.1 | 30.1 | 78.74 | -4,817.2 | 228.6 | 4,757.5 | 4,595.1 | 162.38 | 29.298 | |
| 13,100.0 | 5,262.0 | 4,897.0 | 4,531.3 | 184.5 | 30.1 | 78.74 | -4,817.2 | 228.6 | 4,823.4 | 4,661.0 | 162.31 | 29.718 | |
| 13,200.0 | 5,262.0 | 4,897.0 | 4,531.3 | 186.9 | 30.1 | 78.74 | -4,817.2 | 228.6 | 4,890.4 | 4,728.2 | 162.20 | 30.151 | |
| 13,300.0 | 5,262.0 | 4,914.1 | 4,545.0 | 189.4 | 30.3 | 78.98 | -4,827.3 | 226.6 | 4,958.3 | 4,795.7 | 162.57 | 30.500 | |
| 13,400.0 | 5,262.0 | 4,929.0 | 4,556.8 | 191.8 | 30.4 | 79.18 | -4,836.1 | 224.3 | 5,027.5 | 4,864.6 | 162.85 | 30.871 | |
| 13,500.0 | 5,262.0 | 4,929.0 | 4,556.8 | 194.2 | 30.4 | 79.18 | -4,836.1 | 224.3 | 5,097.5 | 4,934.8 | 162.67 | 31.337 | |
| 13,600.0 | 5,262.0 | 4,929.0 | 4,556.8 | 196.7 | 30.4 | 79.18 | -4,836.1 | 224.3 | 5,168.5 | 5,006.0 | 162.46 | 31.814 | |
| 13,700.0 | 5,262.0 | 4,929.0 | 4,556.8 | 199.1 | 30.4 | 79.18 | -4,836.1 | 224.3 | 5,240.4 | 5,078.2 | 162.23 | 32.303 | |

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

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | DJR Operating | **Local Co-ordinate Reference:** | Well # 108H |
| **Project:** | Betonnie Tsosie Unit | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Reference Site:** | M11 2308 Pad | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Original drilling | **Database:** | EDM |
| **Reference Design:** | APD | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Athena 2308-14L (Logos) - 2H - Original drilling - As drilled — **Offset Site Error:** 0.0 usft

**Survey Program:** 415-MWD+IGRF — **Offset Well Error:** 0.0 usft

| Reference | | Offset | | Semi Major Axis | | | Offset Wellbore Centre | | Distance | | | | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Measured Depth (usft) | Vertical Depth (usft) | Measured Depth (usft) | Vertical Depth (usft) | Reference (usft) | Offset (usft) | Highside Toolface (°) | +N/-S (usft) | +E/-W (usft) | Between Centres (usft) | Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | |
| 13,715.1 | 5,262.0 | 4,929.0 | 4,556.8 | 199.5 | 30.4 | 79.18 | -4,836.1 | 224.3 | 5,251.4 | 5,089.2 | 162.19 | 32.377 | |

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | DJR Operating | **Local Co-ordinate Reference:** | Well # 108H |
| **Project:** | Betonnie Tsosie Unit | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Reference Site:** | M11 2308 Pad | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Original drilling | **Database:** | EDM |
| **Reference Design:** | APD | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Athena 2308-14L (Logos) - 3H - Original drilling - As drilled — **Offset Site Error:** 0.0 usft

**Survey Program:** 440-MWD+IGRF — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 174.47 | -3,452.0 | 334.2 | 3,468.3 | | | | |
| 100.0 | 100.0 | 70.2 | 70.2 | 0.2 | 0.1 | 174.47 | -3,452.1 | 334.2 | 3,468.2 | 3,467.9 | 0.28 | N/A | |
| 200.0 | 200.0 | 166.3 | 166.3 | 0.5 | 0.3 | 174.47 | -3,452.2 | 334.3 | 3,468.3 | 3,467.5 | 0.80 | 4,329.014 | |
| 300.0 | 300.0 | 262.4 | 262.4 | 0.9 | 0.5 | 174.47 | -3,452.4 | 334.4 | 3,468.6 | 3,467.3 | 1.33 | 2,614.956 | |
| 400.0 | 400.0 | 358.5 | 358.5 | 1.2 | 0.6 | 174.47 | -3,452.7 | 334.6 | 3,468.9 | 3,467.1 | 1.85 | 1,873.393 | |
| 450.0 | 450.0 | 406.5 | 406.5 | 1.4 | 0.7 | 174.46 | -3,452.9 | 334.7 | 3,469.2 | 3,467.1 | 2.11 | 1,640.800 | |
| 500.0 | 500.0 | 454.3 | 454.3 | 1.6 | 0.8 | -167.56 | -3,453.2 | 334.8 | 3,470.0 | 3,467.5 | 2.40 | 1,443.768 | |
| 600.0 | 599.9 | 555.6 | 555.6 | 1.9 | 1.2 | -167.56 | -3,453.8 | 335.1 | 3,474.8 | 3,471.7 | 3.13 | 1,111.310 | |
| 700.0 | 699.5 | 675.9 | 675.9 | 2.3 | 1.6 | -167.56 | -3,453.8 | 335.8 | 3,483.4 | 3,479.5 | 3.91 | 889.779 | |
| 800.0 | 798.6 | 778.9 | 778.9 | 2.7 | 2.0 | -167.55 | -3,453.6 | 336.4 | 3,496.0 | 3,491.4 | 4.64 | 752.790 | |
| 900.0 | 897.1 | 876.4 | 876.4 | 3.1 | 2.3 | -167.53 | -3,453.3 | 337.0 | 3,512.8 | 3,507.4 | 5.36 | 655.402 | |
| 1,000.0 | 994.7 | 970.9 | 970.8 | 3.6 | 2.6 | -167.49 | -3,453.1 | 337.6 | 3,533.8 | 3,527.7 | 6.07 | 582.005 | |
| 1,090.4 | 1,082.1 | 1,053.0 | 1,053.0 | 4.0 | 2.9 | -167.45 | -3,453.1 | 338.1 | 3,556.5 | 3,549.8 | 6.71 | 529.967 | |
| 1,100.0 | 1,091.3 | 1,061.5 | 1,061.5 | 4.1 | 3.0 | -167.46 | -3,453.1 | 338.1 | 3,559.1 | 3,552.3 | 6.78 | 524.671 | |
| 1,200.0 | 1,187.4 | 1,159.7 | 1,159.7 | 4.6 | 3.3 | -167.56 | -3,453.1 | 338.6 | 3,586.1 | 3,578.6 | 7.51 | 477.714 | |
| 1,300.0 | 1,283.6 | 1,256.3 | 1,256.3 | 5.2 | 3.7 | -167.66 | -3,453.1 | 338.9 | 3,613.1 | 3,604.9 | 8.23 | 438.994 | |
| 1,400.0 | 1,379.7 | 1,355.6 | 1,355.6 | 5.8 | 4.0 | -167.76 | -3,453.0 | 339.2 | 3,640.1 | 3,631.1 | 8.97 | 405.940 | |
| 1,500.0 | 1,475.8 | 1,438.9 | 1,438.9 | 6.4 | 4.3 | -167.85 | -3,453.1 | 339.4 | 3,667.2 | 3,657.5 | 9.65 | 380.090 | |
| 1,600.0 | 1,571.9 | 1,525.3 | 1,525.3 | 7.0 | 4.6 | -167.94 | -3,453.4 | 339.9 | 3,694.6 | 3,684.2 | 10.34 | 357.222 | |
| 1,700.0 | 1,668.1 | 1,622.5 | 1,622.5 | 7.6 | 5.0 | -168.03 | -3,453.9 | 340.4 | 3,722.1 | 3,711.1 | 11.08 | 335.974 | |
| 1,800.0 | 1,764.2 | 1,717.5 | 1,717.5 | 8.2 | 5.3 | -168.12 | -3,454.3 | 340.8 | 3,749.6 | 3,737.8 | 11.81 | 317.551 | |
| 1,900.0 | 1,860.3 | 1,797.9 | 1,797.9 | 8.8 | 5.6 | -168.20 | -3,454.8 | 341.2 | 3,777.3 | 3,764.8 | 12.48 | 302.599 | |
| 2,000.0 | 1,956.4 | 1,912.1 | 1,912.0 | 9.4 | 6.0 | -168.31 | -3,455.8 | 342.1 | 3,805.3 | 3,792.0 | 13.29 | 286.368 | |
| 2,100.0 | 2,052.5 | 2,004.9 | 2,004.8 | 10.0 | 6.3 | -168.40 | -3,456.1 | 342.4 | 3,832.7 | 3,818.7 | 14.01 | 273.547 | |
| 2,200.0 | 2,148.7 | 2,102.4 | 2,102.4 | 10.6 | 6.7 | -168.48 | -3,456.6 | 342.5 | 3,860.4 | 3,845.6 | 14.75 | 261.751 | |
| 2,300.0 | 2,244.8 | 2,210.1 | 2,210.1 | 11.2 | 7.0 | -168.57 | -3,457.0 | 342.2 | 3,887.8 | 3,872.3 | 15.52 | 250.562 | |
| 2,400.0 | 2,340.9 | 2,282.3 | 2,282.3 | 11.9 | 7.3 | -168.62 | -3,457.4 | 341.8 | 3,915.3 | 3,899.2 | 16.15 | 242.408 | |
| 2,500.0 | 2,437.0 | 2,370.1 | 2,370.1 | 12.5 | 7.6 | -168.70 | -3,458.3 | 342.0 | 3,943.4 | 3,926.5 | 16.85 | 233.989 | |
| 2,600.0 | 2,533.1 | 2,468.4 | 2,468.3 | 13.1 | 7.9 | -168.78 | -3,459.2 | 342.5 | 3,971.4 | 3,953.8 | 17.60 | 225.651 | |
| 2,700.0 | 2,629.3 | 2,552.8 | 2,552.8 | 13.7 | 8.2 | -168.85 | -3,460.0 | 342.8 | 3,999.5 | 3,981.2 | 18.29 | 218.654 | |
| 2,800.0 | 2,725.4 | 2,632.8 | 2,632.8 | 14.3 | 8.5 | -168.92 | -3,461.2 | 343.1 | 4,028.0 | 4,009.0 | 18.96 | 212.402 | |
| 2,900.0 | 2,821.5 | 2,724.5 | 2,724.4 | 15.0 | 8.9 | -168.99 | -3,462.8 | 343.2 | 4,056.8 | 4,037.1 | 19.68 | 206.114 | |
| 3,000.0 | 2,917.6 | 2,870.4 | 2,870.3 | 15.6 | 9.4 | -169.10 | -3,464.2 | 343.1 | 4,084.8 | 4,064.2 | 20.61 | 198.168 | |
| 3,100.0 | 3,013.7 | 2,955.7 | 2,955.6 | 16.2 | 9.7 | -169.17 | -3,464.3 | 343.6 | 4,112.1 | 4,090.8 | 21.30 | 193.051 | |
| 3,200.0 | 3,109.9 | 3,038.3 | 3,038.2 | 16.8 | 9.9 | -169.25 | -3,465.0 | 345.4 | 4,140.2 | 4,118.3 | 21.98 | 188.334 | |
| 3,300.0 | 3,206.0 | 3,118.2 | 3,118.0 | 17.5 | 10.2 | -169.35 | -3,465.5 | 348.2 | 4,168.5 | 4,145.9 | 22.66 | 184.000 | |
| 3,400.0 | 3,302.1 | 3,187.1 | 3,186.9 | 18.1 | 10.5 | -169.45 | -3,466.3 | 351.8 | 4,197.4 | 4,174.1 | 23.28 | 180.304 | |
| 3,500.0 | 3,398.2 | 3,260.0 | 3,259.6 | 18.7 | 10.7 | -169.56 | -3,467.5 | 356.3 | 4,226.9 | 4,203.0 | 23.92 | 176.719 | |
| 3,600.0 | 3,494.3 | 3,316.4 | 3,315.9 | 19.3 | 10.9 | -169.66 | -3,468.7 | 360.5 | 4,257.1 | 4,232.7 | 24.49 | 173.856 | |
| 3,700.0 | 3,590.5 | 3,396.9 | 3,396.0 | 20.0 | 11.2 | -169.82 | -3,470.8 | 368.2 | 4,288.0 | 4,262.8 | 25.16 | 170.453 | |
| 3,800.0 | 3,686.6 | 3,482.9 | 3,481.3 | 20.6 | 11.6 | -170.01 | -3,472.6 | 378.4 | 4,318.9 | 4,293.1 | 25.85 | 167.070 | |
| 3,900.0 | 3,782.7 | 3,544.0 | 3,541.8 | 21.2 | 11.8 | -170.17 | -3,474.1 | 386.8 | 4,350.4 | 4,324.0 | 26.43 | 164.573 | |
| 4,000.0 | 3,878.8 | 3,611.1 | 3,608.1 | 21.8 | 12.0 | -170.34 | -3,476.0 | 396.8 | 4,382.6 | 4,355.5 | 27.05 | 162.040 | |
| 4,100.0 | 3,975.0 | 3,697.0 | 3,692.8 | 22.5 | 12.4 | -170.58 | -3,478.8 | 410.8 | 4,415.3 | 4,387.6 | 27.75 | 159.131 | |
| 4,200.0 | 4,071.1 | 3,796.9 | 3,791.4 | 23.1 | 12.8 | -170.85 | -3,481.9 | 426.7 | 4,448.0 | 4,419.5 | 28.52 | 155.984 | |
| 4,300.0 | 4,167.2 | 3,895.9 | 3,889.3 | 23.7 | 13.2 | -171.09 | -3,485.1 | 441.2 | 4,480.7 | 4,451.4 | 29.29 | 153.000 | |
| 4,400.0 | 4,263.3 | 3,958.4 | 3,950.9 | 24.3 | 13.4 | -171.26 | -3,487.0 | 451.7 | 4,513.6 | 4,483.7 | 29.88 | 151.041 | |
| 4,500.0 | 4,359.4 | 6,004.8 | 5,203.5 | 25.0 | 31.5 | -158.88 | -3,462.8 | -590.2 | 4,534.7 | 4,485.1 | 49.58 | 91.455 | |
| 4,600.0 | 4,455.6 | 6,013.6 | 5,203.5 | 25.6 | 31.7 | -158.77 | -3,462.3 | -599.0 | 4,542.5 | 4,492.2 | 50.33 | 90.256 | |
| 4,614.6 | 4,469.6 | 6,014.9 | 5,203.5 | 25.7 | 31.8 | -158.76 | -3,462.2 | -600.3 | 4,543.8 | 4,493.4 | 50.44 | 90.090 | |
| 4,650.0 | 4,503.8 | 6,017.5 | 5,203.5 | 25.9 | 31.8 | -164.50 | -3,462.0 | -602.9 | 4,546.5 | 4,495.9 | 50.67 | 89.721 | |
| 4,700.0 | 4,552.9 | 6,018.9 | 5,203.4 | 26.2 | 31.9 | -178.02 | -3,461.9 | -604.3 | 4,548.5 | 4,497.5 | 50.94 | 89.299 | |

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | DJR Operating | **Local Co-ordinate Reference:** | Well # 108H |
| **Project:** | Betonnie Tsosie Unit | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Reference Site:** | M11 2308 Pad | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Original drilling | **Database:** | EDM |
| **Reference Design:** | APD | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Athena 2308-14L (Logos) - 3H - Original drilling - As drilled — **Offset Site Error:** 0.0 usft

**Survey Program:** 440-MWD+IGRF — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,750.0 | 4,602.4 | 6,017.7 | 5,203.5 | 26.3 | 31.8 | 155.91 | -3,462.0 | -603.1 | 4,548.2 | 4,497.1 | 51.11 | 88.993 | |
| 4,800.0 | 4,652.0 | 6,014.0 | 5,203.5 | 26.5 | 31.8 | 118.20 | -3,462.2 | -599.5 | 4,545.7 | 4,494.6 | 51.19 | 88.800 | |
| 4,850.0 | 4,701.5 | 6,007.8 | 5,203.5 | 26.6 | 31.6 | 90.85 | -3,462.6 | -593.2 | 4,541.1 | 4,489.9 | 51.19 | 88.719 | |
| 4,900.0 | 4,750.6 | 5,998.9 | 5,203.5 | 26.6 | 31.4 | 76.91 | -3,463.2 | -584.4 | 4,534.2 | 4,483.1 | 51.09 | 88.743 | |
| 4,950.0 | 4,799.0 | 5,987.5 | 5,203.6 | 26.6 | 31.2 | 69.63 | -3,463.8 | -573.0 | 4,525.1 | 4,474.2 | 50.92 | 88.868 | |
| 5,000.0 | 4,846.2 | 5,973.7 | 5,203.6 | 26.6 | 30.9 | 65.55 | -3,464.7 | -559.2 | 4,513.9 | 4,463.3 | 50.67 | 89.090 | |
| 5,050.0 | 4,892.2 | 5,963.8 | 5,203.7 | 26.5 | 30.6 | 63.28 | -3,465.3 | -549.3 | 4,500.6 | 4,450.1 | 50.48 | 89.154 | |
| 5,100.0 | 4,936.5 | 5,923.8 | 5,203.9 | 26.5 | 29.8 | 61.74 | -3,467.7 | -509.4 | 4,485.1 | 4,435.5 | 49.62 | 90.393 | |
| 5,150.0 | 4,979.0 | 5,881.3 | 5,203.7 | 26.3 | 28.8 | 60.93 | -3,470.1 | -467.0 | 4,467.5 | 4,418.8 | 48.69 | 91.752 | |
| 5,200.0 | 5,019.3 | 5,848.8 | 5,203.2 | 26.2 | 28.2 | 60.83 | -3,471.8 | -434.5 | 4,447.8 | 4,399.9 | 48.00 | 92.669 | |
| 5,250.0 | 5,057.1 | 5,825.9 | 5,202.8 | 26.0 | 27.7 | 61.32 | -3,473.0 | -411.6 | 4,426.2 | 4,378.7 | 47.53 | 93.123 | |
| 5,300.0 | 5,092.4 | 5,801.5 | 5,202.3 | 25.9 | 27.2 | 62.22 | -3,474.3 | -387.2 | 4,402.7 | 4,355.7 | 47.04 | 93.599 | |
| 5,350.0 | 5,124.8 | 5,775.6 | 5,201.7 | 25.7 | 26.6 | 63.49 | -3,475.7 | -361.4 | 4,377.4 | 4,330.9 | 46.53 | 94.083 | |
| 5,400.0 | 5,154.1 | 5,702.3 | 5,199.3 | 25.5 | 25.2 | 64.63 | -3,479.4 | -288.2 | 4,350.4 | 4,305.3 | 45.09 | 96.483 | |
| 5,450.0 | 5,180.2 | 5,674.0 | 5,198.0 | 25.3 | 24.7 | 66.65 | -3,480.6 | -260.0 | 4,321.5 | 4,276.9 | 44.60 | 96.889 | |
| 5,500.0 | 5,202.9 | 5,651.5 | 5,196.8 | 25.2 | 24.2 | 69.11 | -3,481.6 | -237.6 | 4,291.1 | 4,246.9 | 44.28 | 96.907 | |
| 5,550.0 | 5,222.1 | 5,637.7 | 5,195.9 | 25.0 | 24.0 | 72.01 | -3,482.3 | -223.8 | 4,259.6 | 4,215.5 | 44.16 | 96.466 | |
| 5,600.0 | 5,237.6 | 5,621.0 | 5,194.7 | 24.9 | 23.7 | 75.24 | -3,483.2 | -207.2 | 4,227.1 | 4,183.1 | 44.01 | 96.052 | |
| 5,650.0 | 5,249.4 | 5,510.2 | 5,182.2 | 24.8 | 21.8 | 78.11 | -3,488.3 | -97.2 | 4,193.3 | 4,151.0 | 42.24 | 99.275 | |
| 5,700.0 | 5,257.3 | 5,420.2 | 5,164.1 | 24.8 | 20.4 | 81.55 | -3,490.7 | -9.2 | 4,158.0 | 4,116.9 | 41.04 | 101.303 | |
| 5,750.0 | 5,261.4 | 5,402.6 | 5,159.3 | 24.8 | 20.2 | 85.91 | -3,491.1 | 7.8 | 4,122.0 | 4,080.9 | 41.06 | 100.394 | |
| 5,777.3 | 5,262.0 | 5,384.0 | 5,154.0 | 24.8 | 20.0 | 88.35 | -3,491.6 | 25.6 | 4,102.2 | 4,061.2 | 40.95 | 100.185 | |
| 5,800.0 | 5,262.0 | 5,385.9 | 5,154.5 | 24.8 | 20.0 | 88.36 | -3,491.5 | 23.8 | 4,085.7 | 4,044.6 | 41.11 | 99.378 | |
| 5,900.0 | 5,262.0 | 5,264.2 | 5,110.0 | 25.2 | 18.6 | 87.37 | -3,493.7 | 136.9 | 4,012.7 | 3,972.5 | 40.26 | 99.663 | |
| 6,000.0 | 5,262.0 | 5,241.0 | 5,099.8 | 25.8 | 18.4 | 87.14 | -3,493.8 | 157.7 | 3,939.7 | 3,898.9 | 40.81 | 96.528 | |
| 6,100.0 | 5,262.0 | 5,213.9 | 5,086.9 | 26.7 | 18.1 | 86.85 | -3,494.2 | 181.6 | 3,867.5 | 3,826.0 | 41.47 | 93.251 | |
| 6,200.0 | 5,262.0 | 5,194.0 | 5,076.8 | 27.8 | 18.0 | 86.62 | -3,494.7 | 198.7 | 3,796.3 | 3,754.0 | 42.33 | 89.695 | |
| 6,300.0 | 5,262.0 | 5,170.3 | 5,063.9 | 29.1 | 17.8 | 86.33 | -3,495.6 | 218.6 | 3,726.2 | 3,682.9 | 43.28 | 86.097 | |
| 6,400.0 | 5,262.0 | 5,147.0 | 5,050.4 | 30.6 | 17.6 | 86.02 | -3,496.4 | 237.5 | 3,657.0 | 3,612.6 | 44.35 | 82.464 | |
| 6,500.0 | 5,262.0 | 5,100.0 | 5,020.7 | 32.2 | 17.3 | 85.34 | -3,498.2 | 273.9 | 3,588.7 | 3,543.4 | 45.32 | 79.180 | |
| 6,600.0 | 5,262.0 | 5,063.3 | 4,995.2 | 33.8 | 17.2 | 84.75 | -3,499.4 | 300.3 | 3,521.4 | 3,474.9 | 46.52 | 75.689 | |
| 6,700.0 | 5,262.0 | 5,030.8 | 4,971.1 | 35.6 | 17.0 | 84.19 | -3,500.2 | 322.0 | 3,455.1 | 3,407.2 | 47.87 | 72.173 | |
| 6,800.0 | 5,262.0 | 5,005.0 | 4,951.2 | 37.5 | 16.9 | 83.72 | -3,500.9 | 338.4 | 3,390.1 | 3,340.7 | 49.38 | 68.655 | |
| 6,900.0 | 5,262.0 | 4,957.0 | 4,912.6 | 39.4 | 16.7 | 82.82 | -3,501.5 | 366.9 | 3,326.1 | 3,275.3 | 50.81 | 65.463 | |
| 7,000.0 | 5,262.0 | 4,930.2 | 4,890.2 | 41.4 | 16.7 | 82.29 | -3,501.6 | 381.7 | 3,263.7 | 3,211.2 | 52.51 | 62.153 | |
| 7,100.0 | 5,262.0 | 4,910.0 | 4,873.1 | 43.4 | 16.6 | 81.89 | -3,501.8 | 392.4 | 3,203.0 | 3,148.6 | 54.35 | 58.929 | |
| 7,200.0 | 5,262.0 | 4,910.0 | 4,873.1 | 45.4 | 16.6 | 81.89 | -3,501.8 | 392.4 | 3,144.1 | 3,087.7 | 56.45 | 55.693 | |
| 7,300.0 | 5,262.0 | 4,883.2 | 4,850.0 | 47.5 | 16.5 | 81.35 | -3,502.1 | 405.9 | 3,087.2 | 3,028.7 | 58.42 | 52.844 | |
| 7,400.0 | 5,262.0 | 4,847.5 | 4,818.3 | 49.7 | 16.4 | 80.60 | -3,502.2 | 422.3 | 3,032.3 | 2,971.9 | 60.39 | 50.213 | |
| 7,500.0 | 5,262.0 | 4,779.5 | 4,756.7 | 51.8 | 16.3 | 79.15 | -3,500.8 | 451.2 | 2,979.2 | 2,917.1 | 62.14 | 47.940 | |
| 7,600.0 | 5,262.0 | 4,767.0 | 4,745.2 | 54.0 | 16.2 | 78.88 | -3,500.3 | 456.1 | 2,928.1 | 2,863.7 | 64.44 | 45.439 | |
| 7,700.0 | 5,262.0 | 4,767.0 | 4,745.2 | 56.2 | 16.2 | 78.88 | -3,500.3 | 456.1 | 2,879.6 | 2,812.7 | 66.92 | 43.034 | |
| 7,800.0 | 5,262.0 | 4,767.0 | 4,745.2 | 58.4 | 16.2 | 78.88 | -3,500.3 | 456.1 | 2,833.9 | 2,764.4 | 69.45 | 40.805 | |
| 7,900.0 | 5,262.0 | 4,745.3 | 4,725.1 | 60.7 | 16.2 | 78.40 | -3,499.5 | 464.3 | 2,790.6 | 2,718.7 | 71.83 | 38.851 | |
| 8,000.0 | 5,262.0 | 4,739.6 | 4,719.9 | 62.9 | 16.2 | 78.28 | -3,499.4 | 466.3 | 2,750.4 | 2,676.0 | 74.39 | 36.971 | |
| 8,100.0 | 5,262.0 | 4,720.0 | 4,701.4 | 65.2 | 16.1 | 77.85 | -3,498.9 | 473.0 | 2,713.4 | 2,636.5 | 76.85 | 35.308 | |
| 8,200.0 | 5,262.0 | 4,720.0 | 4,701.4 | 67.5 | 16.1 | 77.85 | -3,498.9 | 473.0 | 2,679.3 | 2,599.8 | 79.51 | 33.698 | |
| 8,300.0 | 5,262.0 | 4,720.0 | 4,701.4 | 69.8 | 16.1 | 77.85 | -3,498.9 | 473.0 | 2,648.6 | 2,566.4 | 82.17 | 32.232 | |
| 8,400.0 | 5,262.0 | 4,720.0 | 4,701.4 | 72.1 | 16.1 | 77.85 | -3,498.9 | 473.0 | 2,621.3 | 2,536.5 | 84.82 | 30.903 | |
| 8,500.0 | 5,262.0 | 4,720.0 | 4,701.4 | 74.4 | 16.1 | 77.85 | -3,498.9 | 473.0 | 2,597.6 | 2,510.2 | 87.45 | 29.705 | |
| 8,600.0 | 5,262.0 | 4,720.0 | 4,701.4 | 76.7 | 16.1 | 77.85 | -3,498.9 | 473.0 | 2,577.6 | 2,487.5 | 90.03 | 28.631 | |
| 8,700.0 | 5,262.0 | 4,720.0 | 4,701.4 | 79.0 | 16.1 | 77.85 | -3,498.9 | 473.0 | 2,561.3 | 2,468.7 | 92.55 | 27.675 | |

