

State of New Mexico
Energy, Minerals and Natural Resources Department

Michelle Lujan Grisham
Governor

Sarah Cottrell Propst
Cabinet Secretary

Todd E. Leahy, JD, PhD
Deputy Secretary

Adrienne Sandoval, Division Director
Oil Conservation Division



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

Operator Signature Date: 2/6/2020

Operator: DJR **Well Name and Number:** Nageezi Unit 608H

API#: 30-045-38191 , **Section:** 33, **Township:** 24N, **Range:** 9 W

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

☒ Notify appropriate OCD district office 24hrs prior to spud, casing & cement.

☒ If cement does not circulate on any casing string or stage tool a CBL will be required. Contact the regulatory agencies prior to proceeding.

☒ Hold C-104 for directional survey & "As Drilled" Plat

☐ Hold C-104 for: ☐ NSL, ☐ NSP, ☐ DHC, ☐ 5.9 Compliance

☐ Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned

☒ Regarding the use of a pit, closed loop system or below grade tank, the operator must comply with the following as applicable:

- A pit requires a complete C-144 be submitted and approved prior to the construction or use of the pit, pursuant to 19.15.17.8.A
- A closed loop system requires notification prior to use, pursuant to 19.15.17.9.A
- A below grade tank requires a registration be filed prior to the construction or use of the below grade tank, pursuant to 19.15.17.8.C

☒ Any change of plans must adhere to 19.15.7.14(A)(1). Field operation changes requiring immediate approval must be approved by the District Office prior to implementation.

☒ Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the freshwater zone or zones and shall immediately set in cement the water protection string

☒ Regarding Hydraulic Fracturing, review EPA Underground Injection Control Guidance 84

☒ Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.

☒ Well-bore communication is regulated under 19.15.29 NMAC. This requires well-bore Communication to be reported in accordance with 19.15.29.8.



NMOCD Approved by Signature

12/4/2020
Date

Form 3160-3
(June 2015)NMOCD REC'D
12/1/20FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NMNM012374
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☒ Multiple Zone		7. If Unit or CA Agreement, Name and No. NMNM 132981A
2. Name of Operator DJR OPERATING LLC		8. Lease Name and Well No. NAGEEZI UNIT 608H
3a. Address 1700 LINCOLN STREET, SUITE 2800, DENVER, CO 802	3b. Phone No. (include area code) (505) 632-3476	9. API Well No. 30-045-38191
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface SENE / 1354 FNL / 544 FEL / LAT 36.274101 / LONG -107.7872 At proposed prod. zone NENE / 1091 FNL / 837 FEL / LAT 36.260254 / LONG -107.770245		10. Field and Pool, or Exploratory BASIN-MANCOS Nageezi Unit Mancos 11. Sec., T. R. M. or Blk. and Survey or Area SEC 33/T24N/R9W/NMP
14. Distance in miles and direction from nearest town or post office* 35 miles		12. County or Parish SAN JUAN
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 552 feet		13. State NM
16. No of acres in lease 2240		17. Spacing Unit dedicated to this well 321.65
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1104 feet		20. BLM/BIA Bond No. in file FED: NMB001464
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6876 feet		22. Approximate date work will start* 07/06/2020
		23. Estimated duration 10 days
24. Attachments		

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

- | | |
|--|---|
| 1. Well plat certified by a registered surveyor. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification. |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be requested by the BLM. |

25. Signature (Electronic Submission)	Name (Printed/Typed) SHAW N / Ph: (505) 632-3476	Date 02/06/2020
Title Regulatory Specialist		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) RICHARD FIELDS / Ph: (505) 564-7612	Date 11/20/2020
Title Field Manager		

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

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



(Continued on page 2)

*(Instructions on page 2)

DISTRICT I1625 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 87506
Phone: (505) 475-3480 Fax: (505) 475-3482State of New Mexico
Energy, Minerals & Natural Resources DepartmentForm C-102
Revised August 1, 2011Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, NM 87505☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045-38191		² Pool Code 98080	³ Pool Name NAGEEZI UNIT MANCOS OIL POOL
⁴ Property Code 325268	⁵ Property Name NAGEEZI UNIT		⁶ Well Number 608H
⁷ GRID No. 371838	⁸ Operator Name DJR OPERATING, LLC		⁹ Elevation 6876'

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
H	33	24N	9W		1354'	NORTH	544'	EAST	SAN JUAN

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	3	23N	9W	1	1091'	NORTH	837'	EAST	SAN JUAN

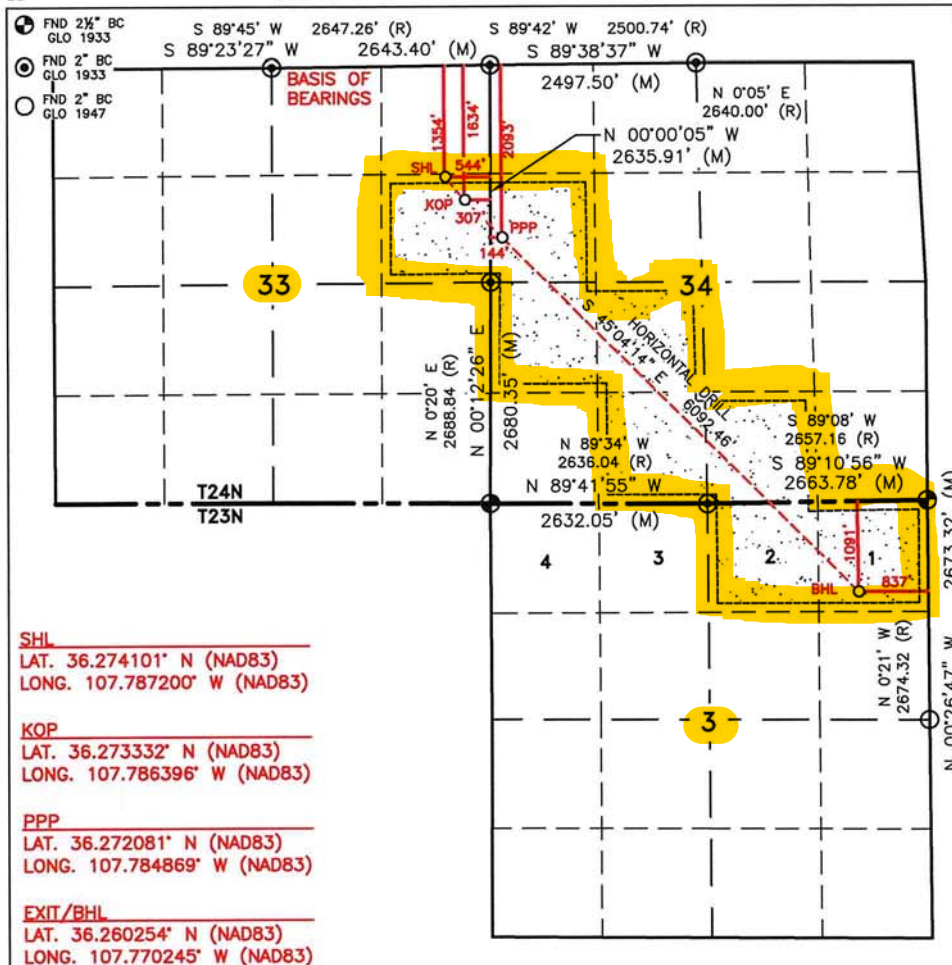
¹² Dedicated Acres PENETRATED SPACING UNIT:
SEC 33: SE/NE (40 AC.); SEC 34: SW/NW,
NW/SW, NE/SW, SE/SW, & SW/SE (200 AC.);
SEC 3: NW/NE & NE/NE (81.65 AC.) =
321.65 ACRES TOTAL

¹³ Joint or Infill¹⁴ Consolidation Code¹⁵ Order No.

R-13856 R-13856A

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.

Shaw-Marie Ford 2/7/20
Signature Date

Shaw-Marie Ford

Printed Name

sford@djrlc.com

E-mail Address

SURVEYOR CERTIFICATION

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

AUGUST 15, 2019

Date of Survey

Signature and Seal of Professional Surveyor:



Certificate Number

11393

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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
NAGEEZI UNIT #608H

N/4 CORNER SEC 33

LAT. 36.277755° N (NAD83)
LONG. 107.794321° W (NAD83)

NE CORNER SEC 33

LAT. 36.277829° N (NAD83)
LONG. 107.785353° W (NAD83)

N/4 CORNER SEC 34

LAT. 36.277868° N (NAD83)
LONG. 107.776880° W (NAD83)

E/4 CORNER SEC 33

LAT. 36.270588° N (NAD83)
LONG. 107.785358° W (NAD83)

SE CORNER SEC 33

LAT. 36.263225° N (NAD83)
LONG. 107.785395° W (NAD83)

S/4 CORNER SEC 34

LAT. 36.263183° N (NAD83)
LONG. 107.776467° W (NAD83)

SE CORNER SEC 34

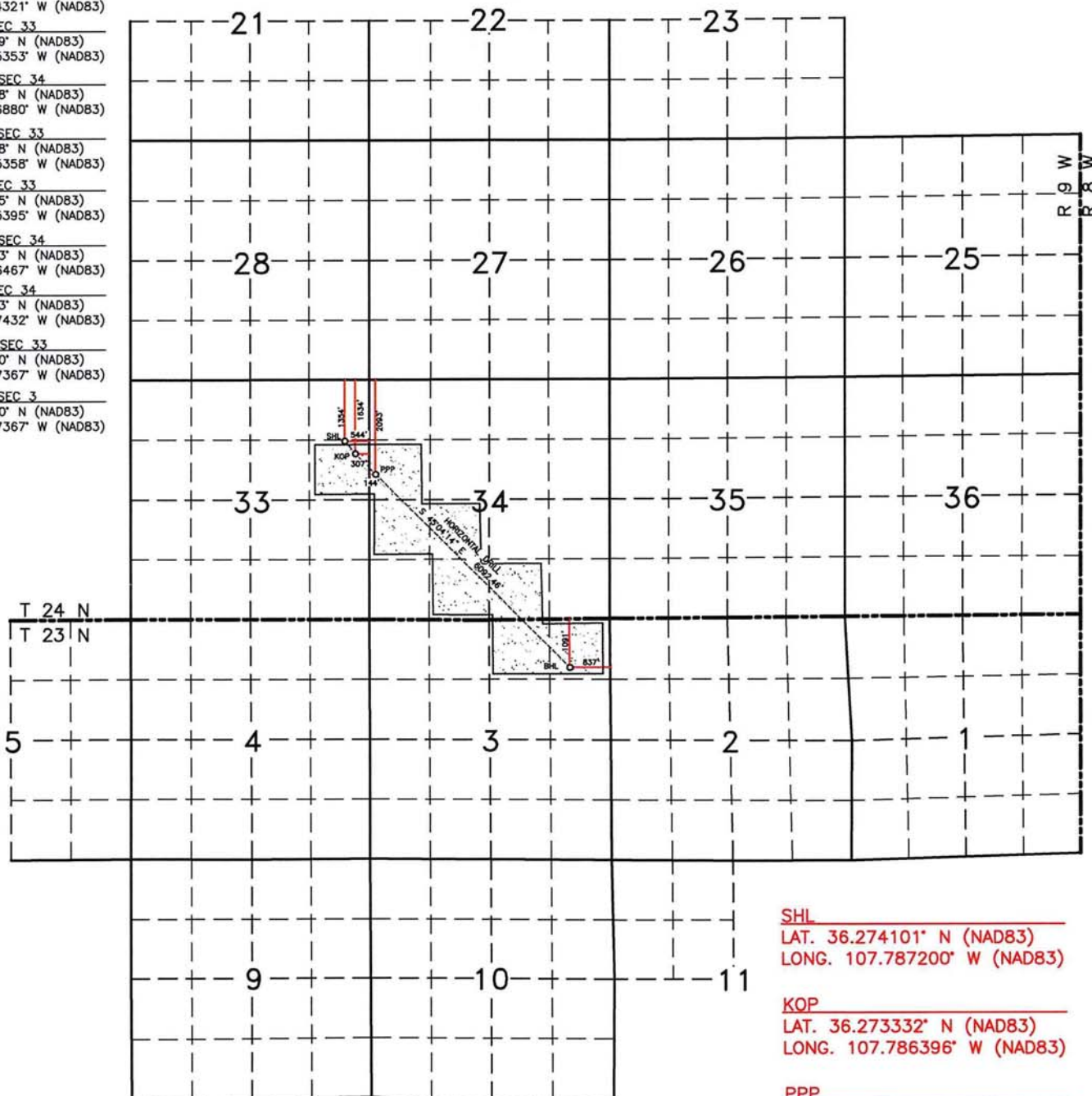
LAT. 36.263283° N (NAD83)
LONG. 107.767432° W (NAD83)

