

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: 2/21/2020

Operator: DJR **Well Name and Number:** Nageezi Unit 319H

API#: 30-045-38199 , **Section:** 2, **Township:** 23N, **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

12/7/2020
Date

Form 3160-3
(June 2015)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

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

1a. Type of work: ☒ DRILL ☐ REENTER
 1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other
 1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☒ Multiple Zone

5. Lease Serial No.
NMNM008005

6. If Indian, Allottee or Tribe Name

7. If Unit or CA Agreement, Name and No.
NMNM 132981A

8. Lease Name and Well No.

NAGEEZI UNIT

319H

2. Name of Operator
DJR OPERATING LLC

9. API Well No. 30-045-38199

3a. Address
1700 LINCOLN STREET, SUITE 2800, DENVER, CO 8023b. Phone No. (include area code)
(505) 632-347610. Field and Pool, or Exploratory
BASIN MANCOS Nageezi Unit Mancos

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

At surface NWNW / 10 FNL / 277 FWL / LAT 36.263257 / LONG -107.766482

At proposed prod. zone NWNW / 1035 FNL / 874 FWL / LAT 36.274993 / LONG -107.78238

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 2/T23N/R9W/NMP14. Distance in miles and direction from nearest town or post office*
40 miles12. County or Parish
SAN JUAN13. State
NM15. Distance from proposed*
location to nearest
property or lease line, ft.
(Also to nearest drig. unit line, if any)
10 feet16. No of acres in lease
2083.6617. Spacing Unit dedicated to this well
521.6618. Distance from proposed location*
to nearest well, drilling, completed,
applied for, on this lease, ft. 20 feet19. Proposed Depth
5015 feet / 11591 feet20. BLM/BIA Bond No. in file
FED: NMB00146421. Elevations (Show whether DF, KDB, RT, GL, etc.)
6864 feet22. Approximate date work will start*
07/24/202023. Estimated duration
12 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.

2. A Drilling Plan.

3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).

4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).

5. Operator certification.

6. Such other site specific information and/or plans as may be requested by the BLM.

25. Signature
(Electronic Submission)Name (Printed/Typed)
SHAW N / Ph: (505) 632-3476Date
02/21/2020Title
Regulatory SpecialistApproved by (Signature)
(Electronic Submission)Name (Printed/Typed)
RICHARD FIELDS / Ph: (505) 564-7612Date
11/19/2020Title
Field ManagerOffice
Farmington Field Office

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 I

1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6181 Fax: (575) 393-0720

DISTRICT II

611 S. First St., Artesia, N.M. 88210
Phone: (505) 748-1288 Fax: (505) 748-9720

DISTRICT III

1000 Rio Brazos Rd., Astec, N.M. 87410
Phone: (505) 334-8178 Fax: (505) 334-8170

DISTRICT IV

1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 478-3480 Fax: (505) 478-8482

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 1, 2011

Submit 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 30-045-38199	² Pool Code 98080	³ Pool Name NAGEEZI UNIT MANCOS OIL POOL
⁴ Property Code 325268	⁵ Property Name NAGEEZI UNIT	⁶ Well Number 319H
⁷ GRID No. 371838	⁸ Operator Name DJR OPERATING, LLC	⁹ Elevation 6864'

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
D	2	23N	9W	4	10'	NORTH	277'	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
D	34	24N	9W		1035'	NORTH	874'	WEST	SAN JUAN

12 Dedicated Acres PENETRATED SPACING UNIT:
SEC 35: SW/SW (40 AC.); SEC 2: NW/NW (40.85 AC.);
SEC 3: NE/NE (40.81 AC.); SEC 34: SE/4, SW/NE,
NE/SW & NW/4 (521.66 AC.) = 521.66 ACRES TOTAL