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

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | DJR Operating | **Local Co-ordinate Reference:** | Well # 108H |
| **Project:** | Betonnie Tsosie Unit | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Reference Site:** | M11 2308 Pad | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Original drilling | **Database:** | EDM |
| **Reference Design:** | APD | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Athena 2308-14L (Logos) - 3H - Original drilling - As drilled — **Offset Site Error:** 0.0 usft

**Survey Program:** 440-MWD+IGRF — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8,800.0 | 5,262.0 | 4,698.5 | 4,681.0 | 81.3 | 16.1 | 77.37 | -3,498.6 | 479.8 | 2,548.4 | 2,453.7 | 94.77 | 26.891 | |
| 8,900.0 | 5,262.0 | 4,693.8 | 4,676.6 | 83.7 | 16.0 | 77.27 | -3,498.5 | 481.2 | 2,539.7 | 2,442.6 | 97.08 | 26.161 | |
| 9,000.0 | 5,262.0 | 4,673.0 | 4,656.6 | 86.0 | 16.0 | 76.81 | -3,498.4 | 487.1 | 2,535.0 | 2,435.9 | 99.11 | 25.578 | |
| 9,077.4 | 5,262.0 | 4,673.0 | 4,656.6 | 87.9 | 16.0 | 76.81 | -3,498.4 | 487.1 | 2,533.8 | 2,433.0 | 100.78 | 25.142 CC | |
| 9,100.0 | 5,262.0 | 4,673.0 | 4,656.6 | 88.4 | 16.0 | 76.81 | -3,498.4 | 487.1 | 2,533.9 | 2,432.7 | 101.25 | 25.026 ES | |
| 9,200.0 | 5,262.0 | 4,673.0 | 4,656.6 | 90.7 | 16.0 | 76.81 | -3,498.4 | 487.1 | 2,536.8 | 2,433.5 | 103.27 | 24.564 | |
| 9,300.0 | 5,262.0 | 4,673.0 | 4,656.6 | 93.1 | 16.0 | 76.81 | -3,498.4 | 487.1 | 2,543.6 | 2,438.4 | 105.16 | 24.189 | |
| 9,400.0 | 5,262.0 | 4,673.0 | 4,656.6 | 95.5 | 16.0 | 76.81 | -3,498.4 | 487.1 | 2,554.3 | 2,447.4 | 106.90 | 23.894 | |
| 9,500.0 | 5,262.0 | 4,673.0 | 4,656.6 | 97.8 | 16.0 | 76.81 | -3,498.4 | 487.1 | 2,568.8 | 2,460.3 | 108.50 | 23.676 | |
| 9,600.0 | 5,262.0 | 4,673.0 | 4,656.6 | 100.2 | 16.0 | 76.81 | -3,498.4 | 487.1 | 2,587.1 | 2,477.2 | 109.95 | 23.531 | |
| 9,700.0 | 5,262.0 | 4,673.0 | 4,656.6 | 102.6 | 16.0 | 76.81 | -3,498.4 | 487.1 | 2,609.2 | 2,497.9 | 111.25 | 23.453 SF | |
| 9,800.0 | 5,262.0 | 4,654.8 | 4,639.0 | 105.0 | 15.9 | 76.40 | -3,498.4 | 491.9 | 2,634.6 | 2,522.4 | 112.22 | 23.478 | |
| 9,900.0 | 5,262.0 | 4,650.6 | 4,635.0 | 107.3 | 15.9 | 76.31 | -3,498.5 | 492.9 | 2,663.6 | 2,550.4 | 113.19 | 23.533 | |
| 10,000.0 | 5,262.0 | 4,646.5 | 4,631.0 | 109.7 | 15.9 | 76.22 | -3,498.5 | 493.9 | 2,696.0 | 2,582.0 | 114.02 | 23.645 | |
| 10,100.0 | 5,262.0 | 4,626.0 | 4,611.1 | 112.1 | 15.9 | 75.76 | -3,498.7 | 498.7 | 2,731.9 | 2,617.3 | 114.56 | 23.848 | |
| 10,200.0 | 5,262.0 | 4,626.0 | 4,611.1 | 114.5 | 15.9 | 75.76 | -3,498.7 | 498.7 | 2,770.6 | 2,655.4 | 115.17 | 24.056 | |
| 10,300.0 | 5,262.0 | 4,626.0 | 4,611.1 | 116.9 | 15.9 | 75.76 | -3,498.7 | 498.7 | 2,812.3 | 2,696.6 | 115.67 | 24.313 | |
| 10,400.0 | 5,262.0 | 4,626.0 | 4,611.1 | 119.3 | 15.9 | 75.76 | -3,498.7 | 498.7 | 2,856.9 | 2,740.9 | 116.06 | 24.616 | |
| 10,500.0 | 5,262.0 | 4,626.0 | 4,611.1 | 121.7 | 15.9 | 75.76 | -3,498.7 | 498.7 | 2,904.3 | 2,787.9 | 116.34 | 24.964 | |
| 10,600.0 | 5,262.0 | 4,626.0 | 4,611.1 | 124.1 | 15.9 | 75.76 | -3,498.7 | 498.7 | 2,954.3 | 2,837.8 | 116.53 | 25.352 | |
| 10,700.0 | 5,262.0 | 4,626.0 | 4,611.1 | 126.5 | 15.9 | 75.76 | -3,498.7 | 498.7 | 3,006.8 | 2,890.2 | 116.63 | 25.780 | |
| 10,800.0 | 5,262.0 | 4,626.0 | 4,611.1 | 128.9 | 15.9 | 75.76 | -3,498.7 | 498.7 | 3,061.6 | 2,945.0 | 116.66 | 26.245 | |
| 10,900.0 | 5,262.0 | 4,626.0 | 4,611.1 | 131.3 | 15.9 | 75.76 | -3,498.7 | 498.7 | 3,118.8 | 3,002.1 | 116.61 | 26.745 | |
| 11,000.0 | 5,262.0 | 4,626.0 | 4,611.1 | 133.7 | 15.9 | 75.76 | -3,498.7 | 498.7 | 3,178.0 | 3,061.5 | 116.51 | 27.278 | |
| 11,100.0 | 5,262.0 | 4,626.0 | 4,611.1 | 136.1 | 15.9 | 75.76 | -3,498.7 | 498.7 | 3,239.2 | 3,122.9 | 116.34 | 27.842 | |
| 11,200.0 | 5,262.0 | 4,605.5 | 4,591.0 | 138.5 | 15.8 | 75.30 | -3,499.1 | 503.0 | 3,302.0 | 3,186.0 | 115.97 | 28.473 | |
| 11,300.0 | 5,262.0 | 4,602.8 | 4,588.3 | 140.9 | 15.8 | 75.24 | -3,499.1 | 503.5 | 3,366.8 | 3,251.1 | 115.70 | 29.100 | |
| 11,400.0 | 5,262.0 | 4,600.2 | 4,585.8 | 143.4 | 15.8 | 75.19 | -3,499.2 | 504.0 | 3,433.3 | 3,317.9 | 115.39 | 29.753 | |
| 11,500.0 | 5,262.0 | 4,597.7 | 4,583.3 | 145.8 | 15.8 | 75.13 | -3,499.2 | 504.4 | 3,501.4 | 3,386.3 | 115.06 | 30.432 | |
| 11,600.0 | 5,262.0 | 4,578.0 | 4,564.0 | 148.2 | 15.7 | 74.70 | -3,499.5 | 507.8 | 3,571.2 | 3,456.6 | 114.57 | 31.171 | |
| 11,700.0 | 5,262.0 | 4,578.0 | 4,564.0 | 150.6 | 15.7 | 74.70 | -3,499.5 | 507.8 | 3,642.1 | 3,527.9 | 114.20 | 31.892 | |
| 11,800.0 | 5,262.0 | 4,578.0 | 4,564.0 | 153.0 | 15.7 | 74.70 | -3,499.5 | 507.8 | 3,714.4 | 3,600.6 | 113.82 | 32.634 | |
| 11,900.0 | 5,262.0 | 4,578.0 | 4,564.0 | 155.4 | 15.7 | 74.70 | -3,499.5 | 507.8 | 3,787.9 | 3,674.5 | 113.42 | 33.397 | |
| 12,000.0 | 5,262.0 | 4,578.0 | 4,564.0 | 157.9 | 15.7 | 74.70 | -3,499.5 | 507.8 | 3,862.6 | 3,749.6 | 113.01 | 34.179 | |
| 12,100.0 | 5,262.0 | 4,578.0 | 4,564.0 | 160.3 | 15.7 | 74.70 | -3,499.5 | 507.8 | 3,938.5 | 3,825.9 | 112.59 | 34.980 | |
| 12,200.0 | 5,262.0 | 4,578.0 | 4,564.0 | 162.7 | 15.7 | 74.70 | -3,499.5 | 507.8 | 4,015.4 | 3,903.2 | 112.16 | 35.800 | |
| 12,300.0 | 5,262.0 | 4,578.0 | 4,564.0 | 165.1 | 15.7 | 74.70 | -3,499.5 | 507.8 | 4,093.3 | 3,981.5 | 111.73 | 36.636 | |
| 12,400.0 | 5,262.0 | 4,578.0 | 4,564.0 | 167.5 | 15.7 | 74.70 | -3,499.5 | 507.8 | 4,172.1 | 4,060.8 | 111.29 | 37.488 | |
| 12,500.0 | 5,262.0 | 4,578.0 | 4,564.0 | 170.0 | 15.7 | 74.70 | -3,499.5 | 507.8 | 4,251.8 | 4,141.0 | 110.85 | 38.356 | |
| 12,600.0 | 5,262.0 | 4,578.0 | 4,564.0 | 172.4 | 15.7 | 74.70 | -3,499.5 | 507.8 | 4,332.4 | 4,222.0 | 110.41 | 39.238 | |
| 12,700.0 | 5,262.0 | 4,578.0 | 4,564.0 | 174.8 | 15.7 | 74.70 | -3,499.5 | 507.8 | 4,413.8 | 4,303.8 | 109.97 | 40.135 | |
| 12,800.0 | 5,262.0 | 4,578.0 | 4,564.0 | 177.2 | 15.7 | 74.70 | -3,499.5 | 507.8 | 4,495.9 | 4,386.3 | 109.54 | 41.044 | |
| 12,900.0 | 5,262.0 | 4,578.0 | 4,564.0 | 179.7 | 15.7 | 74.70 | -3,499.5 | 507.8 | 4,578.7 | 4,469.6 | 109.10 | 41.967 | |
| 13,000.0 | 5,262.0 | 4,578.0 | 4,564.0 | 182.1 | 15.7 | 74.70 | -3,499.5 | 507.8 | 4,662.2 | 4,553.5 | 108.67 | 42.902 | |
| 13,100.0 | 5,262.0 | 4,578.0 | 4,564.0 | 184.5 | 15.7 | 74.70 | -3,499.5 | 507.8 | 4,746.3 | 4,638.1 | 108.25 | 43.848 | |
| 13,200.0 | 5,262.0 | 4,578.0 | 4,564.0 | 186.9 | 15.7 | 74.70 | -3,499.5 | 507.8 | 4,831.1 | 4,723.2 | 107.82 | 44.805 | |
| 13,300.0 | 5,262.0 | 4,578.0 | 4,564.0 | 189.4 | 15.7 | 74.70 | -3,499.5 | 507.8 | 4,916.4 | 4,809.0 | 107.41 | 45.773 | |
| 13,400.0 | 5,262.0 | 4,578.0 | 4,564.0 | 191.8 | 15.7 | 74.70 | -3,499.5 | 507.8 | 5,002.2 | 4,895.3 | 107.00 | 46.751 | |
| 13,500.0 | 5,262.0 | 4,578.0 | 4,564.0 | 194.2 | 15.7 | 74.70 | -3,499.5 | 507.8 | 5,088.6 | 4,982.0 | 106.59 | 47.739 | |
| 13,600.0 | 5,262.0 | 4,556.8 | 4,543.0 | 196.7 | 15.7 | 74.23 | -3,499.8 | 511.0 | 5,175.2 | 5,069.1 | 106.08 | 48.785 | |
| 13,700.0 | 5,262.0 | 4,555.3 | 4,541.5 | 199.1 | 15.7 | 74.20 | -3,499.8 | 511.2 | 5,262.5 | 5,156.8 | 105.68 | 49.795 | |
| 13,715.1 | 5,262.0 | 4,555.1 | 4,541.3 | 199.5 | 15.7 | 74.19 | -3,499.8 | 511.2 | 5,275.8 | 5,170.1 | 105.62 | 49.948 | |

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

| | | | |
|---|---|---|---|
| **Company:** | DJR Operating | **Local Co-ordinate Reference:** | Well # 108H |
| **Project:** | Betonnie Tsosie Unit | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Reference Site:** | M11 2308 Pad | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Original drilling | **Database:** | EDM |
| **Reference Design:** | APD | **Offset TVD Reference:** | Offset Datum |

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | DJR Operating | **Local Co-ordinate Reference:** | Well # 108H |
| **Project:** | Betonnie Tsosie Unit | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Reference Site:** | M11 2308 Pad | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Original drilling | **Database:** | EDM |
| **Reference Design:** | APD | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Chaco 2308-14E (Enduring) - 151H - Original drilling - Pathfinder — **Offset Site Error:** 0.0 usft

**Survey Program:** 451-MWD+IGRF — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 176.91 | -1,769.2 | 95.6 | 1,771.8 | | | | |
| 100.0 | 100.0 | 82.0 | 82.0 | 0.2 | 0.1 | 176.91 | -1,769.2 | 95.5 | 1,771.8 | 1,771.5 | 0.30 | 5,966.485 | |
| 200.0 | 200.0 | 179.6 | 179.6 | 0.5 | 0.3 | 176.92 | -1,769.4 | 95.1 | 1,772.0 | 1,771.1 | 0.83 | 2,146.772 | |
| 300.0 | 300.0 | 277.2 | 277.2 | 0.9 | 0.5 | 176.94 | -1,769.7 | 94.5 | 1,772.3 | 1,770.9 | 1.35 | 1,309.070 | |
| 400.0 | 400.0 | 374.8 | 374.8 | 1.2 | 0.7 | 176.97 | -1,770.2 | 93.7 | 1,772.7 | 1,770.8 | 1.88 | 941.805 | |
| 450.0 | 450.0 | 423.6 | 423.6 | 1.4 | 0.7 | 176.99 | -1,770.5 | 93.2 | 1,773.0 | 1,770.9 | 2.15 | 826.009 | |
| 500.0 | 500.0 | 472.1 | 472.1 | 1.6 | 0.9 | -165.02 | -1,770.9 | 92.6 | 1,773.8 | 1,771.4 | 2.45 | 724.123 | |
| 600.0 | 599.9 | 791.3 | 790.7 | 1.9 | 2.0 | -165.17 | -1,756.6 | 92.7 | 1,775.9 | 1,772.0 | 3.91 | 454.318 | |
| 700.0 | 699.5 | 916.7 | 915.0 | 2.3 | 2.5 | -165.41 | -1,740.7 | 95.6 | 1,771.7 | 1,767.0 | 4.70 | 376.819 | |
| 800.0 | 798.6 | 1,157.4 | 1,151.9 | 2.7 | 3.5 | -165.92 | -1,698.8 | 100.3 | 1,766.6 | 1,760.7 | 5.90 | 299.317 | |
| 900.0 | 897.1 | 1,351.9 | 1,341.0 | 3.1 | 4.5 | -166.34 | -1,653.2 | 100.6 | 1,760.1 | 1,753.1 | 6.96 | 253.049 | |
| 1,000.0 | 994.7 | 1,540.2 | 1,521.3 | 3.6 | 5.6 | -166.75 | -1,599.2 | 98.1 | 1,752.0 | 1,744.0 | 8.00 | 219.030 | |
| 1,090.4 | 1,082.1 | 1,707.4 | 1,679.0 | 4.0 | 6.7 | -167.28 | -1,543.5 | 98.4 | 1,744.1 | 1,735.2 | 8.95 | 194.888 | |
| 1,100.0 | 1,091.3 | 1,718.2 | 1,689.1 | 4.1 | 6.7 | -167.32 | -1,539.7 | 98.6 | 1,743.3 | 1,734.3 | 9.03 | 193.118 | |
| 1,200.0 | 1,187.4 | 1,805.4 | 1,770.6 | 4.6 | 7.3 | -167.63 | -1,508.9 | 100.1 | 1,734.7 | 1,724.9 | 9.79 | 177.178 | |
| 1,300.0 | 1,283.6 | 1,878.7 | 1,839.6 | 5.2 | 7.8 | -167.88 | -1,483.9 | 100.8 | 1,727.5 | 1,717.0 | 10.52 | 164.275 | |
| 1,400.0 | 1,379.7 | 1,984.3 | 1,939.1 | 5.8 | 8.6 | -168.22 | -1,448.8 | 101.4 | 1,721.0 | 1,709.7 | 11.35 | 151.640 | |
| 1,500.0 | 1,475.8 | 2,080.0 | 2,029.1 | 6.4 | 9.2 | -168.59 | -1,416.5 | 103.7 | 1,714.3 | 1,702.2 | 12.16 | 140.981 | |
| 1,600.0 | 1,571.9 | 2,173.7 | 2,117.4 | 7.0 | 9.9 | -168.95 | -1,385.2 | 105.8 | 1,708.0 | 1,695.1 | 12.97 | 131.704 | |
| 1,700.0 | 1,668.1 | 2,264.9 | 2,203.5 | 7.6 | 10.5 | -169.28 | -1,355.2 | 107.4 | 1,702.4 | 1,688.6 | 13.77 | 123.620 | |
| 1,800.0 | 1,764.2 | 2,426.6 | 2,355.2 | 8.2 | 11.7 | -169.82 | -1,299.1 | 108.0 | 1,694.4 | 1,679.6 | 14.80 | 114.457 | |
| 1,900.0 | 1,860.3 | 2,525.1 | 2,447.0 | 8.8 | 12.4 | -170.18 | -1,263.4 | 109.0 | 1,685.3 | 1,669.7 | 15.64 | 107.731 | |
| 2,000.0 | 1,956.4 | 2,634.7 | 2,548.8 | 9.4 | 13.2 | -170.72 | -1,223.2 | 114.0 | 1,676.1 | 1,659.6 | 16.53 | 101.371 | |
| 2,100.0 | 2,052.5 | 2,717.3 | 2,625.5 | 10.0 | 13.8 | -171.14 | -1,192.8 | 118.2 | 1,667.0 | 1,649.6 | 17.35 | 96.105 | |
| 2,200.0 | 2,148.7 | 2,798.5 | 2,701.4 | 10.6 | 14.4 | -171.53 | -1,163.9 | 121.3 | 1,659.2 | 1,641.0 | 18.15 | 91.420 | |
| 2,300.0 | 2,244.8 | 2,890.8 | 2,787.8 | 11.2 | 15.1 | -171.95 | -1,131.6 | 124.5 | 1,652.0 | 1,633.0 | 18.99 | 86.995 | |
| 2,400.0 | 2,340.9 | 2,962.0 | 2,854.6 | 11.9 | 15.6 | -172.27 | -1,107.3 | 126.8 | 1,645.8 | 1,626.1 | 19.76 | 83.297 | |
| 2,500.0 | 2,437.0 | 3,043.4 | 2,931.5 | 12.5 | 16.2 | -172.62 | -1,080.7 | 129.0 | 1,641.2 | 1,620.6 | 20.56 | 79.839 | |
| 2,600.0 | 2,533.1 | 3,183.4 | 3,063.9 | 13.1 | 17.2 | -173.18 | -1,035.3 | 132.1 | 1,637.1 | 1,615.5 | 21.55 | 75.957 | |
| 2,700.0 | 2,629.3 | 3,281.8 | 3,156.2 | 13.7 | 17.9 | -173.59 | -1,001.1 | 133.8 | 1,630.2 | 1,607.8 | 22.42 | 72.718 | |
| 2,800.0 | 2,725.4 | 3,390.7 | 3,258.6 | 14.3 | 18.7 | -174.00 | -964.0 | 134.7 | 1,624.1 | 1,600.8 | 23.31 | 69.663 | |
| 2,900.0 | 2,821.5 | 3,477.9 | 3,340.4 | 15.0 | 19.3 | -174.35 | -934.0 | 135.8 | 1,617.6 | 1,593.5 | 24.15 | 66.993 | |
| 3,000.0 | 2,917.6 | 3,558.1 | 3,416.1 | 15.6 | 19.9 | -174.66 | -907.3 | 136.8 | 1,612.5 | 1,587.5 | 24.95 | 64.621 | |
| 3,100.0 | 3,013.7 | 3,638.6 | 3,492.1 | 16.2 | 20.5 | -174.98 | -881.2 | 138.0 | 1,608.3 | 1,582.5 | 25.76 | 62.438 | |
| 3,200.0 | 3,109.9 | 3,700.2 | 3,550.8 | 16.8 | 20.9 | -175.22 | -862.2 | 139.0 | 1,606.0 | 1,579.5 | 26.49 | 60.633 | |
| 3,235.8 | 3,144.3 | 3,720.0 | 3,569.7 | 17.1 | 21.0 | -175.29 | -856.5 | 139.2 | 1,605.8 | 1,579.1 | 26.74 | 60.061 | |
| 3,300.0 | 3,206.0 | 3,752.3 | 3,600.8 | 17.5 | 21.2 | -175.40 | -847.6 | 139.6 | 1,606.4 | 1,579.3 | 27.16 | 59.152 | |
| 3,400.0 | 3,302.1 | 3,817.1 | 3,663.5 | 18.1 | 21.6 | -175.61 | -831.5 | 140.2 | 1,609.8 | 1,582.0 | 27.85 | 57.794 | |
| 3,500.0 | 3,398.2 | 3,888.9 | 3,733.3 | 18.7 | 22.0 | -175.81 | -814.5 | 140.5 | 1,614.7 | 1,586.1 | 28.56 | 56.529 | |
| 3,600.0 | 3,494.3 | 3,948.9 | 3,791.9 | 19.3 | 22.3 | -175.97 | -801.8 | 140.7 | 1,621.8 | 1,592.6 | 29.20 | 55.538 | |
| 3,700.0 | 3,590.5 | 4,028.3 | 3,869.8 | 20.0 | 22.7 | -176.17 | -786.7 | 141.2 | 1,631.1 | 1,601.2 | 29.92 | 54.525 | |
| 3,800.0 | 3,686.6 | 4,099.0 | 3,939.4 | 20.6 | 23.0 | -176.32 | -774.0 | 141.0 | 1,641.6 | 1,611.0 | 30.57 | 53.696 | |
| 3,900.0 | 3,782.7 | 4,162.0 | 4,001.6 | 21.2 | 23.3 | -176.43 | -763.8 | 140.6 | 1,653.7 | 1,622.6 | 31.17 | 53.055 | |
| 4,000.0 | 3,878.8 | 4,225.0 | 4,063.9 | 21.8 | 23.6 | -176.55 | -754.6 | 140.6 | 1,667.8 | 1,636.0 | 31.75 | 52.524 | |
| 4,100.0 | 3,975.0 | 4,289.0 | 4,127.4 | 22.5 | 23.8 | -176.68 | -746.7 | 141.2 | 1,684.0 | 1,651.7 | 32.32 | 52.099 | |
| 4,200.0 | 4,071.1 | 4,352.0 | 4,190.1 | 23.1 | 24.1 | -176.80 | -740.3 | 142.1 | 1,702.5 | 1,669.7 | 32.87 | 51.795 | |
| 4,300.0 | 4,167.2 | 4,415.0 | 4,252.9 | 23.7 | 24.3 | -176.90 | -735.1 | 143.0 | 1,723.0 | 1,689.6 | 33.40 | 51.589 | |
| 4,400.0 | 4,263.3 | 4,479.0 | 4,316.7 | 24.3 | 24.5 | -176.99 | -731.4 | 143.8 | 1,745.4 | 1,711.5 | 33.91 | 51.470 | |
| 4,500.0 | 4,359.4 | 4,542.0 | 4,379.7 | 25.0 | 24.6 | -177.05 | -729.2 | 144.1 | 1,769.9 | 1,735.5 | 34.40 | 51.458 | |
| 4,600.0 | 4,455.6 | 4,622.9 | 4,460.6 | 25.6 | 24.8 | -177.09 | -727.9 | 143.6 | 1,795.9 | 1,761.0 | 34.98 | 51.342 | |
| 4,614.6 | 4,469.6 | 4,635.2 | 4,472.9 | 25.7 | 24.8 | -177.09 | -727.8 | 143.5 | 1,799.8 | 1,764.7 | 35.07 | 51.323 | |
| 4,650.0 | 4,503.8 | 4,668.0 | 4,505.7 | 25.9 | 24.9 | 176.96 | -727.6 | 143.2 | 1,808.4 | 1,773.1 | 35.29 | 51.237 | |