W/4 CORNER SEC 33

LAT. 36.255940° N (NAD83)
LONG. 107.767367° W (NAD83)

E/4 CORNER SEC 3

LAT. 36.255940° N (NAD83)
LONG. 107.767367° W (NAD83)

**SHL**

LAT. 36.274101° N (NAD83)
LONG. 107.787200° W (NAD83)

KOP

LAT. 36.273332° N (NAD83)
LONG. 107.786396° W (NAD83)

PPP

LAT. 36.272081° N (NAD83)
LONG. 107.784869° W (NAD83)

EXIT/BHL

LAT. 36.260254° N (NAD83)
LONG. 107.770245° W (NAD83)

PENETRATED SPACING UNIT;
SEC 33: SE/NE (40 AC.); SEC 34: SW/NW, NW/SW,
NE/SW, SE/SW, & SW/SE (200 AC.);
SEC 3: NW/NE & NE/NE (81.65 AC.) =
321.65 ACRES TOTAL
TOTAL 10,415.12 ACRES: T24N R9W, SEC. 21-23 (S/2), 25-28, 33-36,
1-4, 9-10 (ALL); T23N R9W, SEC. 5 (W/2), 11 (NW/4) - UNDIVIDED UNIT

Rev 1



DRILLING PLAN

Nageezi Unit 608H

San Juan County, New Mexico

Surface Location

544-ft FEL & 1354-ft FNL
 Sec 33 T24N R09W
 Graded Elevation 6877' MSL
 RKB Elevation 6891' (14' KB)

SHL Geographical Coordinates (NAD-83)

Latitude 36.2741010° N
 Longitude 107.7872000° W

Kick Off Point for Horizontal Build Curve

4621-ft MD
 4605-ft TVD

Local Coordinates (from SHL)

280-ft South
 237-ft East

Heel Location (Pay zone entry)

144-ft FWL & 2093-ft FNL
 Sec 34 T24N R9W

Heel Geographical Coordinates (NAD-83)

Latitude 36.2720808° N
 Longitude 107.78486850° W

Bottom Hole Location (TD)

837-ft FEL & 1091-ft FNL
 Sec 3 T23N R9W

BHL Geographical Coordinates (NAD-83)

Latitude 36.2602541° N
 Longitude 107.7702451° W

Well objectives

This well is planned as a 6090-ft lateral in the Gallup C R3 sand.

Bottom Hole temperature and pressure

The temperature in the Gallup C R3 horizontal objective is 139°F. Bottom hole pressure in the Gallup C R3 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	707	706	Sd	W	8.3	8.4 – 8.8
Kirtland	860	859	Sh	-	8.3	8.4 – 8.8
Fruitland	1151	1149	C	G	8.3	9.0 - 9.5
Pictured Cliffs	1499	1495	Sd	W	8.3	9.0 - 9.5
Lewis	1596	1592	Sh	-		9.0 - 9.5
Chacra	2242	2235	Sd	-	8.3	9.0 - 9.5
Menefee	2994	2984	Sd, C	G	8.3	9.0 - 9.5
Point Lookout	3952	3938	Sd	-	8.3	9.0 - 9.5
Mancos	4127	4113	Sh	-		9.0 - 9.5
Mancos Silt	4447	4431	Slt	O/G	6.6	9.0 - 9.5
Gallup A	4969	4926	Slt	O/G	6.6	9.0 - 9.5
Gallup B	5019	4965	Sd	O/G	6.6	8.8 -9.0
Gallup C	5214	5091	Sd	O/G	6.6	8.8 -9.0
Target	5570	5185	Sd	O/G	6.6	8.8 -9.0

Casing Program

Casing OD	Hole Size	Weight (#/ft)	Grade	Coupling	MD Top	MD Bottom	TVD Top	TVD Bottom	Top of Cement
9-5/8"	12-1/4"	36	K-55	STC	surf	350	surf	350	surface
7"	8-3/4"	26	K-55	LTC	surf	5509	surf	5183	surface
4-1/2"	6-1/8"	11.6	P-110	BTC	5231	11663	5100	5130	5231

Note: all casing will be new



Rev 1

Casing Design Load Cases

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

Note #

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

Casing Design Factors

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

Cement Design9-5/8" Surface Casing

	<u>Lead</u>
Name	Redi-Mix
Type	I-II
Planned top	Surface
Density (ppg)	14.50
Yield (cf/sx)	1.61
Mix water (gal/sx)	7.41
Volume (sx)	114
Volume (bbls)	33
Volume (cu. ft.)	185
Excess %	50

7" Intermediate Casing

	<u>Lead</u>	<u>Tail</u>
	BJ Services	BJ Services
Type	III	Poz/G
Planned top	Surface	4121-ft
Density (ppg)	12.30	13.50
Yield (cf/sx)	2.34	1.50
Mix water (gal/sx)	13.26	7.20
Volume (sx)	413	229
Volume (bbls)	172	61
Volume (cu.ft.)	966	343
Excess %	50	50



Rev 1

4-1/2" Production Liner

	BJ Services
Type	Poz/G
Planned top	5231-ft
Density (ppg)	13.3
Yield (cf/sx)	1.56
Mix water (gal/sx)	7.71
Volume (sx)	540
Volume (bbls)	150
Volume (cu.ft)	844
Excess %	40

Wellhead & Pressure Control

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

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

Mud Program

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

Hole Section	Fluid type	Interval (MD)	Density (ppg)	Funnel Viscosity	Yield Point	Fluid Loss (cc/30 min)
Surface	Fresh water spud mud	0 – 350	8.4 – 8.8	32 – 44	2 – 12	NC
Intermediate	7% KCl Low solids, non-dispersed	350 – 5509	9.0 – 9.5	38 – 45	8 – 14	<20
Production	Low solids, non-dispersed	5509 – 11663	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.

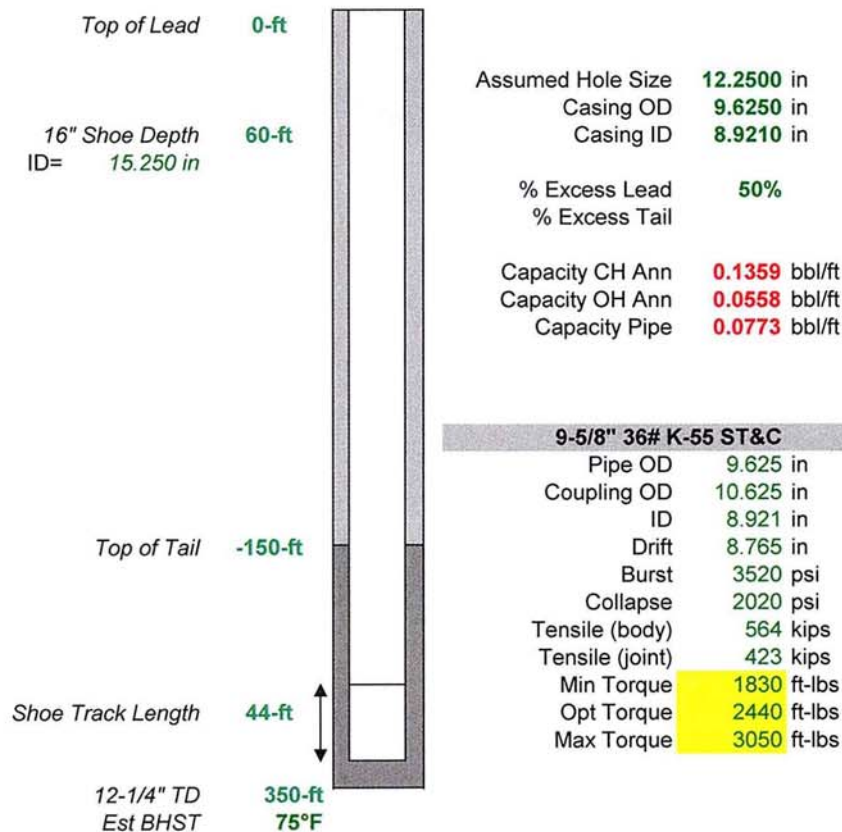
Electric logging: No open hole electric logs are programmed. A cased hole GR/CCL will be run during completions for perforating depth control.

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.

9-5/8" Surface Casing & Cementing

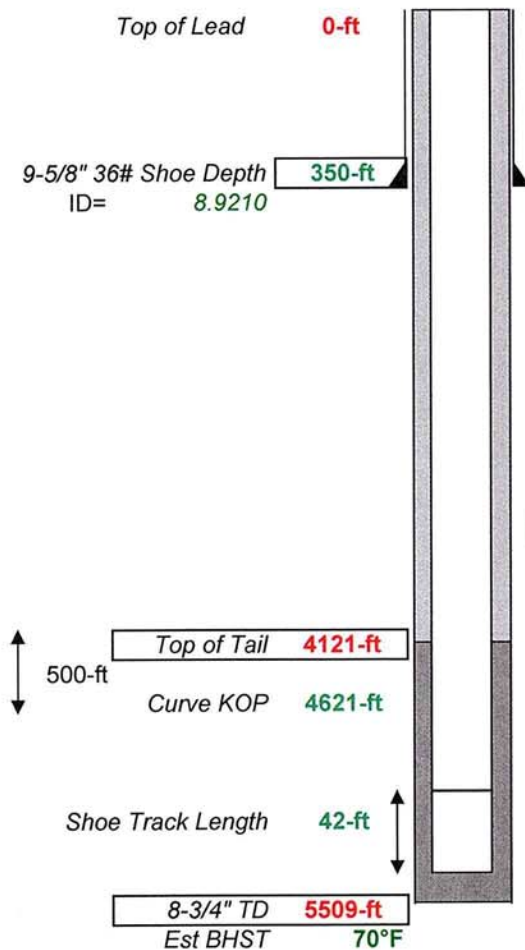
Lead Slurry		Properties	
Redi Mix Type I/II		Density	14.50 ppg
20% Fly Ash		Yield	1.61 cf/sk
		Total Mix Fluid	7.41 gal/sk
		Est pump time (70Bc)	NA
		8-hr compressive	475 psi
		24-hr compressive	1375 psi
Tail Slurry		Properties	
		Density	ppg
		Yield	cf/sk
		Total Mix Fluid	gal/sk
		Est pump time (70Bc)	
		50 psi strength in	
		24/72 hr strength	psi
Volumes			
Lead Volume	33 bbls	114 sx	
Tail Volume	bbls	sx	
Displacement	24 bbls		
Total Volume	56 bbls		

Casing Jewelry and Pump Schedule

Run guide shoe, 1 joint, then float collar. Centralize with 1 one bow spring per joint for the first 500-ft, then 1 every third joint to surface. Bottom centralizer to be 10-ft above guide shoe with stop collar above, thereafter around the coupling. Thread lock guide shoe, shoe track and float collar.

Pump schedule: 40 bbls fresh water, drop bottom plug, lead, tail, top plug, displace with water. Land wellhead housing on u-plate.

7" Intermediate Casing & Cementing Nageezi Unit 608H



Assumed Hole Size Lead	8.7500 in
Assumed Hole Size Tail	8.7500 in
Casing OD	7.0000 in
Casing ID	6.2760 in

% OH Excess Lead	60%
% OH Excess Tail	60%

Capacity CH Ann	0.0297 bbl/ft
Capacity OH Ann Lead	0.0268 bbl/ft
Capacity OH Ann Tail	0.0268 bbl/ft
Capacity Pipe	0.0383 bbl/ft

7" 26# K-55 LT&C

Pipe OD	7.000 in
Weight	26 lbs/ft
Grade	K-55
Coupling	LTC
Coupling OD	7.656 in
ID	6.276 in
Drift	6.151 in
Burst	4980 psi
Collapse	4330 psi
Tensile (body)	415 kips
Tensile (joint)	367 kips
Min Torque	ft-lbs
Opt Torque	ft-lbs
Max Torque	ft-lbs

BJ Lead Slurry

Type III	
BA-90	5 lb/sx%
KCI	3.00%
GW-86	0.10%
FL-66	0.20%
R-3	0.50%
FP-25	0.30%

Properties

Density	12.30 ppg
Yield	2.3404 cf/sk
Total Mix Fluid	13.26 gal/sk
Thickening Time	3:11 hr:min
Time to 50 psi (80°F)	5:10 hr:min
24-hr UCA (80°F)	659 psi

BJ Tail Slurry

G+Pozz	50:50
BA-90	3 lb/sx
FL-66	0.40%
FP-25	0.30%
Sod. Met	0.50%
Gyp	3.00%

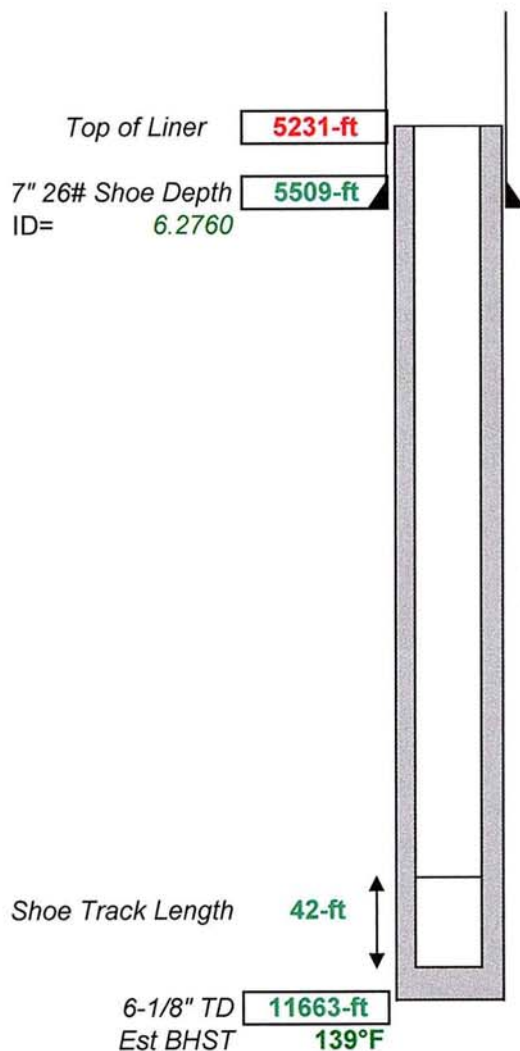
Properties

Density	13.50 ppg
Yield	1.4946 cf/sk
Total Mix Fluid	7.24 gal/sk
Thickening Time	3:26 hr:min
Time to 50 psi (135°F)	2:55 hr:min
Time to 500 psi (135°F)	6:40 hr:min

Volumes

Lead Volume	172 bbls	413 sx
Tail Volume	61 bbls	229 sx
Approx Displacement	209 bbls	
Total Volume	442 bbls	

4-1/2" Liner Cementing Nageezi Unit 608H

Assumed Hole Size **6.1250** inCasing OD **4.5000** inCasing ID **4.0000** in% Excess Open Hole **40%**Capacity CH Ann **0.0186** bbl/ftCapacity OH Ann **0.0168** bbl/ftCapacity Pipe **0.0155** bbl/ft

4-1/2" 11.6# P-110 LT&C

Pipe OD **4.500** inWeight **11.6** lbs/ftGrade **P-110**Coupling **LTC**Coupling OD **5.000** inID **4.000** inDrift **3.875** inBurst **10690** psiCollapse **7580** psiTensile (body) **367** kipsTensile (joint) **279** kipsMin Torque **ft-lbs**Opt Torque **ft-lbs**Max Torque **ft-lbs**

BJ Lead Slurry

G+Pozz **50:50**
 BA-90 **3 lb/sx**
 GW-86 **0.10%**
 R-3 **0.40%**
 FP-25 **30.00%**
 FL-24 **0.40%**
 Gel **4.00%**

Properties

Density **13.30** ppg
 Yield **1.5629** cf/sk
 Total Mix Fluid **7.70** gal/sk
 Thickening Time **6:04** hr:min
 Time to 50 psi (147°F) **7:15** hr:min
 24-hr UCA (147°F) **1293** psi

Volumes

Lead Volume **150** bbls **540** sxApprox Displacement **126** bblsTotal Volume **276** bbls



Company: DJR Operating
Project: Nageezi Unit
Site: H33 2409
Well: 608H
Wellbore: Original Drilling
Design: APD

WELL DETAILS: 608H

GL 6877' & RKB 14' @ 6891.00usft (Aztec 920)

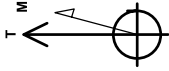
	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
	0.00	0.00	1919075.08	2736889.95	36.2741010	-107.7872000

Plan: APD (608H/Original Drilling)

Created By: Janie Collins Date: 8:48, January 07 2020

PROJECT DETAILS: Nageezi Unit

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Western Zone
System Datum: Mean Sea Level
Local North: True



Azimuths to True North
Magnetic North: 8.2°
Magnetic Field
Strength: 49434.7 nT
Dip Angle: 62.2°
Date: 12/20/2019
Model: HDGM_F13

DESIGN TARGET DETAILS

Point	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
-------	-----	-------	-------	----------	---------	----------	-----------

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	
375.00	0.00	0.000	375.00	0.00	0.00	0.00	0.00	0.00	
630.57	5.12	139.712	630.53	8.71	237.38	2.00	139.71	11.38	
4870.24	89.52	134.657	4869.01	-735.26	687.24	0.00	-0.97	1000.63	608H Heel
5570.24	90.52	134.657	5130.00	-5040.16	4998.51	0.00	0.00	7098.48	608H Toe
11663.05	90.52	134.957	5130.00	-5040.16	4998.51	0.00	0.00	7098.48	