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

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | DJR Operating | **Local Co-ordinate Reference:** | Well # 108H |
| **Project:** | Betonnie Tsosie Unit | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Reference Site:** | M11 2308 Pad | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Original drilling | **Database:** | EDM |
| **Reference Design:** | APD | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Chaco 2308-14E (Enduring) - 151H - Original drilling - Pathfinder — **Offset Site Error:** 0.0 usft

**Survey Program:** 451-MWD+IGRF — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,700.0 | 4,552.9 | 4,777.3 | 4,614.8 | 26.2 | 25.2 | 163.48 | -726.2 | 136.9 | 1,816.7 | 1,780.7 | 35.97 | 50.505 | |
| 4,750.0 | 4,602.4 | 4,833.6 | 4,670.6 | 26.3 | 25.3 | 137.57 | -725.5 | 129.6 | 1,820.6 | 1,784.3 | 36.28 | 50.186 | |
| 4,800.0 | 4,652.0 | 5,158.8 | 4,962.0 | 26.5 | 26.0 | 104.90 | -721.5 | -5.0 | 1,818.0 | 1,780.5 | 37.53 | 48.441 | |
| 4,850.0 | 4,701.5 | 5,189.1 | 4,984.2 | 26.6 | 26.1 | 78.50 | -721.1 | -25.7 | 1,809.3 | 1,771.5 | 37.75 | 47.929 | |
| 4,900.0 | 4,750.6 | 5,217.7 | 5,004.4 | 26.6 | 26.1 | 65.56 | -721.1 | -45.9 | 1,798.2 | 1,760.2 | 37.96 | 47.369 | |
| 4,950.0 | 4,799.0 | 5,242.4 | 5,021.2 | 26.6 | 26.2 | 59.25 | -721.2 | -64.0 | 1,784.8 | 1,746.7 | 38.15 | 46.786 | |
| 5,000.0 | 4,846.2 | 5,265.2 | 5,036.3 | 26.6 | 26.2 | 56.15 | -721.4 | -81.0 | 1,769.5 | 1,731.1 | 38.34 | 46.154 | |
| 5,050.0 | 4,892.2 | 5,283.3 | 5,048.1 | 26.5 | 26.3 | 54.71 | -721.6 | -94.8 | 1,752.2 | 1,713.7 | 38.49 | 45.528 | |
| 5,100.0 | 4,936.5 | 5,297.4 | 5,057.1 | 26.5 | 26.3 | 54.23 | -721.8 | -105.6 | 1,733.2 | 1,694.6 | 38.59 | 44.908 | |
| 5,150.0 | 4,979.0 | 5,308.2 | 5,063.9 | 26.3 | 26.4 | 54.41 | -721.9 | -114.1 | 1,712.5 | 1,673.9 | 38.68 | 44.274 | |
| 5,200.0 | 5,019.3 | 5,315.8 | 5,068.6 | 26.2 | 26.4 | 55.04 | -722.0 | -120.0 | 1,690.5 | 1,651.7 | 38.74 | 43.640 | |
| 5,250.0 | 5,057.1 | 5,320.2 | 5,071.3 | 26.0 | 26.4 | 55.99 | -722.1 | -123.4 | 1,667.0 | 1,628.3 | 38.76 | 43.010 | |
| 5,300.0 | 5,092.4 | 5,321.6 | 5,072.2 | 25.9 | 26.4 | 57.20 | -722.1 | -124.5 | 1,642.4 | 1,603.6 | 38.76 | 42.379 | |
| 5,350.0 | 5,124.8 | 5,320.3 | 5,071.4 | 25.7 | 26.4 | 58.63 | -722.1 | -123.5 | 1,616.6 | 1,577.9 | 38.73 | 41.739 | |
| 5,400.0 | 5,154.1 | 5,316.4 | 5,069.0 | 25.5 | 26.4 | 60.24 | -722.0 | -120.5 | 1,589.8 | 1,551.1 | 38.70 | 41.086 | |
| 5,450.0 | 5,180.2 | 5,310.3 | 5,065.2 | 25.3 | 26.4 | 62.01 | -721.9 | -115.7 | 1,562.1 | 1,523.5 | 38.65 | 40.413 | |
| 5,500.0 | 5,202.9 | 5,300.0 | 5,058.7 | 25.2 | 26.3 | 63.85 | -721.8 | -107.7 | 1,533.6 | 1,495.0 | 38.58 | 39.746 | |
| 5,550.0 | 5,222.1 | 5,300.0 | 5,058.7 | 25.0 | 26.3 | 66.37 | -721.8 | -107.7 | 1,504.3 | 1,465.6 | 38.73 | 38.842 | |
| 5,600.0 | 5,237.6 | 5,281.7 | 5,047.1 | 24.9 | 26.3 | 68.30 | -721.5 | -93.5 | 1,474.4 | 1,435.7 | 38.64 | 38.160 | |
| 5,650.0 | 5,249.4 | 5,269.3 | 5,039.0 | 24.8 | 26.2 | 70.70 | -721.4 | -84.1 | 1,443.9 | 1,405.2 | 38.69 | 37.317 | |
| 5,700.0 | 5,257.3 | 5,255.5 | 5,030.0 | 24.8 | 26.2 | 73.22 | -721.3 | -73.8 | 1,413.0 | 1,374.2 | 38.79 | 36.432 | |
| 5,750.0 | 5,261.4 | 5,236.0 | 5,016.9 | 24.8 | 26.2 | 75.67 | -721.1 | -59.3 | 1,381.8 | 1,342.9 | 38.83 | 35.583 | |
| 5,777.3 | 5,262.0 | 5,236.0 | 5,016.9 | 24.8 | 26.2 | 77.53 | -721.1 | -59.3 | 1,364.6 | 1,325.5 | 39.09 | 34.908 | |
| 5,800.0 | 5,262.0 | 5,236.0 | 5,016.9 | 24.8 | 26.2 | 77.53 | -721.1 | -59.3 | 1,350.4 | 1,311.1 | 39.32 | 34.343 | |
| 5,900.0 | 5,262.0 | 5,198.9 | 4,991.2 | 25.2 | 26.1 | 75.92 | -721.1 | -32.6 | 1,290.1 | 1,250.3 | 39.75 | 32.454 | |
| 6,000.0 | 5,262.0 | 5,173.0 | 4,972.5 | 25.8 | 26.0 | 74.74 | -721.2 | -14.6 | 1,233.9 | 1,193.3 | 40.60 | 30.394 | |
| 6,100.0 | 5,262.0 | 5,173.0 | 4,972.5 | 26.7 | 26.0 | 74.74 | -721.2 | -14.6 | 1,183.0 | 1,140.7 | 42.29 | 27.972 | |
| 6,200.0 | 5,262.0 | 5,139.1 | 4,946.9 | 27.8 | 25.9 | 73.13 | -722.0 | 7.7 | 1,137.3 | 1,093.9 | 43.43 | 26.189 | |
| 6,300.0 | 5,262.0 | 5,110.0 | 4,923.7 | 29.1 | 25.9 | 71.70 | -723.1 | 25.2 | 1,098.7 | 1,053.9 | 44.87 | 24.486 | |
| 6,400.0 | 5,262.0 | 5,110.0 | 4,923.7 | 30.6 | 25.9 | 71.70 | -723.1 | 25.2 | 1,067.1 | 1,019.8 | 47.29 | 22.563 | |
| 6,500.0 | 5,262.0 | 5,085.5 | 4,903.5 | 32.2 | 25.8 | 70.46 | -724.3 | 39.0 | 1,043.6 | 994.4 | 49.16 | 21.229 | |
| 6,600.0 | 5,262.0 | 5,066.4 | 4,887.3 | 33.8 | 25.8 | 69.47 | -725.0 | 49.1 | 1,028.5 | 977.3 | 51.21 | 20.082 | |
| 6,700.0 | 5,262.0 | 5,047.0 | 4,870.6 | 35.6 | 25.7 | 68.45 | -725.7 | 58.9 | 1,022.3 | 969.1 | 53.21 | 19.213 | |
| 6,716.8 | 5,262.0 | 5,047.0 | 4,870.6 | 35.9 | 25.7 | 68.45 | -725.7 | 58.9 | 1,022.2 | 968.6 | 53.63 | 19.060 | CC, ES |
| 6,800.0 | 5,262.0 | 5,030.6 | 4,856.3 | 37.5 | 25.7 | 67.59 | -726.1 | 66.7 | 1,025.3 | 970.2 | 55.11 | 18.606 | |
| 6,900.0 | 5,262.0 | 5,013.9 | 4,841.4 | 39.4 | 25.6 | 66.70 | -726.4 | 74.4 | 1,037.4 | 980.6 | 56.80 | 18.265 | SF |
| 7,000.0 | 5,262.0 | 4,984.0 | 4,814.4 | 41.4 | 25.6 | 65.10 | -726.5 | 87.3 | 1,058.7 | 1,000.8 | 57.91 | 18.282 | |
| 7,100.0 | 5,262.0 | 4,984.0 | 4,814.4 | 43.4 | 25.6 | 65.10 | -726.5 | 87.3 | 1,087.9 | 1,028.5 | 59.43 | 18.306 | |
| 7,200.0 | 5,262.0 | 4,984.0 | 4,814.4 | 45.4 | 25.6 | 65.10 | -726.5 | 87.3 | 1,125.3 | 1,064.7 | 60.59 | 18.572 | |
| 7,300.0 | 5,262.0 | 4,984.0 | 4,814.4 | 47.5 | 25.6 | 65.10 | -726.5 | 87.3 | 1,170.1 | 1,108.6 | 61.43 | 19.048 | |
| 7,400.0 | 5,262.0 | 4,960.8 | 4,793.1 | 49.7 | 25.5 | 63.87 | -726.3 | 96.4 | 1,220.7 | 1,159.1 | 61.58 | 19.823 | |
| 7,500.0 | 5,262.0 | 4,953.7 | 4,786.4 | 51.8 | 25.5 | 63.48 | -726.2 | 99.0 | 1,277.3 | 1,215.5 | 61.82 | 20.663 | |
| 7,600.0 | 5,262.0 | 4,947.0 | 4,780.1 | 54.0 | 25.5 | 63.13 | -726.1 | 101.3 | 1,338.9 | 1,277.0 | 61.89 | 21.634 | |
| 7,700.0 | 5,262.0 | 4,921.0 | 4,755.6 | 56.2 | 25.5 | 61.75 | -725.9 | 109.8 | 1,405.3 | 1,343.7 | 61.57 | 22.823 | |
| 7,800.0 | 5,262.0 | 4,921.0 | 4,755.6 | 58.4 | 25.5 | 61.75 | -725.9 | 109.8 | 1,474.7 | 1,413.1 | 61.53 | 23.967 | |
| 7,900.0 | 5,262.0 | 4,921.0 | 4,755.6 | 60.7 | 25.5 | 61.75 | -725.9 | 109.8 | 1,547.4 | 1,486.0 | 61.39 | 25.205 | |
| 8,000.0 | 5,262.0 | 4,921.0 | 4,755.6 | 62.9 | 25.5 | 61.75 | -725.9 | 109.8 | 1,623.1 | 1,561.9 | 61.20 | 26.522 | |
| 8,100.0 | 5,262.0 | 4,921.0 | 4,755.6 | 65.2 | 25.5 | 61.75 | -725.9 | 109.8 | 1,701.2 | 1,640.3 | 60.96 | 27.909 | |
| 8,200.0 | 5,262.0 | 4,921.0 | 4,755.6 | 67.5 | 25.5 | 61.75 | -725.9 | 109.8 | 1,781.6 | 1,720.9 | 60.69 | 29.357 | |
| 8,300.0 | 5,262.0 | 4,921.0 | 4,755.6 | 69.8 | 25.5 | 61.75 | -725.9 | 109.8 | 1,863.9 | 1,803.5 | 60.40 | 30.858 | |
| 8,400.0 | 5,262.0 | 4,921.0 | 4,755.6 | 72.1 | 25.5 | 61.75 | -725.9 | 109.8 | 1,947.8 | 1,887.7 | 60.10 | 32.406 | |
| 8,500.0 | 5,262.0 | 4,921.0 | 4,755.6 | 74.4 | 25.5 | 61.75 | -725.9 | 109.8 | 2,033.1 | 1,973.3 | 59.81 | 33.996 | |

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

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | DJR Operating | **Local Co-ordinate Reference:** | Well # 108H |
| **Project:** | Betonnie Tsosie Unit | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Reference Site:** | M11 2308 Pad | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Original drilling | **Database:** | EDM |
| **Reference Design:** | APD | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Chaco 2308-14E (Enduring) - 151H - Original drilling - Pathfinder — **Offset Site Error:** 0.0 usft

**Survey Program:** 451-MWD+IGRF — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8,600.0 | 5,262.0 | 4,921.0 | 4,755.6 | 76.7 | 25.5 | 61.75 | -725.9 | 109.8 | 2,119.8 | 2,060.3 | 59.51 | 35.621 | |
| 8,700.0 | 5,262.0 | 4,894.8 | 4,730.5 | 79.0 | 25.4 | 60.39 | -725.6 | 117.1 | 2,206.9 | 2,147.8 | 59.08 | 37.357 | |
| 8,800.0 | 5,262.0 | 4,891.4 | 4,727.2 | 81.3 | 25.4 | 60.21 | -725.6 | 118.0 | 2,295.4 | 2,236.7 | 58.79 | 39.048 | |
| 8,900.0 | 5,262.0 | 4,888.1 | 4,724.0 | 83.7 | 25.4 | 60.04 | -725.6 | 118.8 | 2,384.9 | 2,326.4 | 58.51 | 40.764 | |
| 9,000.0 | 5,262.0 | 4,885.0 | 4,720.9 | 86.0 | 25.4 | 59.88 | -725.6 | 119.6 | 2,475.2 | 2,416.9 | 58.24 | 42.501 | |
| 9,100.0 | 5,262.0 | 4,857.0 | 4,693.6 | 88.4 | 25.3 | 58.48 | -725.4 | 125.5 | 2,566.8 | 2,508.9 | 57.90 | 44.328 | |
| 9,200.0 | 5,262.0 | 4,857.0 | 4,693.6 | 90.7 | 25.3 | 58.48 | -725.4 | 125.5 | 2,658.2 | 2,600.5 | 57.68 | 46.089 | |
| 9,300.0 | 5,262.0 | 4,857.0 | 4,693.6 | 93.1 | 25.3 | 58.48 | -725.4 | 125.5 | 2,750.3 | 2,692.8 | 57.46 | 47.866 | |
| 9,400.0 | 5,262.0 | 4,857.0 | 4,693.6 | 95.5 | 25.3 | 58.48 | -725.4 | 125.5 | 2,842.8 | 2,785.6 | 57.25 | 49.658 | |
| 9,500.0 | 5,262.0 | 4,857.0 | 4,693.6 | 97.8 | 25.3 | 58.48 | -725.4 | 125.5 | 2,935.9 | 2,878.9 | 57.05 | 51.464 | |
| 9,600.0 | 5,262.0 | 4,857.0 | 4,693.6 | 100.2 | 25.3 | 58.48 | -725.4 | 125.5 | 3,029.4 | 2,972.6 | 56.86 | 53.281 | |
| 9,700.0 | 5,262.0 | 4,857.0 | 4,693.6 | 102.6 | 25.3 | 58.48 | -725.4 | 125.5 | 3,123.4 | 3,066.7 | 56.68 | 55.110 | |
| 9,800.0 | 5,262.0 | 4,857.0 | 4,693.6 | 105.0 | 25.3 | 58.48 | -725.4 | 125.5 | 3,217.6 | 3,161.1 | 56.50 | 56.947 | |
| 9,900.0 | 5,262.0 | 4,857.0 | 4,693.6 | 107.3 | 25.3 | 58.48 | -725.4 | 125.5 | 3,312.3 | 3,255.9 | 56.34 | 58.794 | |
| 10,000.0 | 5,262.0 | 4,857.0 | 4,693.6 | 109.7 | 25.3 | 58.48 | -725.4 | 125.5 | 3,407.2 | 3,351.0 | 56.18 | 60.648 | |
| 10,100.0 | 5,262.0 | 4,857.0 | 4,693.6 | 112.1 | 25.3 | 58.48 | -725.4 | 125.5 | 3,502.4 | 3,446.4 | 56.03 | 62.508 | |
| 10,200.0 | 5,262.0 | 4,857.0 | 4,693.6 | 114.5 | 25.3 | 58.48 | -725.4 | 125.5 | 3,597.9 | 3,542.0 | 55.89 | 64.375 | |
| 10,300.0 | 5,262.0 | 4,857.0 | 4,693.6 | 116.9 | 25.3 | 58.48 | -725.4 | 125.5 | 3,693.6 | 3,637.8 | 55.75 | 66.247 | |
| 10,400.0 | 5,262.0 | 4,857.0 | 4,693.6 | 119.3 | 25.3 | 58.48 | -725.4 | 125.5 | 3,789.5 | 3,733.9 | 55.63 | 68.123 | |
| 10,500.0 | 5,262.0 | 4,857.0 | 4,693.6 | 121.7 | 25.3 | 58.48 | -725.4 | 125.5 | 3,885.6 | 3,830.1 | 55.51 | 70.003 | |
| 10,600.0 | 5,262.0 | 4,857.0 | 4,693.6 | 124.1 | 25.3 | 58.48 | -725.4 | 125.5 | 3,981.9 | 3,926.6 | 55.39 | 71.887 | |
| 10,700.0 | 5,262.0 | 4,857.0 | 4,693.6 | 126.5 | 25.3 | 58.48 | -725.4 | 125.5 | 4,078.4 | 4,023.2 | 55.28 | 73.774 | |
| 10,800.0 | 5,262.0 | 4,857.0 | 4,693.6 | 128.9 | 25.3 | 58.48 | -725.4 | 125.5 | 4,175.1 | 4,119.9 | 55.18 | 75.663 | |
| 10,900.0 | 5,262.0 | 4,857.0 | 4,693.6 | 131.3 | 25.3 | 58.48 | -725.4 | 125.5 | 4,271.9 | 4,216.9 | 55.08 | 77.554 | |
| 11,000.0 | 5,262.0 | 4,832.4 | 4,669.4 | 133.7 | 25.3 | 57.28 | -725.5 | 129.8 | 4,368.6 | 4,313.6 | 54.97 | 79.474 | |
| 11,100.0 | 5,262.0 | 4,829.9 | 4,666.9 | 136.1 | 25.3 | 57.16 | -725.5 | 130.2 | 4,465.6 | 4,410.8 | 54.88 | 81.368 | |
| 11,200.0 | 5,262.0 | 4,827.4 | 4,664.5 | 138.5 | 25.3 | 57.04 | -725.5 | 130.6 | 4,562.8 | 4,508.0 | 54.80 | 83.262 | |
| 11,300.0 | 5,262.0 | 4,825.0 | 4,662.1 | 140.9 | 25.3 | 56.93 | -725.5 | 131.0 | 4,660.1 | 4,605.3 | 54.72 | 85.157 | |
| 11,400.0 | 5,262.0 | 4,822.7 | 4,659.8 | 143.4 | 25.3 | 56.82 | -725.6 | 131.3 | 4,757.5 | 4,702.8 | 54.65 | 87.051 | |
| 11,500.0 | 5,262.0 | 4,820.4 | 4,657.5 | 145.8 | 25.3 | 56.71 | -725.6 | 131.6 | 4,854.9 | 4,800.3 | 54.58 | 88.945 | |
| 11,600.0 | 5,262.0 | 4,794.0 | 4,631.4 | 148.2 | 25.2 | 55.49 | -725.9 | 135.1 | 4,952.8 | 4,898.3 | 54.53 | 90.835 | |
| 11,700.0 | 5,262.0 | 4,794.0 | 4,631.4 | 150.6 | 25.2 | 55.49 | -725.9 | 135.1 | 5,050.4 | 4,995.9 | 54.47 | 92.725 | |
| 11,800.0 | 5,262.0 | 4,794.0 | 4,631.4 | 153.0 | 25.2 | 55.49 | -725.9 | 135.1 | 5,148.1 | 5,093.7 | 54.41 | 94.614 | |
| 11,900.0 | 5,262.0 | 4,794.0 | 4,631.4 | 155.4 | 25.2 | 55.49 | -725.9 | 135.1 | 5,245.9 | 5,191.5 | 54.36 | 96.502 | |
| 12,000.0 | 5,262.0 | 4,794.0 | 4,631.4 | 157.9 | 25.2 | 55.49 | -725.9 | 135.1 | 5,343.8 | 5,289.5 | 54.31 | 98.390 | |
| 12,100.0 | 5,262.0 | 4,794.0 | 4,631.4 | 160.3 | 25.2 | 55.49 | -725.9 | 135.1 | 5,441.7 | 5,387.5 | 54.27 | 100.276 | |
| 12,200.0 | 5,262.0 | 4,794.0 | 4,631.4 | 162.7 | 25.2 | 55.49 | -725.9 | 135.1 | 5,539.8 | 5,485.5 | 54.23 | 102.160 | |
| 12,300.0 | 5,262.0 | 4,794.0 | 4,631.4 | 165.1 | 25.2 | 55.49 | -725.9 | 135.1 | 5,637.9 | 5,583.7 | 54.19 | 104.043 | |
| 12,400.0 | 5,262.0 | 4,794.0 | 4,631.4 | 167.5 | 25.2 | 55.49 | -725.9 | 135.1 | 5,736.0 | 5,681.9 | 54.15 | 105.923 | |
| 12,500.0 | 5,262.0 | 4,794.0 | 4,631.4 | 170.0 | 25.2 | 55.49 | -725.9 | 135.1 | 5,834.3 | 5,780.1 | 54.12 | 107.802 | |
| 12,600.0 | 5,262.0 | 4,794.0 | 4,631.4 | 172.4 | 25.2 | 55.49 | -725.9 | 135.1 | 5,932.5 | 5,878.5 | 54.09 | 109.678 | |
| 12,700.0 | 5,262.0 | 4,794.0 | 4,631.4 | 174.8 | 25.2 | 55.49 | -725.9 | 135.1 | 6,030.9 | 5,976.8 | 54.06 | 111.553 | |
| 12,800.0 | 5,262.0 | 4,794.0 | 4,631.4 | 177.2 | 25.2 | 55.49 | -725.9 | 135.1 | 6,129.3 | 6,075.2 | 54.04 | 113.424 | |
| 12,900.0 | 5,262.0 | 4,794.0 | 4,631.4 | 179.7 | 25.2 | 55.49 | -725.9 | 135.1 | 6,227.7 | 6,173.7 | 54.02 | 115.293 | |
| 13,000.0 | 5,262.0 | 4,794.0 | 4,631.4 | 182.1 | 25.2 | 55.49 | -725.9 | 135.1 | 6,326.2 | 6,272.2 | 54.00 | 117.159 | |
| 13,100.0 | 5,262.0 | 4,794.0 | 4,631.4 | 184.5 | 25.2 | 55.49 | -725.9 | 135.1 | 6,424.8 | 6,370.8 | 53.98 | 119.022 | |
| 13,200.0 | 5,262.0 | 4,794.0 | 4,631.4 | 186.9 | 25.2 | 55.49 | -725.9 | 135.1 | 6,523.4 | 6,469.4 | 53.96 | 120.881 | |
| 13,300.0 | 5,262.0 | 4,794.0 | 4,631.4 | 189.4 | 25.2 | 55.49 | -725.9 | 135.1 | 6,622.0 | 6,568.0 | 53.95 | 122.738 | |
| 13,400.0 | 5,262.0 | 4,794.0 | 4,631.4 | 191.8 | 25.2 | 55.49 | -725.9 | 135.1 | 6,720.7 | 6,666.7 | 53.94 | 124.591 | |
| 13,500.0 | 5,262.0 | 4,794.0 | 4,631.4 | 194.2 | 25.2 | 55.49 | -725.9 | 135.1 | 6,819.4 | 6,765.4 | 53.93 | 126.441 | |
| 13,600.0 | 5,262.0 | 4,794.0 | 4,631.4 | 196.7 | 25.2 | 55.49 | -725.9 | 135.1 | 6,918.1 | 6,864.2 | 53.93 | 128.288 | |
| 13,700.0 | 5,262.0 | 4,794.0 | 4,631.4 | 199.1 | 25.2 | 55.49 | -725.9 | 135.1 | 7,016.9 | 6,963.0 | 53.92 | 130.130 | |