SECTION DETAILS

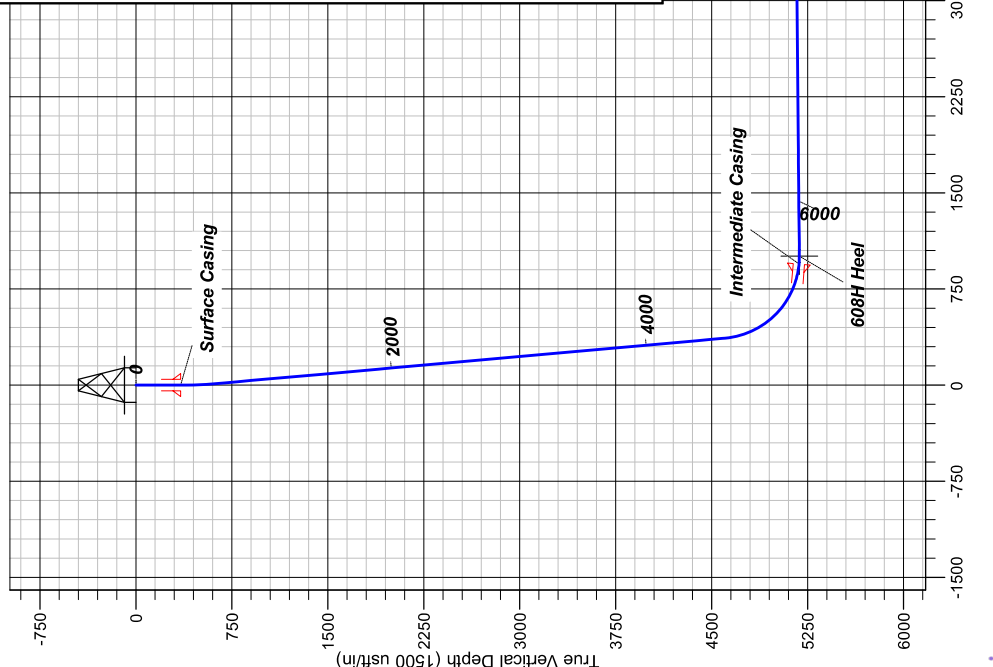
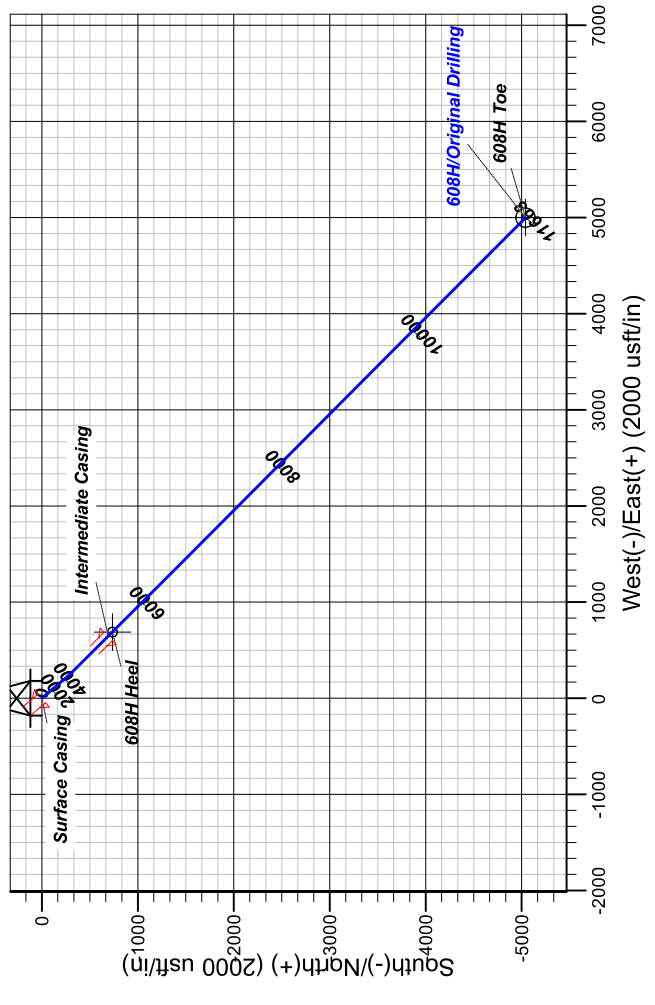
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	
375.00	0.00	0.000	375.00	0.00	0.00	0.00	0.00	0.00	
630.57	5.12	139.712	630.53	8.71	237.38	2.00	139.71	11.38	
4870.24	89.52	134.657	4869.01	-735.26	687.24	0.00	-0.97	1000.63	608H Heel
5570.24	90.52	134.657	5130.00	-5040.16	4998.51	0.00	0.00	7098.48	608H Toe
11663.05	90.52	134.957	5130.00	-5040.16	4998.51	0.00	0.00	7098.48	

CASING DETAILS

TVD	MD	Name
350.00	350.00	Surface Casing
5182.66	509.04	Intermediate Casing

FORMATION DETAILS

MDPath	Formation
706.64	Ojo Alamo
859.00	Kirtland
1149.00	Fruitland
1495.00	Pictured Cliffs
1592.00	Lewis
2241.76	Chacra
2993.76	Menefee
3951.58	Point Lookout
4127.28	Mancos
4426.55	Mancos Silt
4968.79	Gallup A
5018.73	Gallup B
5214.18	Gallup C





DJR Operating

Nageezi Unit

H33 2409

608H - Slot 2

Original Drilling

Plan: APD

Standard Planning Report

07 January, 2020



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Scientific Drilling, Intl
Planning Report



Database:	Grand Junction	Local Co-ordinate Reference:	Well 608H - Slot 2
Company:	DJR Operating	TVD Reference:	GL 6877' & RKB 14' @ 6891.00usft (Aztec 920)
Project:	Nageezi Unit	MD Reference:	GL 6877' & RKB 14' @ 6891.00usft (Aztec 920)
Site:	H33 2409	North Reference:	True
Well:	608H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD		

Project	Nageezi 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		H33 2409			
Site Position:		Northing:	1,919,065.61 usft	Latitude:	36.2740750
From:	Lat/Long	Easting:	2,736,671.38 usft	Longitude:	-107.7872630
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	0.03

Well	608H - Slot 2					
Well Position	+N/-S	9.46 usft	Northing:	1,919,075.08 usft	Latitude:	36.2741010
	+E/-W	18.57 usft	Easting:	2,736,689.95 usft	Longitude:	-107.7872000
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	6,877.00 usft

Wellbore	Original Drilling				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM_FILE	12/20/2019	8.80	62.78	49,434.70000000

Design	APD			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	135.238

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
375.00	0.00	0.000	375.00	0.00	0.00	0.00	0.00	0.00	0.00	
630.87	5.12	139.712	630.53	-8.71	7.38	2.00	2.00	0.00	139.71	
4,621.26	5.12	139.712	4,605.01	-280.22	237.54	0.00	0.00	0.00	0.00	
5,570.34	90.52	134.957	5,185.00	-735.39	687.25	9.00	9.00	-0.50	-4.77	608H Heel
11,663.05	90.52	134.957	5,130.00	-5,040.16	4,998.51	0.00	0.00	0.00	0.00	608H Toe



Scientific Drilling, Intl
Planning Report



Database:	Grand Junction	Local Co-ordinate Reference:	Well 608H - Slot 2
Company:	DJR Operating	TVD Reference:	GL 6877' & RKB 14' @ 6891.00usft (Aztec 920)
Project:	Nageezi Unit	MD Reference:	GL 6877' & RKB 14' @ 6891.00usft (Aztec 920)
Site:	H33 2409	North Reference:	True
Well:	608H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.000	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.000	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
375.00	0.00	0.000	375.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.50	139.712	400.00	-0.08	0.07	0.11	2.00	2.00	0.00	
500.00	2.50	139.712	499.96	-2.08	1.76	2.72	2.00	2.00	0.00	
600.00	4.50	139.712	599.77	-6.74	5.71	8.80	2.00	2.00	0.00	
630.87	5.12	139.712	630.53	-8.71	7.38	11.38	2.00	2.00	0.00	
700.00	5.12	139.712	699.38	-13.41	11.37	17.53	0.00	0.00	0.00	
800.00	5.12	139.712	798.99	-20.22	17.14	26.42	0.00	0.00	0.00	
900.00	5.12	139.712	898.59	-27.02	22.91	35.32	0.00	0.00	0.00	
1,000.00	5.12	139.712	998.19	-33.83	28.67	44.21	0.00	0.00	0.00	
1,100.00	5.12	139.712	1,097.79	-40.63	34.44	53.10	0.00	0.00	0.00	
1,200.00	5.12	139.712	1,197.39	-47.43	40.21	61.99	0.00	0.00	0.00	
1,300.00	5.12	139.712	1,296.99	-54.24	45.98	70.89	0.00	0.00	0.00	
1,400.00	5.12	139.712	1,396.59	-61.04	51.75	79.78	0.00	0.00	0.00	
1,500.00	5.12	139.712	1,496.20	-67.85	57.51	88.67	0.00	0.00	0.00	
1,600.00	5.12	139.712	1,595.80	-74.65	63.28	97.56	0.00	0.00	0.00	
1,700.00	5.12	139.712	1,695.40	-81.45	69.05	106.46	0.00	0.00	0.00	
1,800.00	5.12	139.712	1,795.00	-88.26	74.82	115.35	0.00	0.00	0.00	
1,900.00	5.12	139.712	1,894.60	-95.06	80.58	124.24	0.00	0.00	0.00	
2,000.00	5.12	139.712	1,994.20	-101.87	86.35	133.13	0.00	0.00	0.00	
2,100.00	5.12	139.712	2,093.80	-108.67	92.12	142.03	0.00	0.00	0.00	
2,200.00	5.12	139.712	2,193.41	-115.47	97.89	150.92	0.00	0.00	0.00	
2,300.00	5.12	139.712	2,293.01	-122.28	103.66	159.81	0.00	0.00	0.00	
2,400.00	5.12	139.712	2,392.61	-129.08	109.42	168.70	0.00	0.00	0.00	
2,500.00	5.12	139.712	2,492.21	-135.89	115.19	177.60	0.00	0.00	0.00	
2,600.00	5.12	139.712	2,591.81	-142.69	120.96	186.49	0.00	0.00	0.00	
2,700.00	5.12	139.712	2,691.41	-149.49	126.73	195.38	0.00	0.00	0.00	
2,800.00	5.12	139.712	2,791.01	-156.30	132.49	204.28	0.00	0.00	0.00	
2,900.00	5.12	139.712	2,890.62	-163.10	138.26	213.17	0.00	0.00	0.00	
3,000.00	5.12	139.712	2,990.22	-169.91	144.03	222.06	0.00	0.00	0.00	
3,100.00	5.12	139.712	3,089.82	-176.71	149.80	230.95	0.00	0.00	0.00	
3,200.00	5.12	139.712	3,189.42	-183.51	155.57	239.85	0.00	0.00	0.00	
3,300.00	5.12	139.712	3,289.02	-190.32	161.33	248.74	0.00	0.00	0.00	
3,400.00	5.12	139.712	3,388.62	-197.12	167.10	257.63	0.00	0.00	0.00	
3,500.00	5.12	139.712	3,488.22	-203.93	172.87	266.52	0.00	0.00	0.00	
3,600.00	5.12	139.712	3,587.83	-210.73	178.64	275.42	0.00	0.00	0.00	
3,700.00	5.12	139.712	3,687.43	-217.53	184.40	284.31	0.00	0.00	0.00	
3,800.00	5.12	139.712	3,787.03	-224.34	190.17	293.20	0.00	0.00	0.00	
3,900.00	5.12	139.712	3,886.63	-231.14	195.94	302.09	0.00	0.00	0.00	
4,000.00	5.12	139.712	3,986.23	-237.95	201.71	310.99	0.00	0.00	0.00	
4,100.00	5.12	139.712	4,085.83	-244.75	207.48	319.88	0.00	0.00	0.00	
4,200.00	5.12	139.712	4,185.43	-251.55	213.24	328.77	0.00	0.00	0.00	
4,300.00	5.12	139.712	4,285.03	-258.36	219.01	337.66	0.00	0.00	0.00	
4,400.00	5.12	139.712	4,384.64	-265.16	224.78	346.56	0.00	0.00	0.00	
4,500.00	5.12	139.712	4,484.24	-271.97	230.55	355.45	0.00	0.00	0.00	
4,600.00	5.12	139.712	4,583.84	-278.77	236.31	364.34	0.00	0.00	0.00	
4,621.26	5.12	139.712	4,605.01	-280.22	237.54	366.23	0.00	0.00	0.00	
4,700.00	12.19	136.928	4,682.81	-288.98	245.50	378.06	9.00	8.99	-3.54	
4,800.00	21.19	136.057	4,778.50	-309.75	265.30	406.75	9.00	9.00	-0.87	