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

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | DJR Operating | **Local Co-ordinate Reference:** | Well # 108H |
| **Project:** | Betonnie Tsosie Unit | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Reference Site:** | M11 2308 Pad | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Original drilling | **Database:** | EDM |
| **Reference Design:** | APD | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Chaco 2308-14E (Enduring) - 151H - Original drilling - Pathfinder — **Offset Site Error:** 0.0 usft

**Survey Program:** 451-MWD+IGRF — **Offset Well Error:** 0.0 usft

| Reference | | Offset | | Semi Major Axis | | | Offset Wellbore Centre | | Distance | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Measured Depth (usft) | Vertical Depth (usft) | Measured Depth (usft) | Vertical Depth (usft) | Reference (usft) | Offset (usft) | Highside Toolface (°) | +N/-S (usft) | +E/-W (usft) | Between Centres (usft) | Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
| 13,715.1 | 5,262.0 | 4,794.0 | 4,631.4 | 199.5 | 25.2 | 55.49 | -725.9 | 135.1 | 7,031.8 | 6,977.9 | 53.92 | 130.409 | |

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | DJR Operating | **Local Co-ordinate Reference:** | Well # 108H |
| **Project:** | Betonnie Tsosie Unit | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Reference Site:** | M11 2308 Pad | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Original drilling | **Database:** | EDM |
| **Reference Design:** | APD | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Chaco 2308-14E (Enduring) - 152H - Original drilling - Pathfinder — **Offset Site Error:** 0.0 usft

**Survey Program:** 433-MWD+IGRF — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 177.50 | -1,783.7 | 77.9 | 1,785.5 | | | | |
| 100.0 | 100.0 | 87.8 | 87.8 | 0.2 | 0.2 | 177.50 | -1,783.6 | 77.8 | 1,785.3 | 1,785.0 | 0.31 | 5,820.931 | |
| 200.0 | 200.0 | 192.4 | 192.4 | 0.5 | 0.3 | 177.51 | -1,783.3 | 77.6 | 1,785.0 | 1,784.1 | 0.85 | 2,108.200 | |
| 300.0 | 300.0 | 296.9 | 296.9 | 0.9 | 0.5 | 177.52 | -1,782.7 | 77.3 | 1,784.4 | 1,783.0 | 1.39 | 1,286.850 | |
| 400.0 | 400.0 | 401.5 | 401.5 | 1.2 | 0.7 | 177.53 | -1,781.8 | 76.8 | 1,783.5 | 1,781.6 | 1.93 | 925.763 | |
| 450.0 | 450.0 | 452.0 | 452.0 | 1.4 | 0.8 | 177.54 | -1,781.3 | 76.6 | 1,783.0 | 1,780.8 | 2.23 | 800.057 | |
| 473.5 | 473.5 | 475.1 | 475.1 | 1.5 | 0.9 | -164.48 | -1,781.0 | 76.4 | 1,782.9 | 1,780.5 | 2.40 | 744.197 | CC |
| 500.0 | 500.0 | 499.5 | 499.5 | 1.6 | 1.0 | -164.48 | -1,780.8 | 76.2 | 1,783.0 | 1,780.5 | 2.58 | 691.723 | ES |
| 600.0 | 599.9 | 550.0 | 550.0 | 1.9 | 1.2 | -164.45 | -1,780.9 | 75.7 | 1,787.6 | 1,784.4 | 3.12 | 573.164 | |
| 700.0 | 699.5 | 579.0 | 579.0 | 2.3 | 1.3 | -164.38 | -1,781.8 | 75.5 | 1,799.6 | 1,796.0 | 3.59 | 500.909 | |
| 800.0 | 798.6 | 642.0 | 641.8 | 2.7 | 1.5 | -164.30 | -1,785.6 | 75.1 | 1,818.4 | 1,814.2 | 4.17 | 435.674 | |
| 900.0 | 897.1 | 705.0 | 704.6 | 3.1 | 1.7 | -164.22 | -1,791.5 | 75.3 | 1,844.0 | 1,839.2 | 4.76 | 387.528 | |
| 1,000.0 | 994.7 | 768.0 | 767.2 | 3.6 | 1.9 | -164.12 | -1,798.5 | 75.7 | 1,875.4 | 1,870.1 | 5.35 | 350.859 | |
| 1,090.4 | 1,082.1 | 843.6 | 842.2 | 4.0 | 2.2 | -164.07 | -1,807.2 | 76.7 | 1,907.8 | 1,901.9 | 5.95 | 320.791 | |
| 1,100.0 | 1,091.3 | 849.8 | 848.4 | 4.1 | 2.2 | -164.09 | -1,807.9 | 76.8 | 1,911.4 | 1,905.4 | 6.01 | 317.943 | |
| 1,200.0 | 1,187.4 | 909.6 | 907.7 | 4.6 | 2.5 | -164.25 | -1,815.4 | 77.7 | 1,950.0 | 1,943.5 | 6.57 | 296.670 | |
| 1,300.0 | 1,283.6 | 957.0 | 954.6 | 5.2 | 2.7 | -164.37 | -1,822.3 | 78.4 | 1,990.5 | 1,983.4 | 7.09 | 280.898 | |
| 1,400.0 | 1,379.7 | 1,020.0 | 1,016.8 | 5.8 | 2.9 | -164.52 | -1,832.8 | 79.1 | 2,032.8 | 2,025.1 | 7.66 | 265.335 | |
| 1,500.0 | 1,475.8 | 1,063.1 | 1,059.1 | 6.4 | 3.1 | -164.61 | -1,840.8 | 79.3 | 2,076.7 | 2,068.6 | 8.15 | 254.757 | |
| 1,600.0 | 1,571.9 | 1,133.9 | 1,128.4 | 7.0 | 3.5 | -164.74 | -1,854.9 | 79.0 | 2,122.1 | 2,113.3 | 8.76 | 242.252 | |
| 1,700.0 | 1,668.1 | 1,205.0 | 1,198.1 | 7.6 | 3.8 | -164.85 | -1,869.5 | 78.6 | 2,167.9 | 2,158.6 | 9.37 | 231.327 | |
| 1,800.0 | 1,764.2 | 1,275.6 | 1,267.1 | 8.2 | 4.2 | -164.96 | -1,884.5 | 78.4 | 2,214.5 | 2,204.5 | 9.98 | 221.843 | |
| 1,900.0 | 1,860.3 | 1,342.8 | 1,332.6 | 8.8 | 4.5 | -165.09 | -1,899.5 | 79.0 | 2,262.1 | 2,251.5 | 10.58 | 213.867 | |
| 2,000.0 | 1,956.4 | 1,451.7 | 1,438.7 | 9.4 | 5.1 | -165.32 | -1,923.7 | 81.1 | 2,309.7 | 2,298.3 | 11.38 | 203.044 | |
| 2,100.0 | 2,052.5 | 1,509.0 | 1,494.5 | 10.0 | 5.4 | -165.44 | -1,936.5 | 82.6 | 2,357.5 | 2,345.5 | 11.92 | 197.747 | |
| 2,200.0 | 2,148.7 | 1,545.6 | 1,530.0 | 10.6 | 5.6 | -165.52 | -1,945.3 | 83.6 | 2,406.7 | 2,394.3 | 12.36 | 194.733 | |
| 2,300.0 | 2,244.8 | 1,598.6 | 1,581.3 | 11.2 | 5.9 | -165.63 | -1,959.0 | 85.0 | 2,457.5 | 2,444.7 | 12.88 | 190.860 | |
| 2,400.0 | 2,340.9 | 1,676.7 | 1,656.5 | 11.9 | 6.4 | -165.74 | -1,979.7 | 85.5 | 2,509.0 | 2,495.4 | 13.53 | 185.463 | |
| 2,500.0 | 2,437.0 | 1,800.7 | 1,776.2 | 12.5 | 7.1 | -165.89 | -2,012.1 | 85.5 | 2,560.0 | 2,545.6 | 14.43 | 177.362 | |
| 2,600.0 | 2,533.1 | 1,895.4 | 1,867.9 | 13.1 | 7.6 | -166.02 | -2,035.7 | 86.3 | 2,609.9 | 2,594.8 | 15.18 | 171.926 | |
| 2,700.0 | 2,629.3 | 1,937.0 | 1,908.2 | 13.7 | 7.9 | -166.08 | -2,046.1 | 87.0 | 2,660.5 | 2,644.8 | 15.63 | 170.172 | |
| 2,800.0 | 2,725.4 | 1,999.0 | 1,967.9 | 14.3 | 8.2 | -166.18 | -2,062.8 | 88.3 | 2,712.3 | 2,696.1 | 16.20 | 167.441 | |
| 2,900.0 | 2,821.5 | 2,067.8 | 2,033.9 | 15.0 | 8.7 | -166.29 | -2,082.0 | 89.9 | 2,765.0 | 2,748.2 | 16.80 | 164.571 | |
| 3,000.0 | 2,917.6 | 2,139.1 | 2,102.4 | 15.6 | 9.1 | -166.38 | -2,102.1 | 90.9 | 2,818.0 | 2,800.5 | 17.42 | 161.762 | |
| 3,100.0 | 3,013.7 | 2,233.4 | 2,192.7 | 16.2 | 9.7 | -166.46 | -2,128.9 | 90.6 | 2,871.0 | 2,852.8 | 18.18 | 157.939 | |
| 3,200.0 | 3,109.9 | 2,378.3 | 2,332.3 | 16.8 | 10.6 | -166.58 | -2,167.8 | 90.2 | 2,922.5 | 2,903.3 | 19.23 | 151.946 | |
| 3,300.0 | 3,206.0 | 2,462.0 | 2,413.1 | 17.5 | 11.1 | -166.65 | -2,189.7 | 90.0 | 2,973.5 | 2,953.6 | 19.93 | 149.201 | |
| 3,400.0 | 3,302.1 | 2,544.2 | 2,492.4 | 18.1 | 11.6 | -166.71 | -2,211.4 | 89.9 | 3,024.8 | 3,004.2 | 20.62 | 146.711 | |
| 3,500.0 | 3,398.2 | 2,703.2 | 2,646.3 | 18.7 | 12.6 | -166.84 | -2,251.6 | 89.6 | 3,075.1 | 3,053.3 | 21.76 | 141.351 | |
| 3,600.0 | 3,494.3 | 2,778.0 | 2,718.8 | 19.3 | 13.0 | -166.90 | -2,269.6 | 89.6 | 3,124.4 | 3,102.0 | 22.40 | 139.489 | |
| 3,700.0 | 3,590.5 | 2,841.0 | 2,779.8 | 20.0 | 13.4 | -166.94 | -2,285.3 | 89.3 | 3,174.3 | 3,151.4 | 22.97 | 138.167 | |
| 3,800.0 | 3,686.6 | 2,950.9 | 2,886.3 | 20.6 | 14.0 | -167.02 | -2,312.7 | 89.1 | 3,224.3 | 3,200.5 | 23.83 | 135.321 | |
| 3,900.0 | 3,782.7 | 3,017.2 | 2,950.5 | 21.2 | 14.4 | -167.07 | -2,329.0 | 89.3 | 3,274.1 | 3,249.7 | 24.42 | 134.070 | |
| 4,000.0 | 3,878.8 | 3,083.5 | 3,014.6 | 21.8 | 14.8 | -167.13 | -2,345.8 | 90.0 | 3,324.5 | 3,299.5 | 25.01 | 132.913 | |
| 4,100.0 | 3,975.0 | 3,137.6 | 3,066.9 | 22.5 | 15.1 | -167.18 | -2,359.8 | 90.7 | 3,375.6 | 3,350.0 | 25.53 | 132.218 | |
| 4,200.0 | 4,071.1 | 3,231.2 | 3,157.2 | 23.1 | 15.7 | -167.28 | -2,384.6 | 92.6 | 3,427.1 | 3,400.8 | 26.29 | 130.372 | |
| 4,300.0 | 4,167.2 | 3,313.3 | 3,236.4 | 23.7 | 16.2 | -167.37 | -2,405.9 | 94.8 | 3,478.4 | 3,451.4 | 26.97 | 128.960 | |
| 4,400.0 | 4,263.3 | 3,386.9 | 3,307.3 | 24.3 | 16.7 | -167.45 | -2,425.4 | 96.6 | 3,530.0 | 3,502.3 | 27.61 | 127.869 | |
| 4,500.0 | 4,359.4 | 3,483.3 | 3,400.4 | 25.0 | 17.3 | -167.56 | -2,450.8 | 99.2 | 3,581.5 | 3,553.1 | 28.38 | 126.195 | |
| 4,600.0 | 4,455.6 | 3,553.3 | 3,467.8 | 25.6 | 17.7 | -167.63 | -2,469.3 | 101.5 | 3,633.2 | 3,604.2 | 28.99 | 125.319 | |
| 4,614.6 | 4,469.6 | 3,568.3 | 3,482.3 | 25.7 | 17.8 | -167.65 | -2,473.3 | 101.9 | 3,640.7 | 3,611.6 | 29.11 | 125.067 | |
| 4,650.0 | 4,503.8 | 3,651.6 | 3,562.6 | 25.9 | 18.3 | -174.37 | -2,494.9 | 104.5 | 3,658.3 | 3,628.6 | 29.68 | 123.256 | |

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

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | DJR Operating | **Local Co-ordinate Reference:** | Well # 108H |
| **Project:** | Betonnie Tsosie Unit | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Reference Site:** | M11 2308 Pad | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Original drilling | **Database:** | EDM |
| **Reference Design:** | APD | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Chaco 2308-14E (Enduring) - 152H - Original drilling - Pathfinder — **Offset Site Error:** 0.0 usft

**Survey Program:** 433-MWD+IGRF — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,700.0 | 4,552.9 | 4,596.9 | 4,495.8 | 26.2 | 22.4 | 171.51 | -2,622.0 | 109.2 | 3,676.1 | 3,641.7 | 34.42 | 106.797 | |
| 4,750.0 | 4,602.4 | 4,632.5 | 4,531.4 | 26.3 | 22.5 | 145.11 | -2,622.6 | 108.0 | 3,683.4 | 3,648.7 | 34.70 | 106.147 | |
| 4,800.0 | 4,652.0 | 4,672.0 | 4,570.7 | 26.5 | 22.6 | 107.19 | -2,623.7 | 104.1 | 3,687.6 | 3,652.6 | 34.98 | 105.423 | |
| 4,850.0 | 4,701.5 | 4,699.2 | 4,597.5 | 26.6 | 22.7 | 79.67 | -2,624.8 | 100.0 | 3,688.8 | 3,653.6 | 35.20 | 104.803 | |
| 4,900.0 | 4,750.6 | 4,735.0 | 4,632.5 | 26.6 | 22.8 | 65.70 | -2,626.6 | 92.7 | 3,687.1 | 3,651.7 | 35.43 | 104.060 | |
| 4,950.0 | 4,799.0 | 4,735.0 | 4,632.5 | 26.6 | 22.8 | 58.19 | -2,626.6 | 92.7 | 3,682.6 | 3,647.1 | 35.51 | 103.715 | |
| 5,000.0 | 4,846.2 | 4,762.3 | 4,658.9 | 26.6 | 22.9 | 54.12 | -2,628.3 | 86.1 | 3,675.3 | 3,639.6 | 35.69 | 102.990 | |
| 5,050.0 | 4,892.2 | 4,777.6 | 4,673.7 | 26.5 | 22.9 | 51.73 | -2,629.5 | 82.1 | 3,665.4 | 3,629.6 | 35.80 | 102.396 | |
| 5,100.0 | 4,936.5 | 4,799.0 | 4,694.2 | 26.5 | 23.0 | 50.50 | -2,631.3 | 76.3 | 3,652.9 | 3,617.0 | 35.92 | 101.692 | |
| 5,150.0 | 4,979.0 | 4,799.0 | 4,694.2 | 26.3 | 23.0 | 49.80 | -2,631.3 | 76.3 | 3,637.8 | 3,601.9 | 35.94 | 101.206 | |
| 5,200.0 | 5,019.3 | 4,799.0 | 4,694.2 | 26.2 | 23.0 | 49.66 | -2,631.3 | 76.3 | 3,620.5 | 3,584.5 | 35.96 | 100.673 | |
| 5,250.0 | 5,057.1 | 4,823.9 | 4,717.8 | 26.0 | 23.1 | 50.30 | -2,633.7 | 69.0 | 3,600.6 | 3,564.5 | 36.10 | 99.749 | |
| 5,300.0 | 5,092.4 | 4,832.3 | 4,725.8 | 25.9 | 23.1 | 51.15 | -2,634.6 | 66.4 | 3,578.7 | 3,542.5 | 36.16 | 98.966 | |
| 5,350.0 | 5,124.8 | 4,839.6 | 4,732.7 | 25.7 | 23.1 | 52.38 | -2,635.5 | 64.1 | 3,554.6 | 3,518.4 | 36.23 | 98.112 | |
| 5,400.0 | 5,154.1 | 4,862.0 | 4,753.6 | 25.5 | 23.2 | 54.24 | -2,638.3 | 56.7 | 3,528.7 | 3,492.3 | 36.39 | 96.963 | |
| 5,450.0 | 5,180.2 | 4,862.0 | 4,753.6 | 25.3 | 23.2 | 56.10 | -2,638.3 | 56.7 | 3,500.8 | 3,464.4 | 36.46 | 96.020 | |
| 5,500.0 | 5,202.9 | 4,862.0 | 4,753.6 | 25.2 | 23.2 | 58.33 | -2,638.3 | 56.7 | 3,471.3 | 3,434.8 | 36.55 | 94.974 | |
| 5,550.0 | 5,222.1 | 4,862.0 | 4,753.6 | 25.0 | 23.2 | 60.93 | -2,638.3 | 56.7 | 3,440.3 | 3,403.6 | 36.67 | 93.819 | |
| 5,600.0 | 5,237.6 | 4,893.5 | 4,782.4 | 24.9 | 23.3 | 64.61 | -2,642.1 | 44.4 | 3,407.7 | 3,370.7 | 36.99 | 92.130 | |
| 5,650.0 | 5,249.4 | 4,932.6 | 4,817.9 | 24.8 | 23.5 | 68.91 | -2,646.7 | 28.8 | 3,374.2 | 3,336.9 | 37.38 | 90.261 | |
| 5,700.0 | 5,257.3 | 4,896.7 | 4,785.6 | 24.8 | 23.3 | 71.85 | -2,642.6 | 43.9 | 3,339.7 | 3,302.3 | 37.42 | 89.258 | |
| 5,750.0 | 5,261.4 | 4,862.0 | 4,753.6 | 24.8 | 23.2 | 75.11 | -2,638.3 | 56.7 | 3,304.3 | 3,266.8 | 37.49 | 88.148 | |
| 5,777.3 | 5,262.0 | 4,862.0 | 4,753.6 | 24.8 | 23.2 | 77.49 | -2,638.3 | 56.7 | 3,284.6 | 3,247.0 | 37.64 | 87.259 | |
| 5,800.0 | 5,262.0 | 4,862.0 | 4,753.6 | 24.8 | 23.2 | 77.49 | -2,638.3 | 56.7 | 3,268.3 | 3,230.5 | 37.78 | 86.510 | |
| 5,900.0 | 5,262.0 | 4,862.0 | 4,753.6 | 25.2 | 23.2 | 77.49 | -2,638.3 | 56.7 | 3,197.2 | 3,158.7 | 38.48 | 83.097 | |
| 6,000.0 | 5,262.0 | 4,862.0 | 4,753.6 | 25.8 | 23.2 | 77.49 | -2,638.3 | 56.7 | 3,127.7 | 3,088.4 | 39.33 | 79.532 | |
| 6,100.0 | 5,262.0 | 4,862.0 | 4,753.6 | 26.7 | 23.2 | 77.49 | -2,638.3 | 56.7 | 3,059.9 | 3,019.6 | 40.33 | 75.864 | |
| 6,200.0 | 5,262.0 | 4,862.0 | 4,753.6 | 27.8 | 23.2 | 77.49 | -2,638.3 | 56.7 | 2,993.9 | 2,952.4 | 41.50 | 72.145 | |
| 6,300.0 | 5,262.0 | 4,862.0 | 4,753.6 | 29.1 | 23.2 | 77.49 | -2,638.3 | 56.7 | 2,929.8 | 2,887.0 | 42.82 | 68.423 | |
| 6,400.0 | 5,262.0 | 4,838.8 | 4,731.9 | 30.6 | 23.1 | 76.92 | -2,635.4 | 64.3 | 2,867.5 | 2,823.3 | 44.15 | 64.941 | |
| 6,500.0 | 5,262.0 | 4,835.3 | 4,728.6 | 32.2 | 23.1 | 76.83 | -2,635.0 | 65.5 | 2,807.5 | 2,761.7 | 45.75 | 61.366 | |
| 6,600.0 | 5,262.0 | 4,831.9 | 4,725.4 | 33.8 | 23.1 | 76.74 | -2,634.6 | 66.5 | 2,749.9 | 2,702.4 | 47.49 | 57.907 | |
| 6,700.0 | 5,262.0 | 4,828.5 | 4,722.2 | 35.6 | 23.1 | 76.66 | -2,634.2 | 67.6 | 2,694.7 | 2,645.3 | 49.36 | 54.593 | |
| 6,800.0 | 5,262.0 | 4,825.1 | 4,719.0 | 37.5 | 23.1 | 76.57 | -2,633.8 | 68.7 | 2,642.1 | 2,590.8 | 51.36 | 51.445 | |
| 6,900.0 | 5,262.0 | 4,799.0 | 4,694.2 | 39.4 | 23.0 | 75.92 | -2,631.3 | 76.3 | 2,592.7 | 2,539.4 | 53.28 | 48.661 | |
| 7,000.0 | 5,262.0 | 4,799.0 | 4,694.2 | 41.4 | 23.0 | 75.92 | -2,631.3 | 76.3 | 2,545.8 | 2,490.3 | 55.53 | 45.846 | |
| 7,100.0 | 5,262.0 | 4,799.0 | 4,694.2 | 43.4 | 23.0 | 75.92 | -2,631.3 | 76.3 | 2,502.0 | 2,444.1 | 57.87 | 43.231 | |
| 7,200.0 | 5,262.0 | 4,799.0 | 4,694.2 | 45.4 | 23.0 | 75.92 | -2,631.3 | 76.3 | 2,461.5 | 2,401.1 | 60.31 | 40.816 | |
| 7,300.0 | 5,262.0 | 4,799.0 | 4,694.2 | 47.5 | 23.0 | 75.92 | -2,631.3 | 76.3 | 2,424.4 | 2,361.6 | 62.81 | 38.599 | |
| 7,400.0 | 5,262.0 | 4,799.0 | 4,694.2 | 49.7 | 23.0 | 75.92 | -2,631.3 | 76.3 | 2,390.9 | 2,325.5 | 65.37 | 36.577 | |
| 7,500.0 | 5,262.0 | 4,799.0 | 4,694.2 | 51.8 | 23.0 | 75.92 | -2,631.3 | 76.3 | 2,361.2 | 2,293.2 | 67.96 | 34.743 | |
| 7,600.0 | 5,262.0 | 4,799.0 | 4,694.2 | 54.0 | 23.0 | 75.92 | -2,631.3 | 76.3 | 2,335.4 | 2,264.8 | 70.58 | 33.091 | |
| 7,700.0 | 5,262.0 | 4,799.0 | 4,694.2 | 56.2 | 23.0 | 75.92 | -2,631.3 | 76.3 | 2,313.7 | 2,240.5 | 73.19 | 31.613 | |
| 7,800.0 | 5,262.0 | 4,799.0 | 4,694.2 | 58.4 | 23.0 | 75.92 | -2,631.3 | 76.3 | 2,296.1 | 2,220.3 | 75.78 | 30.301 | |
| 7,900.0 | 5,262.0 | 4,799.0 | 4,694.2 | 60.7 | 23.0 | 75.92 | -2,631.3 | 76.3 | 2,282.7 | 2,204.4 | 78.32 | 29.146 | |
| 8,000.0 | 5,262.0 | 4,799.0 | 4,694.2 | 62.9 | 23.0 | 75.92 | -2,631.3 | 76.3 | 2,273.7 | 2,192.9 | 80.80 | 28.140 | |
| 8,100.0 | 5,262.0 | 4,799.0 | 4,694.2 | 65.2 | 23.0 | 75.92 | -2,631.3 | 76.3 | 2,269.0 | 2,185.8 | 83.19 | 27.273 | |
| 8,176.1 | 5,262.0 | 4,777.1 | 4,673.2 | 66.9 | 22.9 | 75.37 | -2,629.4 | 82.3 | 2,268.1 | 2,183.4 | 84.72 | 26.772 | |
| 8,200.0 | 5,262.0 | 4,776.2 | 4,672.4 | 67.5 | 22.9 | 75.35 | -2,629.4 | 82.5 | 2,268.4 | 2,183.2 | 85.24 | 26.610 | |
| 8,300.0 | 5,262.0 | 4,772.6 | 4,668.9 | 69.8 | 22.9 | 75.26 | -2,629.1 | 83.5 | 2,272.4 | 2,185.1 | 87.38 | 26.007 | |
| 8,400.0 | 5,262.0 | 4,768.9 | 4,665.4 | 72.1 | 22.9 | 75.17 | -2,628.8 | 84.4 | 2,280.8 | 2,191.4 | 89.38 | 25.519 | |
| 8,500.0 | 5,262.0 | 4,765.3 | 4,661.9 | 74.4 | 22.9 | 75.08 | -2,628.5 | 85.3 | 2,293.5 | 2,202.3 | 91.24 | 25.138 | |

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

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | DJR Operating | **Local Co-ordinate Reference:** | Well # 108H |
| **Project:** | Betonnie Tsosie Unit | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Reference Site:** | M11 2308 Pad | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Original drilling | **Database:** | EDM |
| **Reference Design:** | APD | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Chaco 2308-14E (Enduring) - 152H - Original drilling - Pathfinder — **Offset Site Error:** 0.0 usft

**Survey Program:** 433-MWD+IGRF — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8,600.0 | 5,262.0 | 4,761.8 | 4,658.4 | 76.7 | 22.9 | 74.99 | -2,628.3 | 86.2 | 2,310.5 | 2,217.5 | 92.94 | 24.859 | |
| 8,700.0 | 5,262.0 | 4,758.2 | 4,655.0 | 79.0 | 22.8 | 74.90 | -2,628.0 | 87.1 | 2,331.6 | 2,237.1 | 94.50 | 24.674 | |
| 8,800.0 | 5,262.0 | 4,735.0 | 4,632.5 | 81.3 | 22.8 | 74.32 | -2,626.6 | 92.7 | 2,357.0 | 2,261.3 | 95.68 | 24.633 | |
| 8,900.0 | 5,262.0 | 4,735.0 | 4,632.5 | 83.7 | 22.8 | 74.32 | -2,626.6 | 92.7 | 2,385.9 | 2,289.0 | 96.96 | 24.608 | SF |
| 9,000.0 | 5,262.0 | 4,735.0 | 4,632.5 | 86.0 | 22.8 | 74.32 | -2,626.6 | 92.7 | 2,418.7 | 2,320.6 | 98.08 | 24.660 | |
| 9,100.0 | 5,262.0 | 4,735.0 | 4,632.5 | 88.4 | 22.8 | 74.32 | -2,626.6 | 92.7 | 2,455.1 | 2,356.0 | 99.06 | 24.785 | |
| 9,200.0 | 5,262.0 | 4,735.0 | 4,632.5 | 90.7 | 22.8 | 74.32 | -2,626.6 | 92.7 | 2,495.0 | 2,395.1 | 99.89 | 24.977 | |
| 9,300.0 | 5,262.0 | 4,735.0 | 4,632.5 | 93.1 | 22.8 | 74.32 | -2,626.6 | 92.7 | 2,538.2 | 2,437.6 | 100.59 | 25.232 | |
| 9,400.0 | 5,262.0 | 4,735.0 | 4,632.5 | 95.5 | 22.8 | 74.32 | -2,626.6 | 92.7 | 2,584.5 | 2,483.3 | 101.17 | 25.547 | |
| 9,500.0 | 5,262.0 | 4,735.0 | 4,632.5 | 97.8 | 22.8 | 74.32 | -2,626.6 | 92.7 | 2,633.8 | 2,532.2 | 101.63 | 25.916 | |
| 9,600.0 | 5,262.0 | 4,735.0 | 4,632.5 | 100.2 | 22.8 | 74.32 | -2,626.6 | 92.7 | 2,686.0 | 2,584.0 | 101.99 | 26.336 | |
| 9,700.0 | 5,262.0 | 4,735.0 | 4,632.5 | 102.6 | 22.8 | 74.32 | -2,626.6 | 92.7 | 2,740.8 | 2,638.5 | 102.25 | 26.805 | |
| 9,800.0 | 5,262.0 | 4,735.0 | 4,632.5 | 105.0 | 22.8 | 74.32 | -2,626.6 | 92.7 | 2,798.1 | 2,695.6 | 102.42 | 27.318 | |
| 9,900.0 | 5,262.0 | 4,735.0 | 4,632.5 | 107.3 | 22.8 | 74.32 | -2,626.6 | 92.7 | 2,857.7 | 2,755.2 | 102.53 | 27.873 | |
| 10,000.0 | 5,262.0 | 4,735.0 | 4,632.5 | 109.7 | 22.8 | 74.32 | -2,626.6 | 92.7 | 2,919.6 | 2,817.0 | 102.56 | 28.468 | |
| 10,100.0 | 5,262.0 | 4,735.0 | 4,632.5 | 112.1 | 22.8 | 74.32 | -2,626.6 | 92.7 | 2,983.5 | 2,881.0 | 102.53 | 29.099 | |
| 10,200.0 | 5,262.0 | 4,735.0 | 4,632.5 | 114.5 | 22.8 | 74.32 | -2,626.6 | 92.7 | 3,049.4 | 2,946.9 | 102.45 | 29.764 | |
| 10,300.0 | 5,262.0 | 4,735.0 | 4,632.5 | 116.9 | 22.8 | 74.32 | -2,626.6 | 92.7 | 3,117.1 | 3,014.7 | 102.33 | 30.462 | |
| 10,400.0 | 5,262.0 | 4,735.0 | 4,632.5 | 119.3 | 22.8 | 74.32 | -2,626.6 | 92.7 | 3,186.4 | 3,084.3 | 102.16 | 31.190 | |
| 10,500.0 | 5,262.0 | 4,735.0 | 4,632.5 | 121.7 | 22.8 | 74.32 | -2,626.6 | 92.7 | 3,257.4 | 3,155.5 | 101.97 | 31.946 | |
| 10,600.0 | 5,262.0 | 4,735.0 | 4,632.5 | 124.1 | 22.8 | 74.32 | -2,626.6 | 92.7 | 3,329.9 | 3,228.2 | 101.74 | 32.729 | |
| 10,700.0 | 5,262.0 | 4,735.0 | 4,632.5 | 126.5 | 22.8 | 74.32 | -2,626.6 | 92.7 | 3,403.8 | 3,302.3 | 101.49 | 33.537 | |
| 10,800.0 | 5,262.0 | 4,735.0 | 4,632.5 | 128.9 | 22.8 | 74.32 | -2,626.6 | 92.7 | 3,478.9 | 3,377.7 | 101.22 | 34.369 | |
| 10,900.0 | 5,262.0 | 4,735.0 | 4,632.5 | 131.3 | 22.8 | 74.32 | -2,626.6 | 92.7 | 3,555.3 | 3,454.4 | 100.94 | 35.223 | |
| 11,000.0 | 5,262.0 | 4,707.6 | 4,605.7 | 133.7 | 22.7 | 73.63 | -2,625.2 | 98.5 | 3,632.2 | 3,531.8 | 100.40 | 36.179 | |
| 11,100.0 | 5,262.0 | 4,706.2 | 4,604.4 | 136.1 | 22.7 | 73.60 | -2,625.1 | 98.7 | 3,710.7 | 3,610.7 | 100.08 | 37.079 | |
| 11,200.0 | 5,262.0 | 4,704.9 | 4,603.1 | 138.5 | 22.7 | 73.56 | -2,625.0 | 99.0 | 3,790.3 | 3,690.5 | 99.75 | 37.998 | |
| 11,300.0 | 5,262.0 | 4,703.6 | 4,601.9 | 140.9 | 22.7 | 73.53 | -2,625.0 | 99.2 | 3,870.8 | 3,771.4 | 99.42 | 38.934 | |
| 11,400.0 | 5,262.0 | 4,702.4 | 4,600.7 | 143.4 | 22.7 | 73.50 | -2,624.9 | 99.4 | 3,952.2 | 3,853.1 | 99.08 | 39.887 | |
| 11,500.0 | 5,262.0 | 4,701.2 | 4,599.5 | 145.8 | 22.7 | 73.47 | -2,624.9 | 99.6 | 4,034.4 | 3,935.7 | 98.75 | 40.856 | |
| 11,600.0 | 5,262.0 | 4,700.0 | 4,598.3 | 148.2 | 22.7 | 73.44 | -2,624.8 | 99.9 | 4,117.4 | 4,019.0 | 98.41 | 41.840 | |
| 11,700.0 | 5,262.0 | 4,672.0 | 4,570.7 | 150.6 | 22.6 | 72.75 | -2,623.7 | 104.1 | 4,201.8 | 4,103.9 | 97.86 | 42.936 | |
| 11,800.0 | 5,262.0 | 4,672.0 | 4,570.7 | 153.0 | 22.6 | 72.75 | -2,623.7 | 104.1 | 4,286.2 | 4,188.7 | 97.54 | 43.944 | |
| 11,900.0 | 5,262.0 | 4,672.0 | 4,570.7 | 155.4 | 22.6 | 72.75 | -2,623.7 | 104.1 | 4,371.2 | 4,274.0 | 97.21 | 44.965 | |
| 12,000.0 | 5,262.0 | 4,672.0 | 4,570.7 | 157.9 | 22.6 | 72.75 | -2,623.7 | 104.1 | 4,456.9 | 4,360.0 | 96.89 | 45.998 | |
| 12,100.0 | 5,262.0 | 4,672.0 | 4,570.7 | 160.3 | 22.6 | 72.75 | -2,623.7 | 104.1 | 4,543.2 | 4,446.6 | 96.58 | 47.043 | |
| 12,200.0 | 5,262.0 | 4,672.0 | 4,570.7 | 162.7 | 22.6 | 72.75 | -2,623.7 | 104.1 | 4,630.0 | 4,533.7 | 96.26 | 48.098 | |
| 12,300.0 | 5,262.0 | 4,672.0 | 4,570.7 | 165.1 | 22.6 | 72.75 | -2,623.7 | 104.1 | 4,717.3 | 4,621.3 | 95.95 | 49.164 | |
| 12,400.0 | 5,262.0 | 4,672.0 | 4,570.7 | 167.5 | 22.6 | 72.75 | -2,623.7 | 104.1 | 4,805.1 | 4,709.5 | 95.65 | 50.239 | |
| 12,500.0 | 5,262.0 | 4,672.0 | 4,570.7 | 170.0 | 22.6 | 72.75 | -2,623.7 | 104.1 | 4,893.4 | 4,798.1 | 95.34 | 51.323 | |
| 12,600.0 | 5,262.0 | 4,672.0 | 4,570.7 | 172.4 | 22.6 | 72.75 | -2,623.7 | 104.1 | 4,982.1 | 4,887.1 | 95.05 | 52.417 | |
| 12,700.0 | 5,262.0 | 4,672.0 | 4,570.7 | 174.8 | 22.6 | 72.75 | -2,623.7 | 104.1 | 5,071.3 | 4,976.5 | 94.76 | 53.518 | |
| 12,800.0 | 5,262.0 | 4,672.0 | 4,570.7 | 177.2 | 22.6 | 72.75 | -2,623.7 | 104.1 | 5,160.8 | 5,066.4 | 94.47 | 54.628 | |
| 12,900.0 | 5,262.0 | 4,672.0 | 4,570.7 | 179.7 | 22.6 | 72.75 | -2,623.7 | 104.1 | 5,250.8 | 5,156.6 | 94.19 | 55.745 | |
| 13,000.0 | 5,262.0 | 4,672.0 | 4,570.7 | 182.1 | 22.6 | 72.75 | -2,623.7 | 104.1 | 5,341.1 | 5,247.1 | 93.92 | 56.869 | |
| 13,100.0 | 5,262.0 | 4,672.0 | 4,570.7 | 184.5 | 22.6 | 72.75 | -2,623.7 | 104.1 | 5,431.7 | 5,338.0 | 93.65 | 58.000 | |
| 13,200.0 | 5,262.0 | 4,672.0 | 4,570.7 | 186.9 | 22.6 | 72.75 | -2,623.7 | 104.1 | 5,522.6 | 5,429.3 | 93.39 | 59.137 | |
| 13,300.0 | 5,262.0 | 4,672.0 | 4,570.7 | 189.4 | 22.6 | 72.75 | -2,623.7 | 104.1 | 5,613.9 | 5,520.8 | 93.13 | 60.280 | |
| 13,400.0 | 5,262.0 | 4,672.0 | 4,570.7 | 191.8 | 22.6 | 72.75 | -2,623.7 | 104.1 | 5,705.4 | 5,612.6 | 92.88 | 61.429 | |
| 13,500.0 | 5,262.0 | 4,672.0 | 4,570.7 | 194.2 | 22.6 | 72.75 | -2,623.7 | 104.1 | 5,797.3 | 5,704.6 | 92.63 | 62.584 | |
| 13,600.0 | 5,262.0 | 4,672.0 | 4,570.7 | 196.7 | 22.6 | 72.75 | -2,623.7 | 104.1 | 5,889.4 | 5,797.0 | 92.39 | 63.744 | |
| 13,700.0 | 5,262.0 | 4,672.0 | 4,570.7 | 199.1 | 22.6 | 72.75 | -2,623.7 | 104.1 | 5,981.7 | 5,889.6 | 92.16 | 64.909 | |

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

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | DJR Operating | **Local Co-ordinate Reference:** | Well # 108H |
| **Project:** | Betonnie Tsosie Unit | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Reference Site:** | M11 2308 Pad | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Original drilling | **Database:** | EDM |
| **Reference Design:** | APD | **Offset TVD Reference:** | Offset Datum |

**Offset Design** Chaco 2308-14E (Enduring) - 152H - Original drilling - Pathfinder

**Offset Site Error:** 0.0 usft

**Survey Program:** 433-MWD+IGRF

**Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13,715.1 | 5,262.0 | 4,672.0 | 4,570.7 | 199.5 | 22.6 | 72.75 | -2,623.7 | 104.1 | 5,995.7 | 5,903.6 | 92.12 | 65.085 | |

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

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | DJR Operating | **Local Co-ordinate Reference:** | Well # 108H |
| **Project:** | Betonnie Tsosie Unit | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Reference Site:** | M11 2308 Pad | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Original drilling | **Database:** | EDM |
| **Reference Design:** | APD | **Offset TVD Reference:** | Offset Datum |

**Offset Design** M11 2308 Pad - # 728H - Original drilling - APD — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD+IGRF — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 44.98 | 21.8 | 21.8 | 30.9 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.2 | 0.2 | 44.98 | 21.8 | 21.8 | 30.9 | 30.6 | 0.31 | 100.152 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.5 | 0.5 | 44.98 | 21.8 | 21.8 | 30.9 | 29.9 | 1.03 | 30.116 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.9 | 0.9 | 44.98 | 21.8 | 21.8 | 30.9 | 29.1 | 1.74 | 17.722 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 1.2 | 1.2 | 44.98 | 21.8 | 21.8 | 30.9 | 28.4 | 2.46 | 12.556 | |
| 450.0 | 450.0 | 450.0 | 450.0 | 1.4 | 1.4 | 44.98 | 21.8 | 21.8 | 30.9 | 28.1 | 2.82 | 10.958 | |
| 500.0 | 500.0 | 500.0 | 500.0 | 1.6 | 1.6 | 63.86 | 21.8 | 21.8 | 30.6 | 27.5 | 3.18 | 9.645 | |
| 600.0 | 599.9 | 600.6 | 600.5 | 1.9 | 1.9 | 75.42 | 19.6 | 21.8 | 27.7 | 23.9 | 3.88 | 7.151 | |
| 675.7 | 675.3 | 675.9 | 675.7 | 2.2 | 2.2 | 97.84 | 15.1 | 21.8 | 25.7 | 21.3 | 4.41 | 5.824 | CC, ES |
| 700.0 | 699.5 | 699.8 | 699.5 | 2.3 | 2.3 | 107.48 | 13.1 | 21.8 | 26.0 | 21.5 | 4.58 | 5.690 | |
| 800.0 | 798.6 | 796.5 | 795.7 | 2.7 | 2.6 | 144.26 | 2.7 | 21.9 | 37.8 | 32.5 | 5.29 | 7.140 | |
| 900.0 | 897.1 | 889.9 | 888.0 | 3.1 | 3.0 | 163.47 | -11.2 | 21.9 | 64.5 | 58.6 | 5.98 | 10.787 | |
| 1,000.0 | 994.7 | 979.0 | 975.5 | 3.6 | 3.4 | 172.41 | -28.0 | 21.9 | 101.7 | 95.1 | 6.64 | 15.314 | |
| 1,090.4 | 1,082.1 | 1,055.5 | 1,050.0 | 4.0 | 3.7 | 176.79 | -45.1 | 22.0 | 142.5 | 135.3 | 7.21 | 19.753 | |
| 1,100.0 | 1,091.3 | 1,063.3 | 1,057.7 | 4.1 | 3.7 | 177.14 | -47.0 | 22.0 | 147.1 | 139.8 | 7.28 | 20.207 | |
| 1,200.0 | 1,187.4 | 1,143.6 | 1,135.1 | 4.6 | 4.2 | -180.00 | -67.9 | 22.0 | 197.6 | 189.7 | 7.86 | 25.145 | |
| 1,300.0 | 1,283.6 | 1,225.9 | 1,214.1 | 5.2 | 4.6 | -178.05 | -91.5 | 22.1 | 250.5 | 242.0 | 8.47 | 29.584 | |
| 1,400.0 | 1,379.7 | 1,310.4 | 1,295.0 | 5.8 | 5.1 | -176.73 | -115.8 | 22.1 | 303.7 | 294.6 | 9.12 | 33.293 | |
| 1,500.0 | 1,475.8 | 1,394.9 | 1,375.9 | 6.4 | 5.6 | -175.80 | -140.2 | 22.2 | 357.0 | 347.2 | 9.78 | 36.497 | |
| 1,600.0 | 1,571.9 | 1,479.4 | 1,456.8 | 7.0 | 6.1 | -175.11 | -164.5 | 22.3 | 410.4 | 399.9 | 10.45 | 39.273 | |
| 1,700.0 | 1,668.1 | 1,563.9 | 1,537.7 | 7.6 | 6.6 | -174.58 | -188.8 | 22.3 | 463.7 | 452.6 | 11.12 | 41.697 | |
| 1,800.0 | 1,764.2 | 1,648.4 | 1,618.6 | 8.2 | 7.1 | -174.16 | -213.1 | 22.4 | 517.2 | 505.4 | 11.80 | 43.828 | |
| 1,900.0 | 1,860.3 | 1,732.9 | 1,699.5 | 8.8 | 7.7 | -173.82 | -237.5 | 22.4 | 570.6 | 558.1 | 12.48 | 45.714 | |
| 2,000.0 | 1,956.4 | 1,817.4 | 1,780.5 | 9.4 | 8.2 | -173.53 | -261.8 | 22.5 | 624.0 | 610.8 | 13.17 | 47.393 | |
| 2,100.0 | 2,052.5 | 1,901.9 | 1,861.4 | 10.0 | 8.7 | -173.30 | -286.1 | 22.5 | 677.4 | 663.6 | 13.85 | 48.896 | |
| 2,200.0 | 2,148.7 | 1,986.3 | 1,942.3 | 10.6 | 9.3 | -173.09 | -310.4 | 22.6 | 730.9 | 716.4 | 14.55 | 50.248 | |
| 2,300.0 | 2,244.8 | 2,070.8 | 2,023.2 | 11.2 | 9.8 | -172.92 | -334.8 | 22.7 | 784.4 | 769.1 | 15.24 | 51.471 | |
| 2,400.0 | 2,340.9 | 2,155.3 | 2,104.1 | 11.9 | 10.4 | -172.76 | -359.1 | 22.7 | 837.8 | 821.9 | 15.93 | 52.580 | |
| 2,500.0 | 2,437.0 | 2,239.8 | 2,185.0 | 12.5 | 10.9 | -172.63 | -383.4 | 22.8 | 891.3 | 874.6 | 16.63 | 53.592 | |
| 2,600.0 | 2,533.1 | 2,324.3 | 2,265.9 | 13.1 | 11.4 | -172.51 | -407.7 | 22.8 | 944.7 | 927.4 | 17.33 | 54.517 | |
| 2,700.0 | 2,629.3 | 2,408.8 | 2,346.8 | 13.7 | 12.0 | -172.40 | -432.1 | 22.9 | 998.2 | 980.2 | 18.03 | 55.367 | |
| 2,800.0 | 2,725.4 | 2,493.3 | 2,427.8 | 14.3 | 12.5 | -172.30 | -456.4 | 22.9 | 1,051.7 | 1,032.9 | 18.73 | 56.150 | |
| 2,900.0 | 2,821.5 | 2,577.8 | 2,508.7 | 15.0 | 13.1 | -172.22 | -480.7 | 23.0 | 1,105.2 | 1,085.7 | 19.43 | 56.872 | |
| 3,000.0 | 2,917.6 | 2,662.3 | 2,589.6 | 15.6 | 13.6 | -172.14 | -505.0 | 23.1 | 1,158.6 | 1,138.5 | 20.14 | 57.542 | |
| 3,100.0 | 3,013.7 | 2,746.8 | 2,670.5 | 16.2 | 14.2 | -172.07 | -529.4 | 23.1 | 1,212.1 | 1,191.3 | 20.84 | 58.164 | |
| 3,200.0 | 3,109.9 | 2,831.3 | 2,751.4 | 16.8 | 14.7 | -172.00 | -553.7 | 23.2 | 1,265.6 | 1,244.0 | 21.54 | 58.742 | |
| 3,300.0 | 3,206.0 | 2,915.7 | 2,832.3 | 17.5 | 15.3 | -171.94 | -578.0 | 23.2 | 1,319.1 | 1,296.8 | 22.25 | 59.282 | |
| 3,400.0 | 3,302.1 | 3,000.2 | 2,913.2 | 18.1 | 15.8 | -171.88 | -602.4 | 23.3 | 1,372.5 | 1,349.6 | 22.96 | 59.787 | |
| 3,500.0 | 3,398.2 | 3,084.7 | 2,994.2 | 18.7 | 16.4 | -171.83 | -626.7 | 23.3 | 1,426.0 | 1,402.4 | 23.66 | 60.260 | |
| 3,600.0 | 3,494.3 | 3,169.2 | 3,075.1 | 19.3 | 16.9 | -171.78 | -651.0 | 23.4 | 1,479.5 | 1,455.1 | 24.37 | 60.703 | |
| 3,700.0 | 3,590.5 | 3,253.7 | 3,156.0 | 20.0 | 17.5 | -171.74 | -675.3 | 23.5 | 1,533.0 | 1,507.9 | 25.08 | 61.120 | |
| 3,800.0 | 3,686.6 | 3,338.2 | 3,236.9 | 20.6 | 18.0 | -171.70 | -699.7 | 23.5 | 1,586.5 | 1,560.7 | 25.79 | 61.513 | |
| 3,900.0 | 3,782.7 | 3,422.7 | 3,317.8 | 21.2 | 18.6 | -171.66 | -724.0 | 23.6 | 1,639.9 | 1,613.4 | 26.50 | 61.883 | |
| 4,000.0 | 3,878.8 | 3,507.2 | 3,398.7 | 21.8 | 19.1 | -171.62 | -748.3 | 23.6 | 1,693.4 | 1,666.2 | 27.21 | 62.233 | |
| 4,100.0 | 3,975.0 | 3,591.7 | 3,479.6 | 22.5 | 19.7 | -171.59 | -772.6 | 23.7 | 1,746.9 | 1,719.0 | 27.92 | 62.564 | |
| 4,200.0 | 4,071.1 | 3,676.2 | 3,560.5 | 23.1 | 20.2 | -171.56 | -797.0 | 23.7 | 1,800.4 | 1,771.8 | 28.63 | 62.877 | |
| 4,300.0 | 4,167.2 | 3,760.7 | 3,641.5 | 23.7 | 20.8 | -171.53 | -821.3 | 23.8 | 1,853.9 | 1,824.5 | 29.35 | 63.174 | |
| 4,400.0 | 4,263.3 | 3,845.2 | 3,722.4 | 24.3 | 21.3 | -171.50 | -845.6 | 23.9 | 1,907.4 | 1,877.3 | 30.06 | 63.456 | |
| 4,500.0 | 4,359.4 | 3,929.6 | 3,803.3 | 25.0 | 21.9 | -171.47 | -869.9 | 23.9 | 1,960.9 | 1,930.1 | 30.77 | 63.724 | |
| 4,600.0 | 4,455.6 | 4,014.1 | 3,884.2 | 25.6 | 22.4 | -171.45 | -894.3 | 24.0 | 2,014.3 | 1,982.9 | 31.48 | 63.979 | |
| 4,614.6 | 4,469.6 | 4,026.4 | 3,896.0 | 25.7 | 22.5 | -171.44 | -897.8 | 24.0 | 2,022.1 | 1,990.5 | 31.59 | 64.015 | |
| 4,650.0 | 4,503.8 | 4,056.8 | 3,925.1 | 25.9 | 22.7 | -178.04 | -906.6 | 24.0 | 2,040.4 | 2,008.5 | 31.84 | 64.087 | |