Scientific Drilling, Intl
Planning Report



Database:	Grand Junction	Local Co-ordinate Reference:	Well 608H - Slot 2
Company:	DJR Operating	TVD Reference:	GL 6877' & RKB 14' @ 6891.00usft (Aztec 920)
Project:	Nageezi Unit	MD Reference:	GL 6877' & RKB 14' @ 6891.00usft (Aztec 920)
Site:	H33 2409	North Reference:	True
Well:	608H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,900.00	30.19	135.691	4,868.52	-340.82	295.46	450.05	9.00	9.00	-0.37
5,000.00	39.19	135.482	4,950.66	-381.42	335.26	506.90	9.00	9.00	-0.21
5,100.00	48.19	135.341	5,022.90	-430.56	383.70	575.90	9.00	9.00	-0.14
5,200.00	57.19	135.235	5,083.45	-487.02	439.61	655.36	9.00	9.00	-0.11
5,300.00	66.19	135.148	5,130.83	-549.41	501.59	743.30	9.00	9.00	-0.09
5,400.00	75.19	135.073	5,163.87	-616.20	568.12	837.58	9.00	9.00	-0.08
5,500.00	84.19	135.004	5,181.75	-685.75	637.57	935.86	9.00	9.00	-0.07
5,570.34	90.52	134.957	5,185.00	-735.39	687.25	1,006.09	9.00	9.00	-0.07
5,600.00	90.52	134.957	5,184.73	-756.35	708.24	1,035.75	0.00	0.00	0.00
5,700.00	90.52	134.957	5,183.83	-827.00	779.00	1,135.74	0.00	0.00	0.00
5,800.00	90.52	134.957	5,182.93	-897.65	849.76	1,235.74	0.00	0.00	0.00
5,900.00	90.52	134.957	5,182.02	-968.31	920.52	1,335.73	0.00	0.00	0.00
6,000.00	90.52	134.957	5,181.12	-1,038.96	991.28	1,435.73	0.00	0.00	0.00
6,100.00	90.52	134.957	5,180.22	-1,109.62	1,062.04	1,535.72	0.00	0.00	0.00
6,200.00	90.52	134.957	5,179.32	-1,180.27	1,132.80	1,635.72	0.00	0.00	0.00
6,300.00	90.52	134.957	5,178.41	-1,250.93	1,203.57	1,735.71	0.00	0.00	0.00
6,400.00	90.52	134.957	5,177.51	-1,321.58	1,274.33	1,835.71	0.00	0.00	0.00
6,500.00	90.52	134.957	5,176.61	-1,392.24	1,345.09	1,935.70	0.00	0.00	0.00
6,600.00	90.52	134.957	5,175.71	-1,462.89	1,415.85	2,035.70	0.00	0.00	0.00
6,700.00	90.52	134.957	5,174.80	-1,533.55	1,486.61	2,135.69	0.00	0.00	0.00
6,800.00	90.52	134.957	5,173.90	-1,604.20	1,557.37	2,235.69	0.00	0.00	0.00
6,900.00	90.52	134.957	5,173.00	-1,674.85	1,628.13	2,335.68	0.00	0.00	0.00
7,000.00	90.52	134.957	5,172.09	-1,745.51	1,698.89	2,435.68	0.00	0.00	0.00
7,100.00	90.52	134.957	5,171.19	-1,816.16	1,769.65	2,535.67	0.00	0.00	0.00
7,200.00	90.52	134.957	5,170.29	-1,886.82	1,840.41	2,635.66	0.00	0.00	0.00
7,300.00	90.52	134.957	5,169.39	-1,957.47	1,911.18	2,735.66	0.00	0.00	0.00
7,400.00	90.52	134.957	5,168.48	-2,028.13	1,981.94	2,835.65	0.00	0.00	0.00
7,500.00	90.52	134.957	5,167.58	-2,098.78	2,052.70	2,935.65	0.00	0.00	0.00
7,600.00	90.52	134.957	5,166.68	-2,169.44	2,123.46	3,035.64	0.00	0.00	0.00
7,700.00	90.52	134.957	5,165.78	-2,240.09	2,194.22	3,135.64	0.00	0.00	0.00
7,800.00	90.52	134.957	5,164.87	-2,310.74	2,264.98	3,235.63	0.00	0.00	0.00
7,900.00	90.52	134.957	5,163.97	-2,381.40	2,335.74	3,335.63	0.00	0.00	0.00
8,000.00	90.52	134.957	5,163.07	-2,452.05	2,406.50	3,435.62	0.00	0.00	0.00
8,100.00	90.52	134.957	5,162.16	-2,522.71	2,477.26	3,535.62	0.00	0.00	0.00
8,200.00	90.52	134.957	5,161.26	-2,593.36	2,548.03	3,635.61	0.00	0.00	0.00
8,300.00	90.52	134.957	5,160.36	-2,664.02	2,618.79	3,735.61	0.00	0.00	0.00
8,400.00	90.52	134.957	5,159.46	-2,734.67	2,689.55	3,835.60	0.00	0.00	0.00
8,500.00	90.52	134.957	5,158.55	-2,805.33	2,760.31	3,935.60	0.00	0.00	0.00
8,600.00	90.52	134.957	5,157.65	-2,875.98	2,831.07	4,035.59	0.00	0.00	0.00
8,700.00	90.52	134.957	5,156.75	-2,946.64	2,901.83	4,135.59	0.00	0.00	0.00
8,800.00	90.52	134.957	5,155.85	-3,017.29	2,972.59	4,235.58	0.00	0.00	0.00
8,900.00	90.52	134.957	5,154.94	-3,087.94	3,043.35	4,335.57	0.00	0.00	0.00
9,000.00	90.52	134.957	5,154.04	-3,158.60	3,114.11	4,435.57	0.00	0.00	0.00
9,100.00	90.52	134.957	5,153.14	-3,229.25	3,184.87	4,535.56	0.00	0.00	0.00
9,200.00	90.52	134.957	5,152.23	-3,299.91	3,255.64	4,635.56	0.00	0.00	0.00
9,300.00	90.52	134.957	5,151.33	-3,370.56	3,326.40	4,735.55	0.00	0.00	0.00
9,400.00	90.52	134.957	5,150.43	-3,441.22	3,397.16	4,835.55	0.00	0.00	0.00
9,500.00	90.52	134.957	5,149.53	-3,511.87	3,467.92	4,935.54	0.00	0.00	0.00
9,600.00	90.52	134.957	5,148.62	-3,582.53	3,538.68	5,035.54	0.00	0.00	0.00
9,700.00	90.52	134.957	5,147.72	-3,653.18	3,609.44	5,135.53	0.00	0.00	0.00
9,800.00	90.52	134.957	5,146.82	-3,723.83	3,680.20	5,235.53	0.00	0.00	0.00
9,900.00	90.52	134.957	5,145.92	-3,794.49	3,750.96	5,335.52	0.00	0.00	0.00



Scientific Drilling, Intl
Planning Report



Database:	Grand Junction	Local Co-ordinate Reference:	Well 608H - Slot 2
Company:	DJR Operating	TVD Reference:	GL 6877' & RKB 14' @ 6891.00usft (Aztec 920)
Project:	Nageezi Unit	MD Reference:	GL 6877' & RKB 14' @ 6891.00usft (Aztec 920)
Site:	H33 2409	North Reference:	True
Well:	608H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
10,000.00	90.52	134.957	5,145.01	-3,865.14	3,821.72	5,435.52	0.00	0.00	0.00	
10,100.00	90.52	134.957	5,144.11	-3,935.80	3,892.49	5,535.51	0.00	0.00	0.00	
10,200.00	90.52	134.957	5,143.21	-4,006.45	3,963.25	5,635.51	0.00	0.00	0.00	
10,300.00	90.52	134.957	5,142.30	-4,077.11	4,034.01	5,735.50	0.00	0.00	0.00	
10,400.00	90.52	134.957	5,141.40	-4,147.76	4,104.77	5,835.50	0.00	0.00	0.00	
10,500.00	90.52	134.957	5,140.50	-4,218.42	4,175.53	5,935.49	0.00	0.00	0.00	
10,600.00	90.52	134.957	5,139.60	-4,289.07	4,246.29	6,035.49	0.00	0.00	0.00	
10,700.00	90.52	134.957	5,138.69	-4,359.73	4,317.05	6,135.48	0.00	0.00	0.00	
10,800.00	90.52	134.957	5,137.79	-4,430.38	4,387.81	6,235.47	0.00	0.00	0.00	
10,900.00	90.52	134.957	5,136.89	-4,501.03	4,458.57	6,335.47	0.00	0.00	0.00	
11,000.00	90.52	134.957	5,135.99	-4,571.69	4,529.33	6,435.46	0.00	0.00	0.00	
11,100.00	90.52	134.957	5,135.08	-4,642.34	4,600.10	6,535.46	0.00	0.00	0.00	
11,200.00	90.52	134.957	5,134.18	-4,713.00	4,670.86	6,635.45	0.00	0.00	0.00	
11,300.00	90.52	134.957	5,133.28	-4,783.65	4,741.62	6,735.45	0.00	0.00	0.00	
11,400.00	90.52	134.957	5,132.37	-4,854.31	4,812.38	6,835.44	0.00	0.00	0.00	
11,500.00	90.52	134.957	5,131.47	-4,924.96	4,883.14	6,935.44	0.00	0.00	0.00	
11,600.00	90.52	134.957	5,130.57	-4,995.62	4,953.90	7,035.43	0.00	0.00	0.00	
11,663.05	90.52	134.957	5,130.00	-5,040.16	4,998.51	7,098.48	0.00	0.00	0.00	

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
608H Toe - plan hits target center - Circle (radius 100.00)	0.00	0.000	5,130.00	-5,040.16	4,998.51	1,914,037.30	2,741,690.87	36.2602541	-107.7702451
608H Heel - plan hits target center - Circle (radius 50.00)	0.00	0.000	5,185.00	-735.39	687.25	1,918,340.02	2,737,377.55	36.2720808	-107.7848685

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
350.00	350.00	Surface Casing	9.62	12.25	
5,509.04	5,182.60	Intermediate Casing	7.00	8.75	



Scientific Drilling, Intl
Planning Report



Database:	Grand Junction	Local Co-ordinate Reference:	Well 608H - Slot 2
Company:	DJR Operating	TVD Reference:	GL 6877' & RKB 14' @ 6891.00usft (Aztec 920)
Project:	Nageezi Unit	MD Reference:	GL 6877' & RKB 14' @ 6891.00usft (Aztec 920)
Site:	H33 2409	North Reference:	True
Well:	608H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
706.64	706.00	Ojo Alamo		0.00	0.000
860.25	859.00	Kirtland		0.00	0.000
1,151.41	1,149.00	Fruitland		0.00	0.000
1,498.80	1,495.00	Pictured Cliffs		0.00	0.000
1,596.19	1,592.00	Lewis		0.00	0.000
2,241.76	2,235.00	Chacra		0.00	0.000
2,993.76	2,984.00	Menefee		0.00	0.000
3,951.58	3,938.00	Point Lookout		0.00	0.000
4,127.28	4,113.00	Mancos		0.00	0.000
4,446.55	4,431.00	Mancos Silt		0.00	0.000
4,968.79	4,926.00	Gallup A		0.00	0.000
5,018.73	4,965.00	Gallup B		0.00	0.000
5,214.18	5,091.00	Gallup C		0.00	0.000