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

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | DJR Operating | **Local Co-ordinate Reference:** | Well # 108H |
| **Project:** | Betonnie Tsosie Unit | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Reference Site:** | M11 2308 Pad | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Original drilling | **Database:** | EDM |
| **Reference Design:** | APD | **Offset TVD Reference:** | Offset Datum |

**Offset Design** M11 2308 Pad - # 728H - Original drilling - APD — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD+IGRF — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,700.0 | 4,552.9 | 4,101.0 | 3,967.3 | 26.2 | 23.0 | 167.40 | -919.3 | 24.0 | 2,063.6 | 2,031.4 | 32.18 | 64.120 | |
| 4,750.0 | 4,602.4 | 4,146.4 | 4,010.8 | 26.3 | 23.3 | 140.47 | -932.3 | 24.1 | 2,083.9 | 2,051.3 | 32.52 | 64.072 | |
| 4,800.0 | 4,652.0 | 4,192.8 | 4,055.3 | 26.5 | 23.6 | 102.05 | -945.7 | 24.1 | 2,101.0 | 2,068.1 | 32.85 | 63.948 | |
| 4,850.0 | 4,701.5 | 4,240.0 | 4,100.5 | 26.6 | 23.9 | 74.09 | -959.3 | 24.1 | 2,114.8 | 2,081.6 | 33.17 | 63.752 | |
| 4,900.0 | 4,750.6 | 4,287.6 | 4,146.0 | 26.6 | 24.2 | 59.64 | -973.0 | 24.2 | 2,125.4 | 2,091.9 | 33.48 | 63.487 | |
| 4,950.0 | 4,799.0 | 4,335.3 | 4,191.7 | 26.6 | 24.6 | 51.93 | -986.7 | 24.2 | 2,132.7 | 2,098.9 | 33.77 | 63.153 | |
| 5,000.0 | 4,846.2 | 4,382.8 | 4,237.3 | 26.6 | 24.9 | 47.47 | -1,000.4 | 24.2 | 2,136.6 | 2,102.6 | 34.05 | 62.752 | |
| 5,050.0 | 4,892.2 | 4,429.9 | 4,282.4 | 26.5 | 25.2 | 44.80 | -1,014.0 | 24.3 | 2,137.3 | 2,102.9 | 34.31 | 62.285 | |
| 5,100.0 | 4,936.5 | 4,476.3 | 4,326.8 | 26.5 | 25.5 | 43.24 | -1,027.3 | 24.3 | 2,134.6 | 2,100.0 | 34.57 | 61.753 | |
| 5,150.0 | 4,979.0 | 4,521.6 | 4,370.2 | 26.3 | 25.8 | 42.45 | -1,040.4 | 24.3 | 2,128.8 | 2,094.0 | 34.81 | 61.155 | |
| 5,200.0 | 5,019.3 | 4,565.6 | 4,412.4 | 26.2 | 26.1 | 42.23 | -1,053.1 | 24.3 | 2,119.8 | 2,084.7 | 35.04 | 60.492 | |
| 5,250.0 | 5,057.1 | 4,608.1 | 4,453.0 | 26.0 | 26.3 | 42.49 | -1,065.3 | 24.4 | 2,107.8 | 2,072.5 | 35.27 | 59.762 | |
| 5,300.0 | 5,092.4 | 4,648.7 | 4,491.9 | 25.9 | 26.6 | 43.15 | -1,077.0 | 24.4 | 2,092.9 | 2,057.4 | 35.49 | 58.963 | |
| 5,350.0 | 5,124.8 | 4,687.2 | 4,528.7 | 25.7 | 26.9 | 44.20 | -1,088.1 | 24.4 | 2,075.2 | 2,039.5 | 35.72 | 58.095 | |
| 5,400.0 | 5,154.1 | 4,723.4 | 4,563.4 | 25.5 | 27.1 | 45.60 | -1,098.5 | 24.4 | 2,055.0 | 2,019.1 | 35.95 | 57.157 | |
| 5,450.0 | 5,180.2 | 4,757.0 | 4,595.6 | 25.3 | 27.3 | 47.36 | -1,108.1 | 24.5 | 2,032.4 | 1,996.2 | 36.20 | 56.147 | |
| 5,500.0 | 5,202.9 | 4,787.8 | 4,625.1 | 25.2 | 27.5 | 49.47 | -1,117.0 | 24.5 | 2,007.5 | 1,971.1 | 36.46 | 55.067 | |
| 5,550.0 | 5,222.1 | 4,815.7 | 4,651.9 | 25.0 | 27.7 | 51.92 | -1,125.1 | 24.5 | 1,980.7 | 1,944.0 | 36.74 | 53.918 | |
| 5,600.0 | 5,237.6 | 4,840.5 | 4,675.6 | 24.9 | 27.9 | 54.73 | -1,132.2 | 24.5 | 1,952.1 | 1,915.0 | 37.04 | 52.705 | |
| 5,650.0 | 5,249.4 | 4,862.0 | 4,696.2 | 24.8 | 28.0 | 57.87 | -1,138.4 | 24.5 | 1,921.9 | 1,884.5 | 37.37 | 51.433 | |
| 5,700.0 | 5,257.3 | 4,880.1 | 4,713.5 | 24.8 | 28.1 | 61.32 | -1,143.6 | 24.6 | 1,890.3 | 1,852.6 | 37.72 | 50.108 | |
| 5,750.0 | 5,261.4 | 4,894.7 | 4,727.5 | 24.8 | 28.2 | 65.06 | -1,147.8 | 24.6 | 1,857.7 | 1,819.6 | 38.11 | 48.742 | |
| 5,777.3 | 5,262.0 | 4,900.5 | 4,733.1 | 24.8 | 28.3 | 67.18 | -1,149.5 | 24.6 | 1,839.5 | 1,801.1 | 38.33 | 47.986 | |
| 5,800.0 | 5,262.0 | 4,900.5 | 4,733.1 | 24.8 | 28.3 | 67.18 | -1,149.5 | 24.6 | 1,824.3 | 1,785.8 | 38.48 | 47.407 | |
| 5,900.0 | 5,262.0 | 4,900.5 | 4,733.1 | 25.2 | 28.3 | 67.18 | -1,149.5 | 24.6 | 1,759.5 | 1,720.2 | 39.27 | 44.804 | |
| 6,000.0 | 5,262.0 | 4,919.5 | 4,751.2 | 25.8 | 28.4 | 67.94 | -1,155.1 | 24.8 | 1,697.8 | 1,657.3 | 40.49 | 41.935 | |
| 6,100.0 | 5,262.0 | 4,929.6 | 4,760.8 | 26.7 | 28.5 | 68.35 | -1,158.3 | 25.1 | 1,639.9 | 1,598.0 | 41.87 | 39.165 | |
| 6,200.0 | 5,262.0 | 4,950.0 | 4,780.0 | 27.8 | 28.6 | 69.16 | -1,165.0 | 26.0 | 1,586.0 | 1,542.4 | 43.63 | 36.354 | |
| 6,300.0 | 5,262.0 | 4,950.0 | 4,780.0 | 29.1 | 28.6 | 69.16 | -1,165.0 | 26.0 | 1,536.4 | 1,491.0 | 45.42 | 33.828 | |
| 6,400.0 | 5,262.0 | 4,969.3 | 4,798.1 | 30.6 | 28.8 | 69.93 | -1,171.8 | 27.2 | 1,491.7 | 1,444.0 | 47.68 | 31.287 | |
| 6,500.0 | 5,262.0 | 4,986.9 | 4,814.3 | 32.2 | 28.9 | 70.63 | -1,178.3 | 28.7 | 1,452.1 | 1,401.9 | 50.14 | 28.961 | |
| 6,600.0 | 5,262.0 | 5,000.0 | 4,826.3 | 33.8 | 29.0 | 71.14 | -1,183.3 | 30.1 | 1,418.0 | 1,365.3 | 52.74 | 26.889 | |
| 6,700.0 | 5,262.0 | 5,032.2 | 4,855.5 | 35.6 | 29.3 | 72.39 | -1,196.4 | 34.2 | 1,389.6 | 1,333.9 | 55.73 | 24.937 | |
| 6,800.0 | 5,262.0 | 5,061.9 | 4,881.8 | 37.5 | 29.5 | 73.53 | -1,209.3 | 39.0 | 1,367.2 | 1,308.4 | 58.78 | 23.258 | |
| 6,900.0 | 5,262.0 | 5,100.0 | 4,914.6 | 39.4 | 29.9 | 74.95 | -1,227.1 | 46.5 | 1,350.7 | 1,288.7 | 62.00 | 21.786 | |
| 7,000.0 | 5,262.0 | 5,143.3 | 4,950.6 | 41.4 | 30.3 | 76.52 | -1,248.8 | 56.9 | 1,339.9 | 1,274.6 | 65.29 | 20.524 | |
| 7,100.0 | 5,262.0 | 5,200.3 | 4,995.4 | 43.4 | 30.9 | 78.47 | -1,279.7 | 73.5 | 1,334.4 | 1,265.7 | 68.72 | 19.419 | |
| 7,178.6 | 5,262.0 | 5,255.8 | 5,036.1 | 45.0 | 31.5 | 80.24 | -1,312.2 | 92.7 | 1,333.3 | 1,261.7 | 71.53 | 18.640 | |
| 7,200.0 | 5,262.0 | 5,272.9 | 5,048.0 | 45.4 | 31.7 | 80.76 | -1,322.7 | 99.3 | 1,333.4 | 1,261.0 | 72.31 | 18.440 | |
| 7,300.0 | 5,262.0 | 5,365.9 | 5,106.7 | 47.5 | 32.9 | 83.32 | -1,382.5 | 139.3 | 1,335.3 | 1,259.2 | 76.12 | 17.542 | |
| 7,400.0 | 5,262.0 | 5,483.2 | 5,165.4 | 49.7 | 34.4 | 85.86 | -1,463.9 | 199.8 | 1,338.3 | 1,258.0 | 80.24 | 16.679 | |
| 7,500.0 | 5,262.0 | 5,624.6 | 5,210.6 | 51.8 | 36.6 | 87.80 | -1,567.1 | 284.8 | 1,340.0 | 1,255.3 | 84.69 | 15.822 | |
| 7,600.0 | 5,262.0 | 5,775.5 | 5,226.0 | 54.0 | 39.0 | 88.46 | -1,677.9 | 385.5 | 1,338.2 | 1,249.0 | 89.28 | 14.990 | |
| 7,700.0 | 5,262.0 | 5,875.5 | 5,226.0 | 56.2 | 40.7 | 88.45 | -1,750.4 | 454.3 | 1,334.8 | 1,241.4 | 93.38 | 14.295 | |
| 7,800.0 | 5,262.0 | 5,975.4 | 5,226.0 | 58.4 | 42.4 | 88.45 | -1,822.9 | 523.1 | 1,331.3 | 1,233.7 | 97.56 | 13.646 | |
| 7,900.0 | 5,262.0 | 6,075.4 | 5,226.0 | 60.7 | 44.3 | 88.45 | -1,895.4 | 591.8 | 1,327.8 | 1,226.0 | 101.81 | 13.042 | |
| 8,000.0 | 5,262.0 | 6,175.3 | 5,226.0 | 62.9 | 46.2 | 88.44 | -1,968.0 | 660.6 | 1,324.4 | 1,218.2 | 106.13 | 12.479 | |
| 8,100.0 | 5,262.0 | 6,275.2 | 5,226.0 | 65.2 | 48.1 | 88.44 | -2,040.5 | 729.4 | 1,320.9 | 1,210.4 | 110.50 | 11.954 | |
| 8,200.0 | 5,262.0 | 6,375.2 | 5,226.0 | 67.5 | 50.1 | 88.43 | -2,113.0 | 798.1 | 1,317.4 | 1,202.5 | 114.92 | 11.464 | |
| 8,300.0 | 5,262.0 | 6,475.1 | 5,226.0 | 69.8 | 52.2 | 88.43 | -2,185.5 | 866.9 | 1,313.9 | 1,194.6 | 119.38 | 11.006 | |
| 8,400.0 | 5,262.0 | 6,575.1 | 5,226.0 | 72.1 | 54.2 | 88.42 | -2,258.0 | 935.7 | 1,310.5 | 1,186.6 | 123.88 | 10.578 | |
| 8,500.0 | 5,262.0 | 6,675.0 | 5,226.0 | 74.4 | 56.4 | 88.42 | -2,330.5 | 1,004.5 | 1,307.0 | 1,178.6 | 128.41 | 10.178 | |

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

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | DJR Operating | **Local Co-ordinate Reference:** | Well # 108H |
| **Project:** | Betonnie Tsosie Unit | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Reference Site:** | M11 2308 Pad | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Original drilling | **Database:** | EDM |
| **Reference Design:** | APD | **Offset TVD Reference:** | Offset Datum |

**Offset Design** M11 2308 Pad - # 728H - Original drilling - APD — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD+IGRF — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8,600.0 | 5,262.0 | 6,774.9 | 5,226.0 | 76.7 | 58.5 | 88.42 | -2,403.1 | 1,073.2 | 1,303.5 | 1,170.5 | 132.97 | 9.803 | |
| 8,700.0 | 5,262.0 | 6,874.9 | 5,226.0 | 79.0 | 60.7 | 88.41 | -2,475.6 | 1,142.0 | 1,300.0 | 1,162.5 | 137.56 | 9.451 | |
| 8,800.0 | 5,262.0 | 6,974.8 | 5,226.0 | 81.3 | 62.8 | 88.41 | -2,548.1 | 1,210.8 | 1,296.6 | 1,154.4 | 142.17 | 9.120 | |
| 8,900.0 | 5,262.0 | 7,074.7 | 5,226.0 | 83.7 | 65.1 | 88.40 | -2,620.6 | 1,279.6 | 1,293.1 | 1,146.3 | 146.80 | 8.808 | |
| 9,000.0 | 5,262.0 | 7,174.7 | 5,226.0 | 86.0 | 67.3 | 88.40 | -2,693.1 | 1,348.3 | 1,289.6 | 1,138.2 | 151.46 | 8.515 | |
| 9,100.0 | 5,262.0 | 7,274.6 | 5,226.0 | 88.4 | 69.5 | 88.40 | -2,765.6 | 1,417.1 | 1,286.2 | 1,130.0 | 156.12 | 8.238 | |
| 9,200.0 | 5,262.0 | 7,374.6 | 5,226.0 | 90.7 | 71.8 | 88.39 | -2,838.1 | 1,485.9 | 1,282.7 | 1,121.9 | 160.81 | 7.977 | |
| 9,300.0 | 5,262.0 | 7,474.5 | 5,226.0 | 93.1 | 74.1 | 88.39 | -2,910.7 | 1,554.6 | 1,279.2 | 1,113.7 | 165.51 | 7.729 | |
| 9,400.0 | 5,262.0 | 7,574.4 | 5,226.0 | 95.5 | 76.4 | 88.38 | -2,983.2 | 1,623.4 | 1,275.7 | 1,105.5 | 170.22 | 7.495 | |
| 9,500.0 | 5,262.0 | 7,674.4 | 5,226.0 | 97.8 | 78.7 | 88.38 | -3,055.7 | 1,692.2 | 1,272.3 | 1,097.3 | 174.94 | 7.273 | |
| 9,600.0 | 5,262.0 | 7,774.3 | 5,226.0 | 100.2 | 81.0 | 88.37 | -3,128.2 | 1,761.0 | 1,268.8 | 1,089.1 | 179.67 | 7.062 | |
| 9,700.0 | 5,262.0 | 7,874.3 | 5,226.0 | 102.6 | 83.3 | 88.37 | -3,200.7 | 1,829.7 | 1,265.3 | 1,080.9 | 184.42 | 6.861 | |
| 9,800.0 | 5,262.0 | 7,974.2 | 5,226.0 | 105.0 | 85.6 | 88.36 | -3,273.2 | 1,898.5 | 1,261.9 | 1,072.7 | 189.17 | 6.671 | |
| 9,900.0 | 5,262.0 | 8,074.1 | 5,226.0 | 107.3 | 88.0 | 88.36 | -3,345.7 | 1,967.3 | 1,258.4 | 1,064.5 | 193.93 | 6.489 | |
| 10,000.0 | 5,262.0 | 8,174.1 | 5,226.0 | 109.7 | 90.3 | 88.36 | -3,418.3 | 2,036.0 | 1,254.9 | 1,056.2 | 198.70 | 6.316 | |
| 10,100.0 | 5,262.0 | 8,274.0 | 5,226.0 | 112.1 | 92.7 | 88.35 | -3,490.8 | 2,104.8 | 1,251.4 | 1,048.0 | 203.48 | 6.150 | |
| 10,200.0 | 5,262.0 | 8,374.0 | 5,226.0 | 114.5 | 95.0 | 88.35 | -3,563.3 | 2,173.6 | 1,248.0 | 1,039.7 | 208.26 | 5.992 | |
| 10,300.0 | 5,262.0 | 8,473.9 | 5,226.0 | 116.9 | 97.4 | 88.34 | -3,635.8 | 2,242.4 | 1,244.5 | 1,031.4 | 213.05 | 5.841 | |
| 10,400.0 | 5,262.0 | 8,573.8 | 5,226.0 | 119.3 | 99.8 | 88.34 | -3,708.3 | 2,311.1 | 1,241.0 | 1,023.2 | 217.84 | 5.697 | |
| 10,500.0 | 5,262.0 | 8,673.8 | 5,226.0 | 121.7 | 102.1 | 88.33 | -3,780.8 | 2,379.9 | 1,237.5 | 1,014.9 | 222.65 | 5.558 | |
| 10,600.0 | 5,262.0 | 8,773.7 | 5,226.0 | 124.1 | 104.5 | 88.33 | -3,853.3 | 2,448.7 | 1,234.1 | 1,006.6 | 227.45 | 5.426 | |
| 10,700.0 | 5,262.0 | 8,873.7 | 5,226.0 | 126.5 | 106.9 | 88.32 | -3,925.9 | 2,517.4 | 1,230.6 | 998.3 | 232.26 | 5.298 | |
| 10,800.0 | 5,262.0 | 8,973.6 | 5,226.0 | 128.9 | 109.3 | 88.32 | -3,998.4 | 2,586.2 | 1,227.1 | 990.1 | 237.08 | 5.176 | |
| 10,900.0 | 5,262.0 | 9,073.5 | 5,226.0 | 131.3 | 111.7 | 88.31 | -4,070.9 | 2,655.0 | 1,223.7 | 981.8 | 241.90 | 5.059 | |
| 11,000.0 | 5,262.0 | 9,173.5 | 5,226.0 | 133.7 | 114.1 | 88.31 | -4,143.4 | 2,723.8 | 1,220.2 | 973.5 | 246.72 | 4.946 | |
| 11,100.0 | 5,262.0 | 9,273.4 | 5,226.0 | 136.1 | 116.5 | 88.30 | -4,215.9 | 2,792.5 | 1,216.7 | 965.2 | 251.55 | 4.837 | |
| 11,200.0 | 5,262.0 | 9,373.4 | 5,226.0 | 138.5 | 118.9 | 88.30 | -4,288.4 | 2,861.3 | 1,213.2 | 956.9 | 256.38 | 4.732 | |
| 11,300.0 | 5,262.0 | 9,473.3 | 5,226.0 | 140.9 | 121.3 | 88.29 | -4,360.9 | 2,930.1 | 1,209.8 | 948.6 | 261.21 | 4.631 | |
| 11,400.0 | 5,262.0 | 9,573.2 | 5,226.0 | 143.4 | 123.7 | 88.29 | -4,433.5 | 2,998.8 | 1,206.3 | 940.3 | 266.05 | 4.534 | |
| 11,500.0 | 5,262.0 | 9,673.2 | 5,226.0 | 145.8 | 126.1 | 88.28 | -4,506.0 | 3,067.6 | 1,202.8 | 931.9 | 270.89 | 4.440 | |
| 11,600.0 | 5,262.0 | 9,773.1 | 5,226.0 | 148.2 | 128.5 | 88.28 | -4,578.5 | 3,136.4 | 1,199.4 | 923.6 | 275.73 | 4.350 | |
| 11,700.0 | 5,262.0 | 9,873.1 | 5,226.0 | 150.6 | 130.9 | 88.27 | -4,651.0 | 3,205.2 | 1,195.9 | 915.3 | 280.58 | 4.262 | |
| 11,800.0 | 5,262.0 | 9,973.0 | 5,226.0 | 153.0 | 133.3 | 88.27 | -4,723.5 | 3,273.9 | 1,192.4 | 907.0 | 285.43 | 4.178 | |
| 11,900.0 | 5,262.0 | 10,072.9 | 5,226.0 | 155.4 | 135.8 | 88.26 | -4,796.0 | 3,342.7 | 1,188.9 | 898.7 | 290.28 | 4.096 | |
| 12,000.0 | 5,262.0 | 10,172.9 | 5,226.0 | 157.9 | 138.2 | 88.26 | -4,868.5 | 3,411.5 | 1,185.5 | 890.3 | 295.13 | 4.017 | |
| 12,100.0 | 5,262.0 | 10,272.8 | 5,226.0 | 160.3 | 140.6 | 88.25 | -4,941.1 | 3,480.3 | 1,182.0 | 882.0 | 299.98 | 3.940 | |
| 12,200.0 | 5,262.0 | 10,372.8 | 5,226.0 | 162.7 | 143.0 | 88.25 | -5,013.6 | 3,549.0 | 1,178.5 | 873.7 | 304.84 | 3.866 | |
| 12,300.0 | 5,262.0 | 10,472.7 | 5,226.0 | 165.1 | 145.4 | 88.24 | -5,086.1 | 3,617.8 | 1,175.1 | 865.4 | 309.70 | 3.794 | |
| 12,400.0 | 5,262.0 | 10,572.6 | 5,226.0 | 167.5 | 147.9 | 88.24 | -5,158.6 | 3,686.6 | 1,171.6 | 857.0 | 314.56 | 3.725 | |
| 12,500.0 | 5,262.0 | 10,672.6 | 5,226.0 | 170.0 | 150.3 | 88.23 | -5,231.1 | 3,755.3 | 1,168.1 | 848.7 | 319.42 | 3.657 | |
| 12,600.0 | 5,262.0 | 10,772.5 | 5,226.0 | 172.4 | 152.7 | 88.23 | -5,303.6 | 3,824.1 | 1,164.6 | 840.4 | 324.28 | 3.591 | |
| 12,700.0 | 5,262.0 | 10,872.5 | 5,226.0 | 174.8 | 155.2 | 88.22 | -5,376.1 | 3,892.9 | 1,161.2 | 832.0 | 329.15 | 3.528 | |
| 12,800.0 | 5,262.0 | 10,972.4 | 5,226.0 | 177.2 | 157.6 | 88.22 | -5,448.7 | 3,961.7 | 1,157.7 | 823.7 | 334.02 | 3.466 | |
| 12,900.0 | 5,262.0 | 11,072.3 | 5,226.0 | 179.7 | 160.0 | 88.21 | -5,521.2 | 4,030.4 | 1,154.2 | 815.3 | 338.88 | 3.406 | |
| 13,000.0 | 5,262.0 | 11,172.3 | 5,226.0 | 182.1 | 162.5 | 88.21 | -5,593.7 | 4,099.2 | 1,150.7 | 807.0 | 343.75 | 3.348 | |
| 13,100.0 | 5,262.0 | 11,272.2 | 5,226.0 | 184.5 | 164.9 | 88.20 | -5,666.2 | 4,168.0 | 1,147.3 | 798.7 | 348.62 | 3.291 | |
| 13,200.0 | 5,262.0 | 11,372.2 | 5,226.0 | 186.9 | 167.3 | 88.20 | -5,738.7 | 4,236.7 | 1,143.8 | 790.3 | 353.50 | 3.236 | |
| 13,300.0 | 5,262.0 | 11,472.1 | 5,226.0 | 189.4 | 169.8 | 88.19 | -5,811.2 | 4,305.5 | 1,140.3 | 782.0 | 358.37 | 3.182 | |
| 13,400.0 | 5,262.0 | 11,572.0 | 5,226.0 | 191.8 | 172.2 | 88.18 | -5,883.7 | 4,374.3 | 1,136.9 | 773.6 | 363.24 | 3.130 | |
| 13,500.0 | 5,262.0 | 11,672.0 | 5,226.0 | 194.2 | 174.7 | 88.18 | -5,956.3 | 4,443.1 | 1,133.4 | 765.3 | 368.12 | 3.079 | |
| 13,600.0 | 5,262.0 | 11,771.9 | 5,226.0 | 196.7 | 177.1 | 88.17 | -6,028.8 | 4,511.8 | 1,129.9 | 756.9 | 373.00 | 3.029 | |
| 13,700.0 | 5,262.0 | 11,871.9 | 5,226.0 | 199.1 | 179.6 | 88.17 | -6,101.3 | 4,580.6 | 1,126.4 | 748.6 | 377.87 | 2.981 | |