DJR Operating

**Nageezi Unit
H33 2409
608H**

**Original Drilling
APD**

Anticollision Report

07 January, 2020



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Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well 608H - Slot 2
Project:	Nageezi Unit	TVD Reference:	GL 6877' & RKB 14' @ 6891.00usft (Aztec 920)
Reference Site:	H33 2409	MD Reference:	GL 6877' & RKB 14' @ 6891.00usft (Aztec 920)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	608H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	Grand Junction
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Reference	APD		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.00usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum ellipse separation of 1,000.00 usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	1/7/2020		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	11,663.05	APD (Original Drilling)	MWD+IGRF	OWSG MWD + IGRF or WMM	

Summary	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Site Name						
Offset Well - Wellbore - Design						
H33 2409						
324H - Original Drilling - APD	300.00	300.00	20.84	19.10	11.963	CC
324H - Original Drilling - APD	400.00	400.00	20.87	18.41	8.500	ES
324H - Original Drilling - APD	11,399.98	11,582.40	1,267.04	936.72	3.836	SF

Offset Design	H33 2409 - 324H - Original Drilling - APD												Offset Site Error:	0.00 usft
Survey Program:	0-MWD+IGRF												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis			Distance				Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-116.99	-9.46	-18.57	20.84					
100.00	100.00	100.00	100.00	0.15	0.15	-116.99	-9.46	-18.57	20.84	20.53	0.31	67.608		
200.00	200.00	200.00	200.00	0.51	0.51	-116.99	-9.46	-18.57	20.84	19.82	1.03	20.330		
300.00	300.00	300.00	300.00	0.87	0.87	-116.99	-9.46	-18.57	20.84	19.10	1.74	11.963	CC	
300.16	300.16	300.16	300.16	0.87	0.87	-116.99	-9.46	-18.57	20.84	19.10	1.74	11.956		
400.00	400.00	400.00	400.00	1.23	1.23	103.59	-9.46	-18.57	20.87	18.41	2.46	8.500	ES	
500.00	499.96	499.30	499.28	1.56	1.57	107.85	-10.86	-19.58	23.09	19.95	3.13	7.368		
600.00	599.77	598.31	598.15	1.91	1.91	113.67	-15.02	-22.59	29.53	25.71	3.82	7.729		
700.00	699.38	696.83	696.30	2.28	2.26	117.52	-21.92	-27.56	39.97	35.44	4.53	8.826		
800.00	798.98	794.78	793.53	2.65	2.63	117.41	-31.49	-34.46	53.10	47.85	5.25	10.117		
900.00	898.59	891.95	889.54	3.03	3.03	115.48	-43.63	-43.22	68.78	62.80	5.98	11.505		
1,000.00	998.19	988.14	984.02	3.42	3.46	112.92	-58.25	-53.77	87.14	80.43	6.71	12.981		
1,100.00	1,097.79	1,083.14	1,076.69	3.81	3.92	110.26	-75.21	-66.00	108.30	100.85	7.45	14.542		
1,200.00	1,197.39	1,176.78	1,167.29	4.20	4.41	107.73	-94.35	-79.80	132.32	124.15	8.17	16.189		
1,300.00	1,296.99	1,271.86	1,258.68	4.59	4.95	105.48	-115.66	-95.18	158.64	149.71	8.93	17.765		
1,400.00	1,396.59	1,368.13	1,351.15	4.98	5.51	103.83	-137.37	-110.83	185.26	175.55	9.71	19.084		
1,500.00	1,496.19	1,464.41	1,443.63	5.37	6.08	102.59	-159.07	-126.49	212.00	201.51	10.49	20.209		
1,600.00	1,595.79	1,560.68	1,536.10	5.77	6.67	101.62	-180.78	-142.15	238.80	227.53	11.28	21.177		
1,700.00	1,695.40	1,656.95	1,628.58	6.16	7.26	100.86	-202.48	-157.80	265.66	253.59	12.07	22.018		
1,800.00	1,795.00	1,753.22	1,721.06	6.56	7.85	100.23	-224.19	-173.46	292.55	279.69	12.86	22.754		
1,900.00	1,894.60	1,849.49	1,813.53	6.95	8.45	99.71	-245.89	-189.12	319.47	305.82	13.65	23.403		
2,000.00	1,994.20	1,945.76	1,906.01	7.35	9.05	99.27	-267.60	-204.77	346.41	331.96	14.45	23.979		

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



Scientific Drilling, Intl

Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well 608H - Slot 2
Project:	Nageezi Unit	TVD Reference:	GL 6877' & RKB 14' @ 6891.00usft (Aztec 920)
Reference Site:	H33 2409	MD Reference:	GL 6877' & RKB 14' @ 6891.00usft (Aztec 920)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	608H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	Grand Junction
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design H33 2409 - 324H - Original Drilling - APD													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
2,100.00	2,093.80	2,042.03	1,998.49	7.74	9.65	98.89	-289.31	-220.43	373.36	358.12	15.24	24.494		
2,200.00	2,193.40	2,138.30	2,090.96	8.14	10.26	98.56	-311.01	-236.08	400.33	384.29	16.04	24.956		
2,300.00	2,293.00	2,234.58	2,183.44	8.54	10.87	98.28	-332.72	-251.74	427.31	410.47	16.84	25.374		
2,400.00	2,392.60	2,330.85	2,275.92	8.93	11.48	98.03	-354.42	-267.40	454.30	436.66	17.64	25.753		
2,500.00	2,492.20	2,427.12	2,368.39	9.33	12.09	97.80	-376.13	-283.05	481.29	462.85	18.44	26.098		
2,599.99	2,591.81	2,523.39	2,460.87	9.72	12.70	97.60	-397.83	-298.71	508.30	489.05	19.24	26.414		
2,699.99	2,691.41	2,619.66	2,553.35	10.12	13.31	97.42	-419.54	-314.37	535.30	515.26	20.05	26.704		
2,799.99	2,791.01	2,715.93	2,645.82	10.52	13.92	97.26	-441.24	-330.02	562.31	541.46	20.85	26.971		
2,899.99	2,890.61	2,812.20	2,738.30	10.92	14.54	97.12	-462.95	-345.68	589.33	567.68	21.65	27.218		
2,999.99	2,990.21	2,908.47	2,830.77	11.31	15.15	96.98	-484.66	-361.34	616.35	593.89	22.46	27.447		
3,099.99	3,089.81	3,004.74	2,923.25	11.71	15.77	96.86	-506.36	-376.99	643.37	620.11	23.26	27.659		
3,199.99	3,189.41	3,101.02	3,015.73	12.11	16.39	96.74	-528.07	-392.65	670.39	646.32	24.07	27.857		
3,299.99	3,289.01	3,197.29	3,108.20	12.50	17.00	96.64	-549.77	-408.31	697.41	672.54	24.87	28.042		
3,399.99	3,388.62	3,293.56	3,200.68	12.90	17.62	96.54	-571.48	-423.96	724.44	698.77	25.68	28.215		
3,499.99	3,488.22	3,389.83	3,293.16	13.30	18.24	96.45	-593.18	-439.62	751.47	724.99	26.48	28.378		
3,599.99	3,587.82	3,486.10	3,385.63	13.70	18.85	96.37	-614.89	-455.27	778.50	751.22	27.29	28.530		
3,699.99	3,687.42	3,582.37	3,478.11	14.09	19.47	96.29	-636.59	-470.93	805.53	777.44	28.09	28.674		
3,799.99	3,787.02	3,678.64	3,570.59	14.49	20.09	96.22	-658.30	-486.59	832.57	803.67	28.90	28.809		
3,899.99	3,886.62	3,774.91	3,663.06	14.89	20.71	96.15	-680.01	-502.24	859.60	829.90	29.71	28.937		
3,999.99	3,986.22	3,871.19	3,755.54	15.29	21.32	96.09	-701.71	-517.90	886.64	856.13	30.51	29.058		
4,099.99	4,085.82	3,967.46	3,848.02	15.68	21.94	96.03	-723.42	-533.56	913.68	882.36	31.32	29.172		
4,199.99	4,185.43	4,063.73	3,940.49	16.08	22.56	95.97	-745.12	-549.21	940.71	908.59	32.13	29.281		
4,299.99	4,285.03	4,160.00	4,032.97	16.48	23.18	95.92	-766.83	-564.87	967.75	934.82	32.93	29.384		
4,399.99	4,384.63	4,256.27	4,125.44	16.88	23.80	95.87	-788.53	-580.53	994.79	961.05	33.74	29.482		
4,499.99	4,484.23	4,352.54	4,217.92	17.27	24.42	95.82	-810.24	-596.18	1,021.83	987.28	34.55	29.575		
4,599.99	4,583.83	4,448.81	4,310.40	17.67	25.04	95.77	-831.94	-611.84	1,048.87	1,013.51	35.36	29.664		
4,699.99	4,682.80	4,544.69	4,402.49	18.11	25.66	96.71	-853.56	-627.43	1,076.72	1,040.50	36.23	29.722		
4,799.99	4,778.49	4,638.07	4,492.19	18.65	26.26	95.72	-874.61	-642.62	1,106.95	1,069.67	37.28	29.696		
4,899.99	4,868.51	4,742.94	4,592.86	19.33	26.93	94.92	-899.05	-658.86	1,139.45	1,100.80	38.65	29.482		
4,999.99	4,950.65	4,909.70	4,748.28	20.14	28.03	94.92	-958.01	-663.06	1,170.49	1,129.79	40.70	28.761		
5,099.99	5,022.89	5,102.18	4,908.34	21.10	29.29	94.51	-1,057.90	-628.85	1,196.64	1,153.70	42.93	27.871		
5,199.99	5,083.44	5,313.87	5,044.06	22.25	30.73	93.35	-1,196.59	-546.71	1,215.68	1,170.32	45.36	26.802		
5,299.99	5,130.83	5,528.05	5,123.77	23.57	32.37	91.29	-1,352.55	-425.19	1,226.37	1,178.13	48.24	25.424		
5,399.99	5,163.87	5,705.51	5,139.71	25.07	34.01	88.96	-1,481.30	-304.90	1,229.28	1,177.70	51.58	23.831		
5,499.99	5,181.75	5,803.54	5,138.38	26.72	35.06	88.02	-1,550.91	-235.88	1,230.17	1,175.27	54.89	22.410		
5,599.99	5,184.73	5,903.38	5,137.03	28.47	36.28	87.78	-1,621.80	-165.60	1,230.80	1,172.39	58.41	21.072		
5,699.99	5,183.83	6,003.37	5,135.67	30.32	37.63	87.76	-1,692.80	-95.20	1,231.32	1,169.23	62.09	19.832		
5,799.99	5,182.93	6,103.37	5,134.31	32.26	39.11	87.74	-1,763.81	-24.80	1,231.84	1,165.88	65.96	18.676		
5,899.99	5,182.02	6,203.37	5,132.96	34.26	40.71	87.72	-1,834.81	45.60	1,232.36	1,162.39	69.97	17.613		
5,999.99	5,181.12	6,303.37	5,131.60	36.33	42.40	87.70	-1,905.82	116.00	1,232.89	1,158.79	74.10	16.638		
6,099.99	5,180.22	6,403.36	5,130.25	38.45	44.19	87.68	-1,976.82	186.40	1,233.41	1,155.08	78.32	15.747		
6,199.99	5,179.32	6,503.36	5,128.89	40.61	46.05	87.66	-2,047.83	256.80	1,233.93	1,151.29	82.63	14.932		
6,299.99	5,178.41	6,603.36	5,127.53	42.80	47.98	87.63	-2,118.83	327.19	1,234.45	1,147.44	87.02	14.186		
6,399.99	5,177.51	6,703.36	5,126.18	45.03	49.96	87.61	-2,189.83	397.59	1,234.97	1,143.52	91.46	13.503		
6,499.99	5,176.61	6,803.35	5,124.82	47.28	52.00	87.59	-2,260.84	467.99	1,235.50	1,139.54	95.95	12.876		
6,599.99	5,175.71	6,903.35	5,123.46	49.55	54.08	87.57	-2,331.84	538.39	1,236.02	1,135.53	100.49	12.300		
6,699.99	5,174.80	7,003.35	5,122.11	51.85	56.20	87.55	-2,402.85	608.79	1,236.54	1,131.47	105.07	11.769		
6,799.99	5,173.90	7,103.35	5,120.75	54.16	58.35	87.53	-2,473.85	679.19	1,237.06	1,127.38	109.69	11.278		
6,899.99	5,173.00	7,203.34	5,119.40	56.49	60.54	87.51	-2,544.86	749.59	1,237.59	1,123.26	114.33	10.825		
6,999.99	5,172.09	7,303.34	5,118.04	58.83	62.74	87.49	-2,615.86	819.99	1,238.11	1,119.11	119.00	10.404		
7,099.99	5,171.19	7,403.34	5,116.68	61.18	64.97	87.47	-2,686.87	890.39	1,238.63	1,114.94	123.70	10.014		

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



Scientific Drilling, Intl

Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well 608H - Slot 2
Project:	Nageezi Unit	TVD Reference:	GL 6877' & RKB 14' @ 6891.00usft (Aztec 920)
Reference Site:	H33 2409	MD Reference:	GL 6877' & RKB 14' @ 6891.00usft (Aztec 920)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	608H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	Grand Junction
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design H33 2409 - 324H - Original Drilling - APD													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+IGRF													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
7,199.99	5,170.29	7,503.34	5,115.33	63.54	67.23	87.45	-2,757.87	960.78	1,239.16	1,110.74	128.41	9.650		
7,299.99	5,169.39	7,603.33	5,113.97	65.91	69.49	87.44	-2,828.88	1,031.18	1,239.68	1,106.53	133.15	9.311		
7,399.99	5,168.48	7,703.33	5,112.61	68.29	71.78	87.42	-2,899.88	1,101.58	1,240.20	1,102.31	137.90	8.994		
7,499.99	5,167.58	7,803.33	5,111.26	70.68	74.08	87.40	-2,970.89	1,171.98	1,240.73	1,098.06	142.66	8.697		
7,599.98	5,166.68	7,903.33	5,109.90	73.08	76.39	87.38	-3,041.89	1,242.38	1,241.25	1,093.81	147.44	8.418		
7,699.98	5,165.78	8,003.32	5,108.54	75.48	78.72	87.36	-3,112.90	1,312.78	1,241.77	1,089.54	152.24	8.157		
7,799.98	5,164.87	8,103.32	5,107.19	77.88	81.06	87.34	-3,183.90	1,383.18	1,242.30	1,085.26	157.04	7.911		
7,899.98	5,163.97	8,203.32	5,105.83	80.29	83.40	87.32	-3,254.91	1,453.58	1,242.82	1,080.97	161.85	7.679		
7,999.98	5,163.07	8,303.32	5,104.48	82.71	85.76	87.30	-3,325.91	1,523.97	1,243.35	1,076.67	166.68	7.460		
8,099.98	5,162.16	8,403.31	5,103.12	85.13	88.12	87.28	-3,396.91	1,594.37	1,243.87	1,072.36	171.51	7.252		
8,199.98	5,161.26	8,503.31	5,101.76	87.55	90.49	87.26	-3,467.92	1,664.77	1,244.40	1,068.05	176.35	7.056		
8,299.98	5,160.36	8,603.31	5,100.41	89.98	92.86	87.24	-3,538.92	1,735.17	1,244.92	1,063.73	181.20	6.871		
8,399.98	5,159.46	8,703.31	5,099.05	92.41	95.25	87.22	-3,609.93	1,805.57	1,245.45	1,059.40	186.05	6.694		
8,499.98	5,158.55	8,803.30	5,097.69	94.85	97.64	87.20	-3,680.93	1,875.97	1,245.97	1,055.06	190.91	6.527		
8,599.98	5,157.65	8,903.30	5,096.34	97.28	100.03	87.18	-3,751.94	1,946.37	1,246.50	1,050.72	195.77	6.367		
8,699.98	5,156.75	9,003.30	5,094.98	99.72	102.43	87.16	-3,822.94	2,016.77	1,247.02	1,046.38	200.64	6.215		
8,799.98	5,155.85	9,103.30	5,093.63	102.17	104.83	87.14	-3,893.95	2,087.17	1,247.55	1,042.03	205.52	6.070		
8,899.98	5,154.94	9,203.29	5,092.27	104.61	107.24	87.12	-3,964.95	2,157.56	1,248.08	1,037.68	210.40	5.932		
8,999.98	5,154.04	9,303.29	5,090.91	107.06	109.65	87.10	-4,035.96	2,227.96	1,248.60	1,033.32	215.28	5.800		
9,099.98	5,153.14	9,403.29	5,089.56	109.50	112.07	87.08	-4,106.96	2,298.36	1,249.13	1,028.96	220.17	5.673		
9,199.98	5,152.23	9,503.29	5,088.20	111.95	114.49	87.06	-4,177.97	2,368.76	1,249.65	1,024.59	225.06	5.552		
9,299.98	5,151.33	9,603.28	5,086.84	114.41	116.91	87.04	-4,248.97	2,439.16	1,250.18	1,020.22	229.96	5.437		
9,399.98	5,150.43	9,703.28	5,085.49	116.86	119.34	87.02	-4,319.98	2,509.56	1,250.71	1,015.85	234.85	5.325		
9,499.98	5,149.53	9,803.28	5,084.13	119.31	121.77	87.00	-4,390.98	2,579.96	1,251.23	1,011.48	239.75	5.219		
9,599.98	5,148.62	9,903.28	5,082.77	121.77	124.20	86.98	-4,461.99	2,650.36	1,251.76	1,007.10	244.66	5.116		
9,699.98	5,147.72	10,003.27	5,081.42	124.23	126.63	86.96	-4,532.99	2,720.75	1,252.29	1,002.72	249.56	5.018		
9,799.98	5,146.82	10,103.27	5,080.06	126.69	129.06	86.94	-4,603.99	2,791.15	1,252.81	998.34	254.47	4.923		
9,899.98	5,145.92	10,203.27	5,078.71	129.15	131.50	86.92	-4,675.00	2,861.55	1,253.34	993.96	259.38	4.832		
9,999.98	5,145.01	10,303.27	5,077.35	131.61	133.94	86.90	-4,746.00	2,931.95	1,253.87	989.58	264.29	4.744		
10,099.98	5,144.11	10,403.26	5,075.99	134.07	136.38	86.88	-4,817.01	3,002.35	1,254.40	985.19	269.21	4.660		
10,199.98	5,143.21	10,503.26	5,074.64	136.53	138.83	86.86	-4,888.01	3,072.75	1,254.92	980.80	274.12	4.578		
10,299.98	5,142.30	10,603.26	5,073.28	139.00	141.27	86.85	-4,959.02	3,143.15	1,255.45	976.41	279.04	4.499		
10,399.98	5,141.40	10,703.26	5,071.92	141.46	143.72	86.83	-5,030.02	3,213.55	1,255.98	972.02	283.96	4.423		
10,499.98	5,140.50	10,803.25	5,070.57	143.93	146.17	86.81	-5,101.03	3,283.95	1,256.51	967.63	288.88	4.350		
10,599.98	5,139.60	10,903.25	5,069.21	146.39	148.62	86.79	-5,172.03	3,354.34	1,257.04	963.23	293.81	4.278		
10,699.98	5,138.69	11,003.25	5,067.86	148.86	151.07	86.77	-5,243.04	3,424.74	1,257.57	958.84	298.73	4.210		
10,799.98	5,137.79	11,103.25	5,066.50	151.33	153.53	86.75	-5,314.04	3,495.14	1,258.09	954.44	303.65	4.143		
10,899.98	5,136.89	11,203.24	5,065.14	153.80	155.98	86.73	-5,385.05	3,565.54	1,258.62	950.04	308.58	4.079		
10,999.98	5,135.99	11,303.24	5,063.79	156.27	158.44	86.71	-5,456.05	3,635.94	1,259.15	945.64	313.51	4.016		
11,099.98	5,135.08	11,403.24	5,062.43	158.74	160.89	86.69	-5,527.06	3,706.34	1,259.68	941.24	318.44	3.956		
11,199.98	5,134.18	11,503.24	5,061.07	161.21	163.35	86.67	-5,598.06	3,776.74	1,260.21	936.84	323.37	3.897		
11,299.98	5,133.28	11,582.40	5,060.00	163.68	165.30	86.66	-5,654.27	3,832.47	1,260.91	932.90	328.01	3.844		
11,399.98	5,132.37	11,582.40	5,060.00	166.15	165.30	86.66	-5,654.27	3,832.47	1,267.04	936.72	330.32	3.836 SF		
11,499.98	5,131.47	11,582.40	5,060.00	168.62	165.30	86.66	-5,654.27	3,832.47	1,280.98	950.35	330.63	3.874		
11,599.98	5,130.57	11,582.40	5,060.00	171.09	165.30	86.66	-5,654.27	3,832.47	1,302.46	973.41	329.05	3.958		
11,663.05	5,130.00	11,582.40	5,060.00	172.65	165.30	86.66	-5,654.27	3,832.47	1,319.73	992.56	327.17	4.034		