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | DJR Operating | **Local Co-ordinate Reference:** | Well # 108H |
| **Project:** | Betonnie Tsosie Unit | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Reference Site:** | M11 2308 Pad | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Original drilling | **Database:** | EDM |
| **Reference Design:** | APD | **Offset TVD Reference:** | Offset Datum |

**Offset Design** M11 2308 Pad - # 728H - Original drilling - APD — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD+IGRF — **Offset Well Error:** 0.0 usft

| Reference | | Offset | | Semi Major Axis | | | Offset Wellbore Centre | | Distance | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Measured Depth (usft) | Vertical Depth (usft) | Measured Depth (usft) | Vertical Depth (usft) | Reference (usft) | Offset (usft) | Highside Toolface (°) | +N/-S (usft) | +E/-W (usft) | Between Centres (usft) | Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
| 13,715.1 | 5,262.0 | 11,887.0 | 5,226.0 | 199.5 | 179.9 | 88.17 | -6,112.3 | 4,591.0 | 1,125.9 | 747.3 | 378.61 | 2.974 SF | |

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | DJR Operating | **Local Co-ordinate Reference:** | Well # 108H |
| **Project:** | Betonnie Tsosie Unit | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Reference Site:** | M11 2308 Pad | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Original drilling | **Database:** | EDM |
| **Reference Design:** | APD | **Offset TVD Reference:** | Offset Datum |

**Offset Design** M11 2308 Pad - P&A'd conductor - Abandoned - Abandoned — **Offset Site Error:** 0.0 usft

**Survey Program:** 40-MWD+IGRF — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 6.0 | 6.0 | 0.0 | 0.0 | 91.61 | -1.2 | 43.1 | 43.1 | | | | |
| 100.0 | 100.0 | 40.0 | 40.0 | 0.2 | 0.0 | 91.61 | -1.2 | 43.1 | 78.8 | 75.0 | 3.85 | 20.465 SF | |
| 200.0 | 200.0 | 40.0 | 40.0 | 0.5 | 0.0 | 91.61 | -1.2 | 43.1 | 171.5 | 167.0 | 4.46 | 38.447 | |
| 300.0 | 300.0 | 40.0 | 40.0 | 0.9 | 0.0 | 91.61 | -1.2 | 43.1 | 269.5 | 264.9 | 4.56 | 59.055 | |
| 400.0 | 400.0 | 40.0 | 40.0 | 1.2 | 0.0 | 91.61 | -1.2 | 43.1 | 368.5 | 363.9 | 4.61 | 79.946 | |
| 450.0 | 450.0 | 40.0 | 40.0 | 1.4 | 0.0 | 91.61 | -1.2 | 43.1 | 418.2 | 413.6 | 4.63 | 90.364 | |
| 500.0 | 500.0 | 40.0 | 40.0 | 1.6 | 0.0 | 96.77 | -1.2 | 43.1 | 468.0 | 463.4 | 4.65 | 100.725 | |
| 600.0 | 599.9 | 40.0 | 40.0 | 1.9 | 0.0 | 66.43 | -1.2 | 43.1 | 567.7 | 563.0 | 4.68 | 121.271 | |
| 700.0 | 699.5 | 40.0 | 40.0 | 2.3 | 0.0 | 42.33 | -1.2 | 43.1 | 667.3 | 662.6 | 4.72 | 141.511 | |
| 800.0 | 798.6 | 40.0 | 40.0 | 2.7 | 0.0 | 28.20 | -1.2 | 43.1 | 766.8 | 762.1 | 4.75 | 161.385 | |
| 900.0 | 897.1 | 40.0 | 40.0 | 3.1 | 0.0 | 20.08 | -1.2 | 43.1 | 866.0 | 861.3 | 4.79 | 180.837 | |
| 1,000.0 | 994.7 | 40.0 | 40.0 | 3.6 | 0.0 | 15.09 | -1.2 | 43.1 | 964.9 | 960.1 | 4.83 | 199.823 | |
| 1,090.4 | 1,082.1 | 40.0 | 40.0 | 4.0 | 0.0 | 12.07 | -1.2 | 43.1 | 1,054.0 | 1,049.1 | 4.87 | 216.587 | |
| 1,100.0 | 1,091.3 | 40.0 | 40.0 | 4.1 | 0.0 | 12.07 | -1.2 | 43.1 | 1,063.4 | 1,058.5 | 4.87 | 218.555 | |
| 1,200.0 | 1,187.4 | 40.0 | 40.0 | 4.6 | 0.0 | 12.07 | -1.2 | 43.1 | 1,161.9 | 1,156.9 | 4.93 | 235.903 | |
| 1,300.0 | 1,283.6 | 40.0 | 40.0 | 5.2 | 0.0 | 12.07 | -1.2 | 43.1 | 1,260.6 | 1,255.6 | 4.99 | 252.740 | |
| 1,400.0 | 1,379.7 | 40.0 | 40.0 | 5.8 | 0.0 | 12.07 | -1.2 | 43.1 | 1,359.5 | 1,354.4 | 5.05 | 269.033 | |
| 1,500.0 | 1,475.8 | 40.0 | 40.0 | 6.4 | 0.0 | 12.07 | -1.2 | 43.1 | 1,458.5 | 1,453.4 | 5.12 | 284.759 | |
| 1,600.0 | 1,571.9 | 40.0 | 40.0 | 7.0 | 0.0 | 12.07 | -1.2 | 43.1 | 1,557.7 | 1,552.5 | 5.19 | 299.905 | |
| 1,700.0 | 1,668.1 | 40.0 | 40.0 | 7.6 | 0.0 | 12.07 | -1.2 | 43.1 | 1,656.9 | 1,651.7 | 5.27 | 314.461 | |
| 1,800.0 | 1,764.2 | 40.0 | 40.0 | 8.2 | 0.0 | 12.07 | -1.2 | 43.1 | 1,756.3 | 1,750.9 | 5.35 | 328.425 | |
| 1,900.0 | 1,860.3 | 40.0 | 40.0 | 8.8 | 0.0 | 12.07 | -1.2 | 43.1 | 1,855.7 | 1,850.3 | 5.43 | 341.798 | |
| 2,000.0 | 1,956.4 | 40.0 | 40.0 | 9.4 | 0.0 | 12.07 | -1.2 | 43.1 | 1,955.2 | 1,949.7 | 5.51 | 354.587 | |
| 2,100.0 | 2,052.5 | 40.0 | 40.0 | 10.0 | 0.0 | 12.07 | -1.2 | 43.1 | 2,054.7 | 2,049.1 | 5.60 | 366.798 | |
| 2,200.0 | 2,148.7 | 40.0 | 40.0 | 10.6 | 0.0 | 12.07 | -1.2 | 43.1 | 2,154.3 | 2,148.6 | 5.69 | 378.441 | |
| 2,300.0 | 2,244.8 | 40.0 | 40.0 | 11.2 | 0.0 | 12.07 | -1.2 | 43.1 | 2,253.9 | 2,248.1 | 5.79 | 389.528 | |
| 2,400.0 | 2,340.9 | 40.0 | 40.0 | 11.9 | 0.0 | 12.07 | -1.2 | 43.1 | 2,353.6 | 2,347.7 | 5.88 | 400.073 | |
| 2,500.0 | 2,437.0 | 40.0 | 40.0 | 12.5 | 0.0 | 12.07 | -1.2 | 43.1 | 2,453.2 | 2,447.2 | 5.98 | 410.089 | |
| 2,600.0 | 2,533.1 | 40.0 | 40.0 | 13.1 | 0.0 | 12.07 | -1.2 | 43.1 | 2,552.9 | 2,546.8 | 6.08 | 419.590 | |
| 2,700.0 | 2,629.3 | 40.0 | 40.0 | 13.7 | 0.0 | 12.07 | -1.2 | 43.1 | 2,652.7 | 2,646.5 | 6.19 | 428.593 | |
| 2,800.0 | 2,725.4 | 40.0 | 40.0 | 14.3 | 0.0 | 12.07 | -1.2 | 43.1 | 2,752.4 | 2,746.1 | 6.30 | 437.112 | |
| 2,900.0 | 2,821.5 | 40.0 | 40.0 | 15.0 | 0.0 | 12.07 | -1.2 | 43.1 | 2,852.2 | 2,845.7 | 6.41 | 445.163 | |
| 3,000.0 | 2,917.6 | 40.0 | 40.0 | 15.6 | 0.0 | 12.07 | -1.2 | 43.1 | 2,951.9 | 2,945.4 | 6.52 | 452.763 | |
| 3,100.0 | 3,013.7 | 40.0 | 40.0 | 16.2 | 0.0 | 12.07 | -1.2 | 43.1 | 3,051.7 | 3,045.1 | 6.64 | 459.926 | |
| 3,200.0 | 3,109.9 | 40.0 | 40.0 | 16.8 | 0.0 | 12.07 | -1.2 | 43.1 | 3,151.5 | 3,144.8 | 6.75 | 466.668 | |
| 3,300.0 | 3,206.0 | 40.0 | 40.0 | 17.5 | 0.0 | 12.07 | -1.2 | 43.1 | 3,251.3 | 3,244.5 | 6.87 | 473.005 | |
| 3,400.0 | 3,302.1 | 40.0 | 40.0 | 18.1 | 0.0 | 12.07 | -1.2 | 43.1 | 3,351.2 | 3,344.2 | 7.00 | 478.951 | |
| 3,500.0 | 3,398.2 | 40.0 | 40.0 | 18.7 | 0.0 | 12.07 | -1.2 | 43.1 | 3,451.0 | 3,443.9 | 7.12 | 484.521 | |
| 3,600.0 | 3,494.3 | 40.0 | 40.0 | 19.3 | 0.0 | 12.07 | -1.2 | 43.1 | 3,550.8 | 3,543.6 | 7.25 | 489.730 | |
| 3,700.0 | 3,590.5 | 40.0 | 40.0 | 20.0 | 0.0 | 12.07 | -1.2 | 43.1 | 3,650.7 | 3,643.3 | 7.38 | 494.590 | |
| 3,800.0 | 3,686.6 | 40.0 | 40.0 | 20.6 | 0.0 | 12.07 | -1.2 | 43.1 | 3,750.6 | 3,743.1 | 7.51 | 499.117 | |
| 3,900.0 | 3,782.7 | 40.0 | 40.0 | 21.2 | 0.0 | 12.07 | -1.2 | 43.1 | 3,850.4 | 3,842.8 | 7.65 | 503.324 | |
| 4,000.0 | 3,878.8 | 40.0 | 40.0 | 21.8 | 0.0 | 12.07 | -1.2 | 43.1 | 3,950.3 | 3,942.5 | 7.79 | 507.222 | |
| 4,100.0 | 3,975.0 | 40.0 | 40.0 | 22.5 | 0.0 | 12.07 | -1.2 | 43.1 | 4,050.2 | 4,042.3 | 7.93 | 510.825 | |
| 4,200.0 | 4,071.1 | 40.0 | 40.0 | 23.1 | 0.0 | 12.07 | -1.2 | 43.1 | 4,150.1 | 4,142.0 | 8.07 | 514.144 | |
| 4,300.0 | 4,167.2 | 40.0 | 40.0 | 23.7 | 0.0 | 12.07 | -1.2 | 43.1 | 4,250.0 | 4,241.8 | 8.22 | 517.192 | |
| 4,400.0 | 4,263.3 | 40.0 | 40.0 | 24.3 | 0.0 | 12.07 | -1.2 | 43.1 | 4,349.9 | 4,341.5 | 8.37 | 519.979 | |
| 4,500.0 | 4,359.4 | 40.0 | 40.0 | 25.0 | 0.0 | 12.07 | -1.2 | 43.1 | 4,449.8 | 4,441.3 | 8.52 | 522.517 | |
| 4,600.0 | 4,455.6 | 40.0 | 40.0 | 25.6 | 0.0 | 12.07 | -1.2 | 43.1 | 4,549.7 | 4,541.0 | 8.67 | 524.816 | |
| 4,614.6 | 4,469.6 | 40.0 | 40.0 | 25.7 | 0.0 | 12.07 | -1.2 | 43.1 | 4,564.2 | 4,555.5 | 8.69 | 525.131 | |
| 4,650.0 | 4,503.8 | 40.0 | 40.0 | 25.9 | 0.0 | 100.66 | -1.2 | 43.1 | 4,599.7 | 4,590.9 | 8.75 | 525.861 | |
| 4,700.0 | 4,552.9 | 40.0 | 40.0 | 26.2 | 0.0 | 122.59 | -1.2 | 43.1 | 4,649.5 | 4,640.7 | 8.82 | 526.920 | |

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | DJR Operating | **Local Co-ordinate Reference:** | Well # 108H |
| **Project:** | Betonnie Tsosie Unit | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Reference Site:** | M11 2308 Pad | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Original drilling | **Database:** | EDM |
| **Reference Design:** | APD | **Offset TVD Reference:** | Offset Datum |

**Offset Design** M11 2308 Pad - P&A'd conductor - Abandoned - Abandoned — **Offset Site Error:** 0.0 usft

**Survey Program:** 40-MWD+IGRF — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,750.0 | 4,602.4 | 40.0 | 40.0 | 26.3 | 0.0 | 102.60 | -1.2 | 43.1 | 4,699.0 | 4,690.1 | 8.90 | 528.117 | |
| 4,800.0 | 4,652.0 | 40.0 | 40.0 | 26.5 | 0.0 | 67.19 | -1.2 | 43.1 | 4,747.9 | 4,738.9 | 8.97 | 529.437 | |
| 4,850.0 | 4,701.5 | 40.0 | 40.0 | 26.6 | 0.0 | 40.89 | -1.2 | 43.1 | 4,795.7 | 4,786.7 | 9.03 | 530.836 | |
| 4,900.0 | 4,750.6 | 40.0 | 40.0 | 26.6 | 0.0 | 27.41 | -1.2 | 43.1 | 4,842.4 | 4,833.3 | 9.10 | 532.262 | |
| 4,950.0 | 4,799.0 | 40.0 | 40.0 | 26.6 | 0.0 | 20.20 | -1.2 | 43.1 | 4,887.6 | 4,878.5 | 9.16 | 533.647 | |
| 5,000.0 | 4,846.2 | 40.0 | 40.0 | 26.6 | 0.0 | 15.92 | -1.2 | 43.1 | 4,931.1 | 4,921.9 | 9.22 | 534.911 | |
| 5,050.0 | 4,892.2 | 40.0 | 40.0 | 26.5 | 0.0 | 13.14 | -1.2 | 43.1 | 4,972.7 | 4,963.5 | 9.28 | 535.953 | |
| 5,100.0 | 4,936.5 | 40.0 | 40.0 | 26.5 | 0.0 | 11.22 | -1.2 | 43.1 | 5,012.2 | 5,002.9 | 9.34 | 536.654 | |
| 5,150.0 | 4,979.0 | 40.0 | 40.0 | 26.3 | 0.0 | 9.83 | -1.2 | 43.1 | 5,049.4 | 5,040.0 | 9.41 | 536.878 | |
| 5,200.0 | 5,019.3 | 40.0 | 40.0 | 26.2 | 0.0 | 8.78 | -1.2 | 43.1 | 5,084.1 | 5,074.6 | 9.48 | 536.472 | |
| 5,250.0 | 5,057.1 | 40.0 | 40.0 | 26.0 | 0.0 | 7.98 | -1.2 | 43.1 | 5,116.1 | 5,106.5 | 9.56 | 535.279 | |
| 5,300.0 | 5,092.4 | 40.0 | 40.0 | 25.9 | 0.0 | 7.35 | -1.2 | 43.1 | 5,145.3 | 5,135.7 | 9.65 | 533.143 | |
| 5,350.0 | 5,124.8 | 40.0 | 40.0 | 25.7 | 0.0 | 6.85 | -1.2 | 43.1 | 5,171.7 | 5,161.9 | 9.76 | 529.926 | |
| 5,400.0 | 5,154.1 | 40.0 | 40.0 | 25.5 | 0.0 | 6.45 | -1.2 | 43.1 | 5,194.9 | 5,185.0 | 9.89 | 525.521 | |
| 5,450.0 | 5,180.2 | 40.0 | 40.0 | 25.3 | 0.0 | 6.13 | -1.2 | 43.1 | 5,215.1 | 5,205.0 | 10.03 | 519.865 | |
| 5,500.0 | 5,202.9 | 40.0 | 40.0 | 25.2 | 0.0 | 5.87 | -1.2 | 43.1 | 5,231.9 | 5,221.7 | 10.20 | 512.946 | |
| 5,550.0 | 5,222.1 | 40.0 | 40.0 | 25.0 | 0.0 | 5.67 | -1.2 | 43.1 | 5,245.5 | 5,235.1 | 10.39 | 504.814 | |
| 5,600.0 | 5,237.6 | 40.0 | 40.0 | 24.9 | 0.0 | 5.52 | -1.2 | 43.1 | 5,255.8 | 5,245.2 | 10.61 | 495.573 | |
| 5,650.0 | 5,249.4 | 40.0 | 40.0 | 24.8 | 0.0 | 5.40 | -1.2 | 43.1 | 5,262.6 | 5,251.7 | 10.84 | 485.373 | |
| 5,700.0 | 5,257.3 | 40.0 | 40.0 | 24.8 | 0.0 | 5.33 | -1.2 | 43.1 | 5,266.0 | 5,254.9 | 11.10 | 474.403 | |
| 5,750.0 | 5,261.4 | 40.0 | 40.0 | 24.8 | 0.0 | 5.28 | -1.2 | 43.1 | 5,265.9 | 5,254.5 | 11.38 | 462.867 | |
| 5,777.3 | 5,262.0 | 40.0 | 40.0 | 24.8 | 0.0 | 5.27 | -1.2 | 43.1 | 5,264.4 | 5,252.9 | 11.54 | 456.373 | |
| 5,800.0 | 5,262.0 | 40.0 | 40.0 | 24.8 | 0.0 | 5.27 | -1.2 | 43.1 | 5,262.8 | 5,251.1 | 11.67 | 451.000 | |
| 5,900.0 | 5,262.0 | 40.0 | 40.0 | 25.2 | 0.0 | 5.27 | -1.2 | 43.1 | 5,256.8 | 5,244.6 | 12.29 | 427.654 | |
| 6,000.0 | 5,262.0 | 40.0 | 40.0 | 25.8 | 0.0 | 5.27 | -1.2 | 43.1 | 5,252.8 | 5,239.8 | 12.97 | 405.112 | |
| 6,100.0 | 5,262.0 | 40.0 | 40.0 | 26.7 | 0.0 | 5.27 | -1.2 | 43.1 | 5,250.6 | 5,236.9 | 13.68 | 383.791 | |
| 6,163.7 | 5,262.0 | 40.0 | 40.0 | 27.4 | 0.0 | 5.27 | -1.2 | 43.1 | 5,250.2 | 5,236.1 | 14.16 | 370.884 | |
| 6,200.0 | 5,262.0 | 40.0 | 40.0 | 27.8 | 0.0 | 5.27 | -1.2 | 43.1 | 5,250.4 | 5,235.9 | 14.43 | 363.906 | |
| 6,300.0 | 5,262.0 | 40.0 | 40.0 | 29.1 | 0.0 | 5.27 | -1.2 | 43.1 | 5,252.0 | 5,236.8 | 15.20 | 345.535 | |
| 6,400.0 | 5,262.0 | 40.0 | 40.0 | 30.6 | 0.0 | 5.27 | -1.2 | 43.1 | 5,255.5 | 5,239.6 | 15.99 | 328.667 | |
| 6,500.0 | 5,262.0 | 40.0 | 40.0 | 32.2 | 0.0 | 5.27 | -1.2 | 43.1 | 5,261.0 | 5,244.2 | 16.80 | 313.242 | |
| 6,600.0 | 5,262.0 | 40.0 | 40.0 | 33.8 | 0.0 | 5.27 | -1.2 | 43.1 | 5,268.3 | 5,250.7 | 17.61 | 299.171 | |
| 6,700.0 | 5,262.0 | 40.0 | 40.0 | 35.6 | 0.0 | 5.27 | -1.2 | 43.1 | 5,277.6 | 5,259.1 | 18.43 | 286.351 | |
| 6,800.0 | 5,262.0 | 40.0 | 40.0 | 37.5 | 0.0 | 5.27 | -1.2 | 43.1 | 5,288.7 | 5,269.4 | 19.25 | 274.679 | |
| 6,900.0 | 5,262.0 | 40.0 | 40.0 | 39.4 | 0.0 | 5.27 | -1.2 | 43.1 | 5,301.6 | 5,281.5 | 20.08 | 264.052 | |
| 7,000.0 | 5,262.0 | 40.0 | 40.0 | 41.4 | 0.0 | 5.27 | -1.2 | 43.1 | 5,316.4 | 5,295.5 | 20.90 | 254.376 | |
| 7,100.0 | 5,262.0 | 40.0 | 40.0 | 43.4 | 0.0 | 5.27 | -1.2 | 43.1 | 5,333.1 | 5,311.4 | 21.72 | 245.561 | |
| 7,200.0 | 5,262.0 | 40.0 | 40.0 | 45.4 | 0.0 | 5.27 | -1.2 | 43.1 | 5,351.5 | 5,329.0 | 22.53 | 237.526 | |
| 7,300.0 | 5,262.0 | 40.0 | 40.0 | 47.5 | 0.0 | 5.27 | -1.2 | 43.1 | 5,371.8 | 5,348.5 | 23.34 | 230.199 | |
| 7,400.0 | 5,262.0 | 40.0 | 40.0 | 49.7 | 0.0 | 5.27 | -1.2 | 43.1 | 5,393.8 | 5,369.7 | 24.13 | 223.513 | |
| 7,500.0 | 5,262.0 | 40.0 | 40.0 | 51.8 | 0.0 | 5.27 | -1.2 | 43.1 | 5,417.6 | 5,392.7 | 24.92 | 217.410 | |
| 7,600.0 | 5,262.0 | 40.0 | 40.0 | 54.0 | 0.0 | 5.27 | -1.2 | 43.1 | 5,443.2 | 5,417.5 | 25.70 | 211.837 | |
| 7,700.0 | 5,262.0 | 40.0 | 40.0 | 56.2 | 0.0 | 5.27 | -1.2 | 43.1 | 5,470.4 | 5,443.9 | 26.46 | 206.746 | |
| 7,800.0 | 5,262.0 | 40.0 | 40.0 | 58.4 | 0.0 | 5.27 | -1.2 | 43.1 | 5,499.3 | 5,472.1 | 27.21 | 202.095 | |
| 7,900.0 | 5,262.0 | 40.0 | 40.0 | 60.7 | 0.0 | 5.27 | -1.2 | 43.1 | 5,529.9 | 5,502.0 | 27.95 | 197.847 | |
| 8,000.0 | 5,262.0 | 40.0 | 40.0 | 62.9 | 0.0 | 5.27 | -1.2 | 43.1 | 5,562.1 | 5,533.4 | 28.68 | 193.966 | |
| 8,100.0 | 5,262.0 | 40.0 | 40.0 | 65.2 | 0.0 | 5.27 | -1.2 | 43.1 | 5,595.9 | 5,566.5 | 29.39 | 190.423 | |
| 8,200.0 | 5,262.0 | 40.0 | 40.0 | 67.5 | 0.0 | 5.27 | -1.2 | 43.1 | 5,631.3 | 5,601.2 | 30.08 | 187.190 | |
| 8,300.0 | 5,262.0 | 40.0 | 40.0 | 69.8 | 0.0 | 5.27 | -1.2 | 43.1 | 5,668.2 | 5,637.5 | 30.77 | 184.242 | |
| 8,400.0 | 5,262.0 | 40.0 | 40.0 | 72.1 | 0.0 | 5.27 | -1.2 | 43.1 | 5,706.7 | 5,675.2 | 31.43 | 181.557 | |
| 8,500.0 | 5,262.0 | 40.0 | 40.0 | 74.4 | 0.0 | 5.27 | -1.2 | 43.1 | 5,746.6 | 5,714.5 | 32.08 | 179.116 | |
| 8,600.0 | 5,262.0 | 40.0 | 40.0 | 76.7 | 0.0 | 5.27 | -1.2 | 43.1 | 5,788.0 | 5,755.3 | 32.72 | 176.899 | |