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



Scientific Drilling, Intl

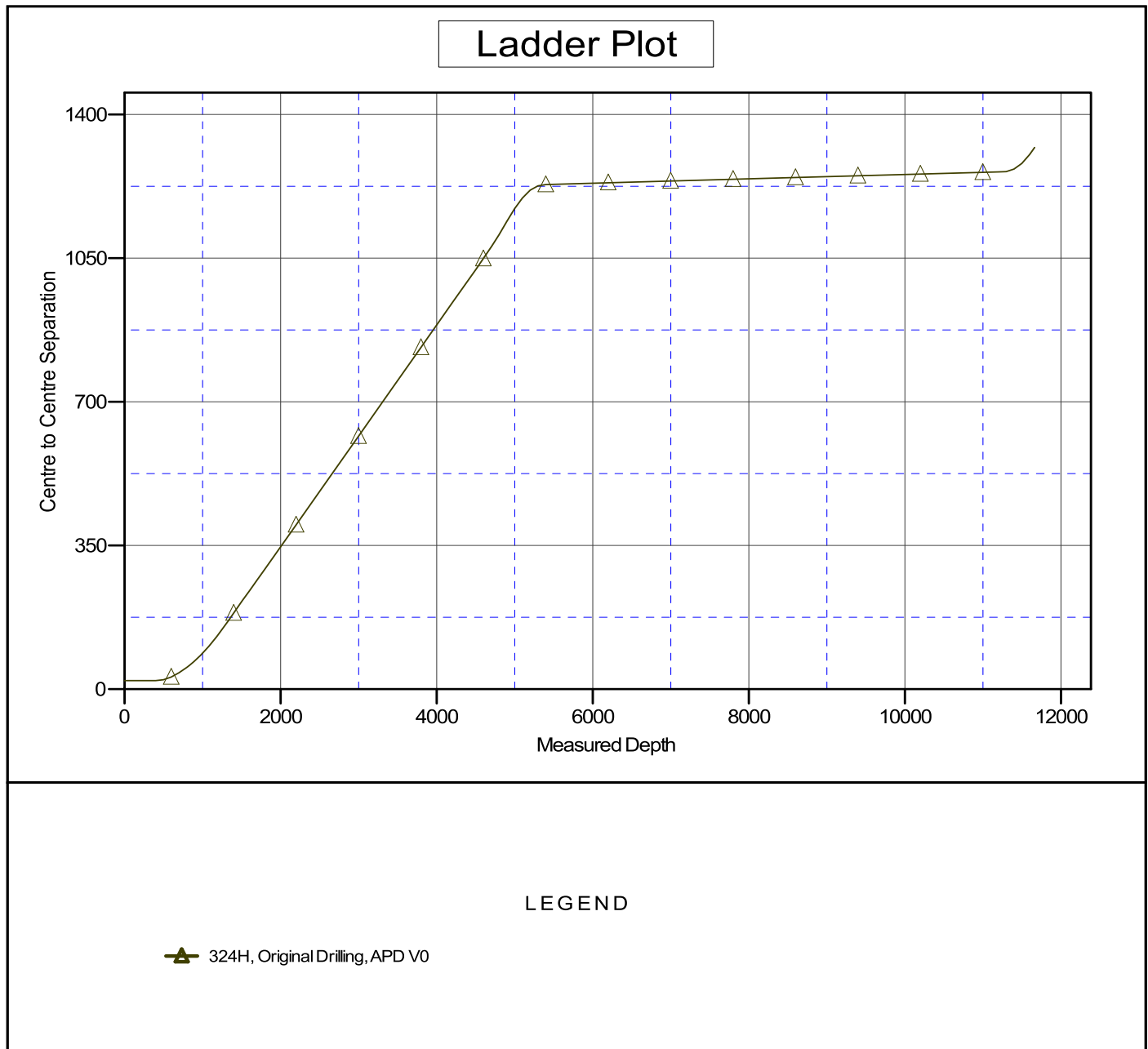
Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well 608H - Slot 2
Project:	Nageezi Unit	TVD Reference:	GL 6877' & RKB 14' @ 6891.00usft (Aztec 920)
Reference Site:	H33 2409	MD Reference:	GL 6877' & RKB 14' @ 6891.00usft (Aztec 920)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	608H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	Grand Junction
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Reference Depths are relative to GL 6877' & RKB 14' @ 6891.00usft (A)
 Offset Depths are relative to Offset Datum
 Central Meridian is -107.8333334

Coordinates are relative to: 608H - Slot 2
 Coordinate System is US State Plane 1983, New Mexico Western Zone
 Grid Convergence at Surface is: 0.03°



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



Scientific Drilling, Intl

Anticollision Report

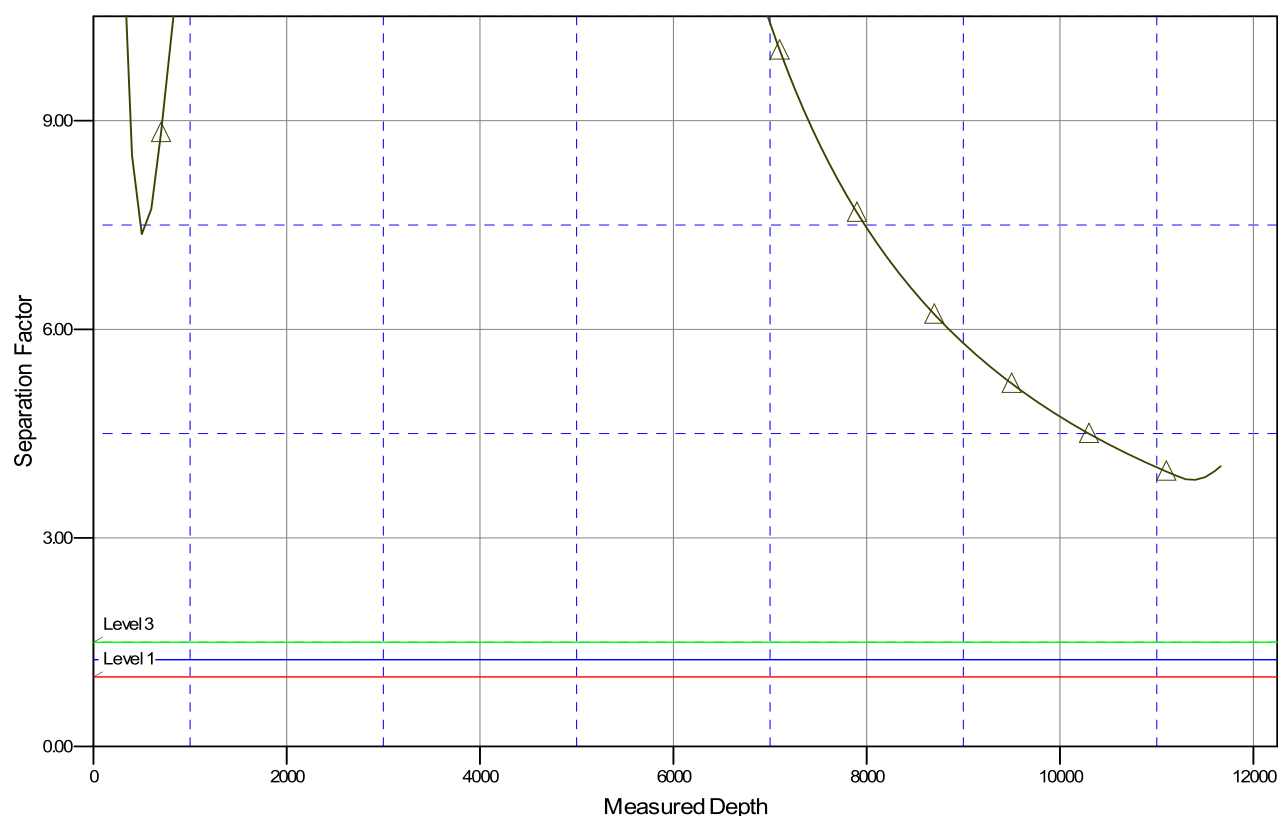


Company:	DJR Operating	Local Co-ordinate Reference:	Well 608H - Slot 2
Project:	Nageezi Unit	TVD Reference:	GL 6877' & RKB 14' @ 6891.00usft (Aztec 920)
Reference Site:	H33 2409	MD Reference:	GL 6877' & RKB 14' @ 6891.00usft (Aztec 920)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	608H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	Grand Junction
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Reference Depths are relative to GL 6877' & RKB 14' @ 6891.00usft (A)
 Offset Depths are relative to Offset Datum
 Central Meridian is -107.8333334

Coordinates are relative to: 608H - Slot 2
 Coordinate System is US State Plane 1983, New Mexico Western Zone
 Grid Convergence at Surface is: 0.03°

Separation Factor Plot



LEGEND

▲ 324H, Original Drilling, APD V0

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit Original
to Appropriate
District Office

GAS CAPTURE PLAN

Date: 2/4/2020

☒ Original

Operator & OGRID No.: **DJR Operating LLC. ; 371838**

☐ Amended - Reason for Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Nageezi Unit 608H	Pending	SENE, Section 33, T24N, R9W	1354' FNL, 544' FEL	620	Flared	
Nageezi Unit 633H	Pending	SENE, Section 33, T24N, R9W	1363' FNL, 562' FEL	610	Flared	

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to **Enterprise Field Services, LLC (Enterprise)** and will be connected to **Enterprise's** low/high pressure gathering system located in **San Juan** County, New Mexico. It will require approximately **1,113'** of pipeline to connect the facility to DJR Operating LLC. low/high pressure **Escrito Trunk in Sec. 34, T24N, R9W** which ties into **Enterprise's** existing pipeline in **Section 12, T24N, R10W**. **DJR Operating LLC**, provides (periodically) to **Enterprise** a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, **DJR Operating LLC**, and **Enterprise** have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at the **Chaco Processing Plant** located in **Sec. 16, Twn 26N, Rng 12W, San Juan** County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on **Enterprise** system at that time. Based on current information, it is **DJR Operating LLC's** belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
 - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
 - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
 - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

COMMENTS

Action 19422

COMMENTS

Operator:			OGRID:	Action Number:	Action Type:
DJR OPERATING, LLC 1 Road 3263 Aztec, NM87410			371838	19422	FORM 3160-3
Created By	Comment				Comment Date
ahvermersch	See additional NMOCD COA's on attached letter.				03/02/2021

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CONDITIONS

Action 19422

CONDITIONS OF APPROVAL

Operator:	DJR OPERATING, LLC	1 Road 3263	Aztec, NM87410	OGRID:	371838	Action Number:	19422	Action Type:	FORM 3160-3
OCD Reviewer	Condition								
ahvermersch	Notify OCD 24 hours prior to casing & cement								