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

# Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | DJR Operating | **Local Co-ordinate Reference:** | Well # 108H |
| **Project:** | Betonnie Tsosie Unit | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Reference Site:** | M11 2308 Pad | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Original drilling | **Database:** | EDM |
| **Reference Design:** | APD | **Offset TVD Reference:** | Offset Datum |

**Offset Design** M11 2308 Pad - P&A'd conductor - Abandoned - Abandoned — **Offset Site Error:** 0.0 usft

**Survey Program:** 40-MWD+IGRF — **Offset Well Error:** 0.0 usft

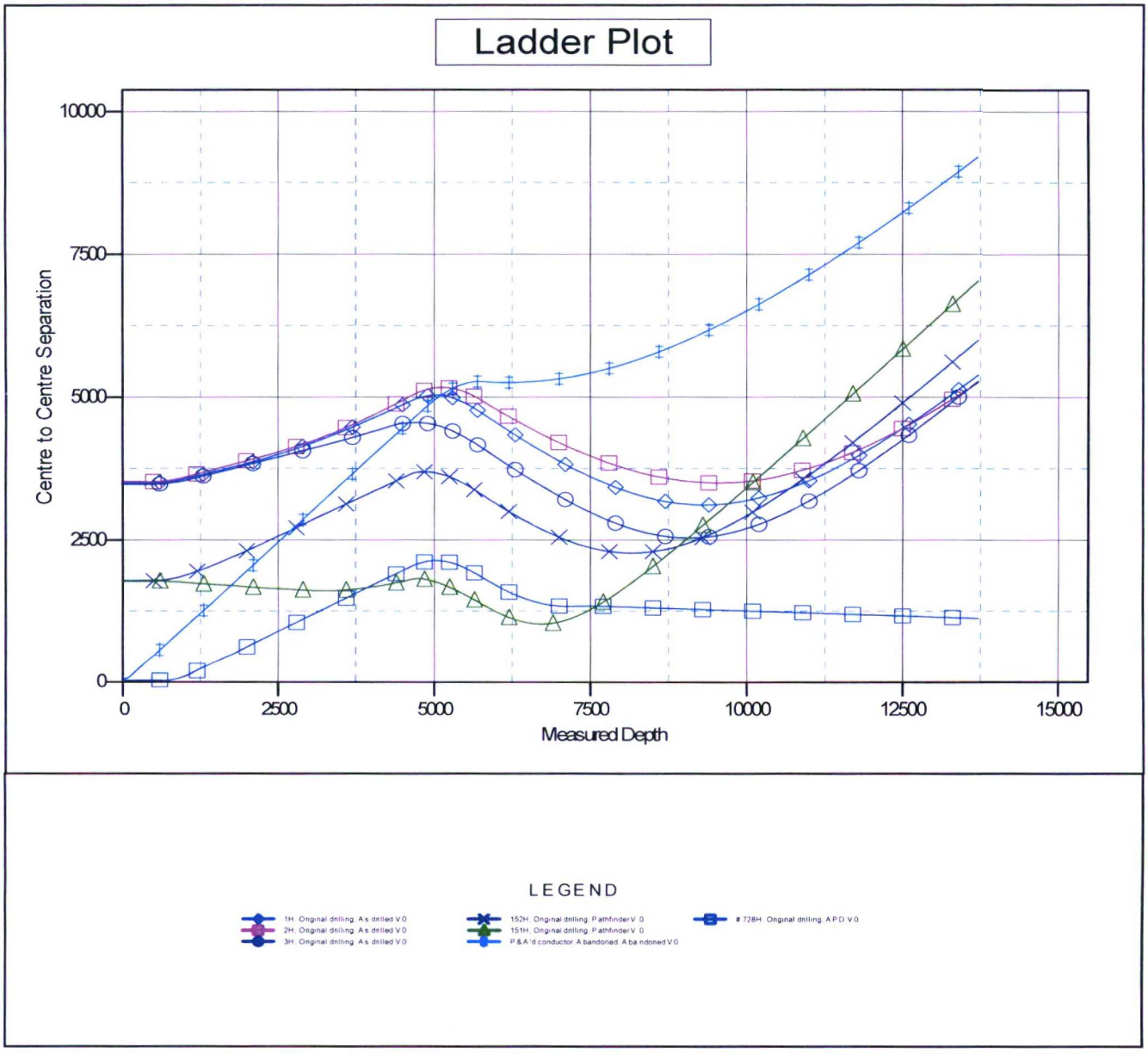
| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8,700.0 | 5,262.0 | 40.0 | 40.0 | 79.0 | 0.0 | 5.27 | -1.2 | 43.1 | 5,830.8 | 5,797.4 | 33.34 | 174.890 | |
| 8,800.0 | 5,262.0 | 40.0 | 40.0 | 81.3 | 0.0 | 5.27 | -1.2 | 43.1 | 5,875.0 | 5,841.0 | 33.94 | 173.075 | |
| 8,900.0 | 5,262.0 | 40.0 | 40.0 | 83.7 | 0.0 | 5.27 | -1.2 | 43.1 | 5,920.5 | 5,886.0 | 34.53 | 171.439 | |
| 9,000.0 | 5,262.0 | 40.0 | 40.0 | 86.0 | 0.0 | 5.27 | -1.2 | 43.1 | 5,967.4 | 5,932.3 | 35.11 | 169.970 | |
| 9,100.0 | 5,262.0 | 40.0 | 40.0 | 88.4 | 0.0 | 5.27 | -1.2 | 43.1 | 6,015.6 | 5,979.9 | 35.67 | 168.657 | |
| 9,200.0 | 5,262.0 | 40.0 | 40.0 | 90.7 | 0.0 | 5.27 | -1.2 | 43.1 | 6,065.0 | 6,028.8 | 36.21 | 167.490 | |
| 9,300.0 | 5,262.0 | 40.0 | 40.0 | 93.1 | 0.0 | 5.27 | -1.2 | 43.1 | 6,115.7 | 6,078.9 | 36.74 | 166.458 | |
| 9,400.0 | 5,262.0 | 40.0 | 40.0 | 95.5 | 0.0 | 5.27 | -1.2 | 43.1 | 6,167.6 | 6,130.3 | 37.25 | 165.554 | |
| 9,500.0 | 5,262.0 | 40.0 | 40.0 | 97.8 | 0.0 | 5.27 | -1.2 | 43.1 | 6,220.6 | 6,182.9 | 37.75 | 164.768 | |
| 9,600.0 | 5,262.0 | 40.0 | 40.0 | 100.2 | 0.0 | 5.27 | -1.2 | 43.1 | 6,274.8 | 6,236.6 | 38.24 | 164.095 | |
| 9,700.0 | 5,262.0 | 40.0 | 40.0 | 102.6 | 0.0 | 5.27 | -1.2 | 43.1 | 6,330.1 | 6,291.4 | 38.71 | 163.526 | |
| 9,800.0 | 5,262.0 | 40.0 | 40.0 | 105.0 | 0.0 | 5.27 | -1.2 | 43.1 | 6,386.5 | 6,347.4 | 39.17 | 163.056 | |
| 9,900.0 | 5,262.0 | 40.0 | 40.0 | 107.3 | 0.0 | 5.27 | -1.2 | 43.1 | 6,444.0 | 6,404.4 | 39.61 | 162.678 | |
| 10,000.0 | 5,262.0 | 40.0 | 40.0 | 109.7 | 0.0 | 5.27 | -1.2 | 43.1 | 6,502.5 | 6,462.5 | 40.04 | 162.388 | |
| 10,100.0 | 5,262.0 | 40.0 | 40.0 | 112.1 | 0.0 | 5.27 | -1.2 | 43.1 | 6,562.0 | 6,521.5 | 40.46 | 162.181 | |
| 10,200.0 | 5,262.0 | 40.0 | 40.0 | 114.5 | 0.0 | 5.27 | -1.2 | 43.1 | 6,622.5 | 6,581.6 | 40.87 | 162.051 | |
| 10,300.0 | 5,262.0 | 40.0 | 40.0 | 116.9 | 0.0 | 5.27 | -1.2 | 43.1 | 6,683.9 | 6,642.6 | 41.26 | 161.995 | |
| 10,400.0 | 5,262.0 | 40.0 | 40.0 | 119.3 | 0.0 | 5.27 | -1.2 | 43.1 | 6,746.2 | 6,704.6 | 41.64 | 162.008 | |
| 10,500.0 | 5,262.0 | 40.0 | 40.0 | 121.7 | 0.0 | 5.27 | -1.2 | 43.1 | 6,809.5 | 6,767.5 | 42.01 | 162.087 | |
| 10,600.0 | 5,262.0 | 40.0 | 40.0 | 124.1 | 0.0 | 5.27 | -1.2 | 43.1 | 6,873.6 | 6,831.2 | 42.37 | 162.228 | |
| 10,700.0 | 5,262.0 | 40.0 | 40.0 | 126.5 | 0.0 | 5.27 | -1.2 | 43.1 | 6,938.5 | 6,895.8 | 42.72 | 162.428 | |
| 10,800.0 | 5,262.0 | 40.0 | 40.0 | 128.9 | 0.0 | 5.27 | -1.2 | 43.1 | 7,004.3 | 6,961.3 | 43.05 | 162.684 | |
| 10,900.0 | 5,262.0 | 40.0 | 40.0 | 131.3 | 0.0 | 5.27 | -1.2 | 43.1 | 7,070.9 | 7,027.5 | 43.38 | 162.993 | |
| 11,000.0 | 5,262.0 | 40.0 | 40.0 | 133.7 | 0.0 | 5.27 | -1.2 | 43.1 | 7,138.3 | 7,094.6 | 43.70 | 163.352 | |
| 11,100.0 | 5,262.0 | 40.0 | 40.0 | 136.1 | 0.0 | 5.27 | -1.2 | 43.1 | 7,206.4 | 7,162.4 | 44.01 | 163.760 | |
| 11,200.0 | 5,262.0 | 40.0 | 40.0 | 138.5 | 0.0 | 5.27 | -1.2 | 43.1 | 7,275.3 | 7,231.0 | 44.30 | 164.213 | |
| 11,300.0 | 5,262.0 | 40.0 | 40.0 | 140.9 | 0.0 | 5.27 | -1.2 | 43.1 | 7,344.9 | 7,300.3 | 44.59 | 164.709 | |
| 11,400.0 | 5,262.0 | 40.0 | 40.0 | 143.4 | 0.0 | 5.27 | -1.2 | 43.1 | 7,415.1 | 7,370.3 | 44.87 | 165.246 | |
| 11,500.0 | 5,262.0 | 40.0 | 40.0 | 145.8 | 0.0 | 5.27 | -1.2 | 43.1 | 7,486.1 | 7,440.9 | 45.15 | 165.823 | |
| 11,600.0 | 5,262.0 | 40.0 | 40.0 | 148.2 | 0.0 | 5.27 | -1.2 | 43.1 | 7,557.7 | 7,512.3 | 45.41 | 166.437 | |
| 11,700.0 | 5,262.0 | 40.0 | 40.0 | 150.6 | 0.0 | 5.27 | -1.2 | 43.1 | 7,629.9 | 7,584.3 | 45.66 | 167.087 | |
| 11,800.0 | 5,262.0 | 40.0 | 40.0 | 153.0 | 0.0 | 5.27 | -1.2 | 43.1 | 7,702.8 | 7,656.9 | 45.91 | 167.771 | |
| 11,900.0 | 5,262.0 | 40.0 | 40.0 | 155.4 | 0.0 | 5.27 | -1.2 | 43.1 | 7,776.3 | 7,730.1 | 46.15 | 168.487 | |
| 12,000.0 | 5,262.0 | 40.0 | 40.0 | 157.9 | 0.0 | 5.27 | -1.2 | 43.1 | 7,850.3 | 7,803.9 | 46.39 | 169.234 | |
| 12,100.0 | 5,262.0 | 40.0 | 40.0 | 160.3 | 0.0 | 5.27 | -1.2 | 43.1 | 7,925.0 | 7,878.3 | 46.61 | 170.011 | |
| 12,200.0 | 5,262.0 | 40.0 | 40.0 | 162.7 | 0.0 | 5.27 | -1.2 | 43.1 | 8,000.1 | 7,953.3 | 46.83 | 170.817 | |
| 12,300.0 | 5,262.0 | 40.0 | 40.0 | 165.1 | 0.0 | 5.27 | -1.2 | 43.1 | 8,075.9 | 8,028.8 | 47.05 | 171.649 | |
| 12,400.0 | 5,262.0 | 40.0 | 40.0 | 167.5 | 0.0 | 5.27 | -1.2 | 43.1 | 8,152.1 | 8,104.9 | 47.26 | 172.507 | |
| 12,500.0 | 5,262.0 | 40.0 | 40.0 | 170.0 | 0.0 | 5.27 | -1.2 | 43.1 | 8,228.9 | 8,181.4 | 47.46 | 173.390 | |
| 12,600.0 | 5,262.0 | 40.0 | 40.0 | 172.4 | 0.0 | 5.27 | -1.2 | 43.1 | 8,306.1 | 8,258.5 | 47.66 | 174.296 | |
| 12,700.0 | 5,262.0 | 40.0 | 40.0 | 174.8 | 0.0 | 5.27 | -1.2 | 43.1 | 8,383.8 | 8,336.0 | 47.85 | 175.226 | |
| 12,800.0 | 5,262.0 | 40.0 | 40.0 | 177.2 | 0.0 | 5.27 | -1.2 | 43.1 | 8,462.0 | 8,414.0 | 48.03 | 176.176 | |
| 12,900.0 | 5,262.0 | 40.0 | 40.0 | 179.7 | 0.0 | 5.27 | -1.2 | 43.1 | 8,540.7 | 8,492.5 | 48.21 | 177.148 | |
| 13,000.0 | 5,262.0 | 40.0 | 40.0 | 182.1 | 0.0 | 5.27 | -1.2 | 43.1 | 8,619.8 | 8,571.4 | 48.39 | 178.139 | |
| 13,100.0 | 5,262.0 | 40.0 | 40.0 | 184.5 | 0.0 | 5.27 | -1.2 | 43.1 | 8,699.3 | 8,650.7 | 48.56 | 179.150 | |
| 13,200.0 | 5,262.0 | 40.0 | 40.0 | 186.9 | 0.0 | 5.27 | -1.2 | 43.1 | 8,779.2 | 8,730.5 | 48.73 | 180.178 | |
| 13,300.0 | 5,262.0 | 40.0 | 40.0 | 189.4 | 0.0 | 5.27 | -1.2 | 43.1 | 8,859.6 | 8,810.7 | 48.89 | 181.224 | |
| 13,400.0 | 5,262.0 | 40.0 | 40.0 | 191.8 | 0.0 | 5.27 | -1.2 | 43.1 | 8,940.3 | 8,891.3 | 49.05 | 182.287 | |
| 13,500.0 | 5,262.0 | 40.0 | 40.0 | 194.2 | 0.0 | 5.27 | -1.2 | 43.1 | 9,021.5 | 8,972.3 | 49.20 | 183.366 | |
| 13,600.0 | 5,262.0 | 40.0 | 40.0 | 196.7 | 0.0 | 5.27 | -1.2 | 43.1 | 9,103.0 | 9,053.6 | 49.35 | 184.460 | |
| 13,700.0 | 5,262.0 | 40.0 | 40.0 | 199.1 | 0.0 | 5.27 | -1.2 | 43.1 | 9,184.8 | 9,135.3 | 49.50 | 185.569 | |
| 13,715.1 | 5,262.0 | 40.0 | 40.0 | 199.5 | 0.0 | 5.27 | -1.2 | 43.1 | 9,197.3 | 9,147.8 | 49.52 | 185.738 | |

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

## Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | DJR Operating | **Local Co-ordinate Reference:** | Well # 108H |
| **Project:** | Betonnie Tsosie Unit | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Reference Site:** | M11 2308 Pad | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Original drilling | **Database:** | EDM |
| **Reference Design:** | APD | **Offset TVD Reference:** | Offset Datum |

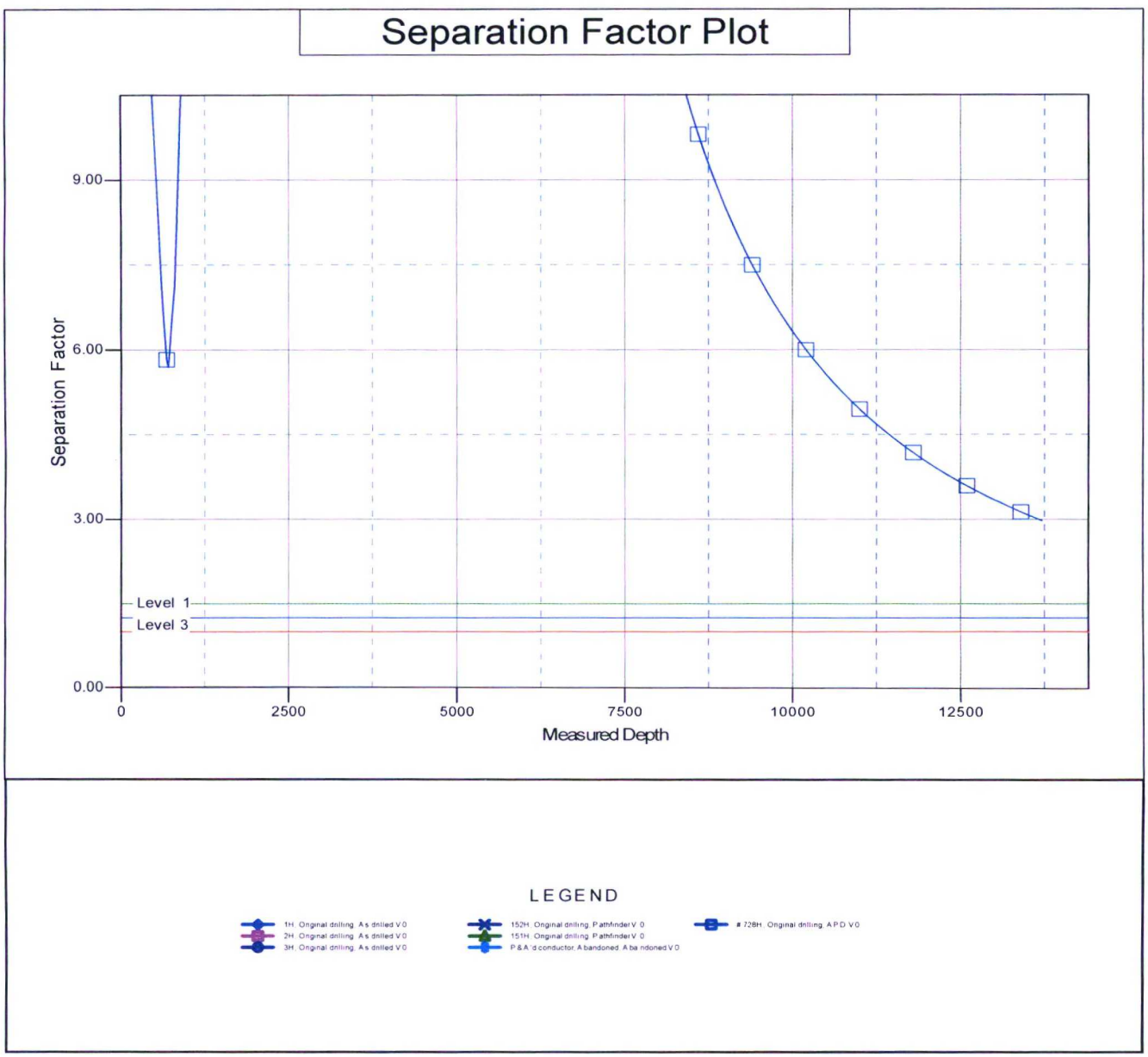
| | |
|---|---|
| Reference Depths are relative to RKB @ 6919.0usft (AD 920) | Coordinates are relative to: # 108H |
| Offset Depths are relative to Offset Datum | Coordinate System is US State Plane 1983, New Mexico Western Zone |
| Central Meridian is -107.83333333 | Grid Convergence at Surface is: 0.10° |



## Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | DJR Operating | **Local Co-ordinate Reference:** | Well # 108H |
| **Project:** | Betonnie Tsosie Unit | **TVD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Reference Site:** | M11 2308 Pad | **MD Reference:** | RKB @ 6919.0usft (AD 920) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | # 108H | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | Original drilling | **Database:** | EDM |
| **Reference Design:** | APD | **Offset TVD Reference:** | Offset Datum |

| | |
|---|---|
| Reference Depths are relative to RKB @ 6919.0usft (AD 920) | Coordinates are relative to: # 108H |
| Offset Depths are relative to Offset Datum | Coordinate System is US State Plane 1983, New Mexico Western Zone |
| Central Meridian is -107.83333333 | Grid Convergence at Surface is: 0.10° |




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

*DJR OPERATING, LLC*

BETONNIE TSOSIE WASH UNIT #108H
341' FSL & 182' FWL
LOCATED IN THE SW/4 SW/4 OF SECTION 11, T23N, R8W, N.M.P.M.,
SAN JUAN COUNTY, NEW MEXICO

## DIRECTIONS

1) FROM THE INTERSECTION OF HWY 64 & HWY 550 IN BLOOMFIELD, GO SOUTH ON HWY 550, 39.0 MILES TO ROAD 7900 (INDIAN ROUTE 7061) (M.P. 112.6).
2) TURN RIGHT AND GO 1.7 MILES TO A DIRT ROAD WITH CATTLE GUARD.
3) TURN LEFT AND GO 0.6 MILES TO "Y" INTERSECTION.
4) TURN LEFT AND GO 0.9 MILES TO "T" INTERSECTION.
5) TURN LEFT AND GO 1.1 MILES TO ABANDONED 2-TRACK TO BE UPGRADED.

WELL FLAG LOCATED AT LAT. 36.235220° N, LONG.107.659374° W (NAD 83).

**CCI**

**CHENAULT CONSULTING INC.**

DJR OPERATING, LLC

**DATE: 02/21/19**
**DRAWN BY: GRR**