Joint or Infill

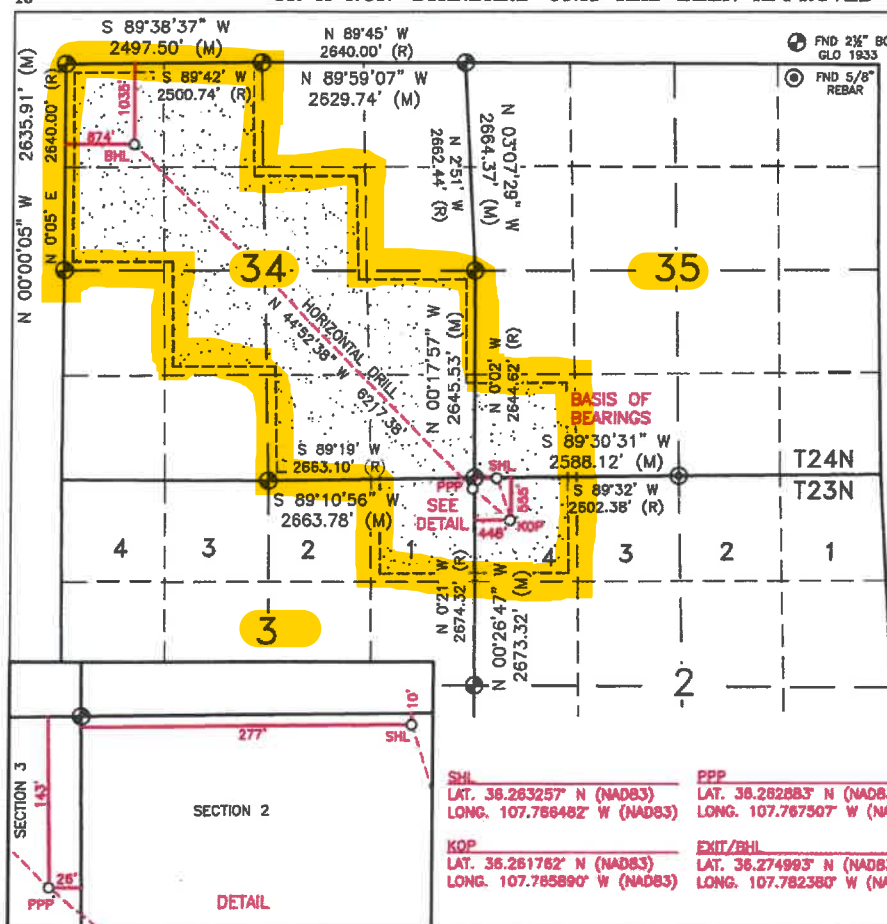
¹⁴ Consolidation Code

15 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 02/21/20
Signature Date

Shaw-Marie Ford

Printed Name _____

sford@dirllc.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.

APRIL 4, 2018

Date of Survey _____
Signature and Seal of Professional Surveyor: _____



Certificate Number 11393

DISTRICT I

1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 593-8161 Fax: (575) 593-0720

DISTRICT II

811 S. First St., Artesia, N.M. 88210
Phone: (575) 748-1288 Fax: (575) 748-9720

DISTRICT III

1000 Rio Blanco Rd., Artesia, N.M. 87410
Phone: (505) 834-8178 Fax: (505) 334-8170

DISTRICT IV

1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 478-9460 Fax: (505) 478-9462

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, NM 87505

☐ AMENDED REPORT

DJR OPERATING, LLC
NAGEEZI UNIT #319H

NW CORNER SEC. 34

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

W/4 CORNER SEC. 34

LAT. 36.270582° N (NAD83)
LONG. 107.785347° W (NAD83)

N/4 CORNER SEC. 34

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

S/4 CORNER SEC. 35

LAT. 36.263339° N (NAD83)
LONG. 107.758853° W (NAD83)

E/4 CORNER SEC. 34

LAT. 36.270545° N (NAD83)
LONG. 107.767462° W (NAD83)

SE CORNER SEC. 34

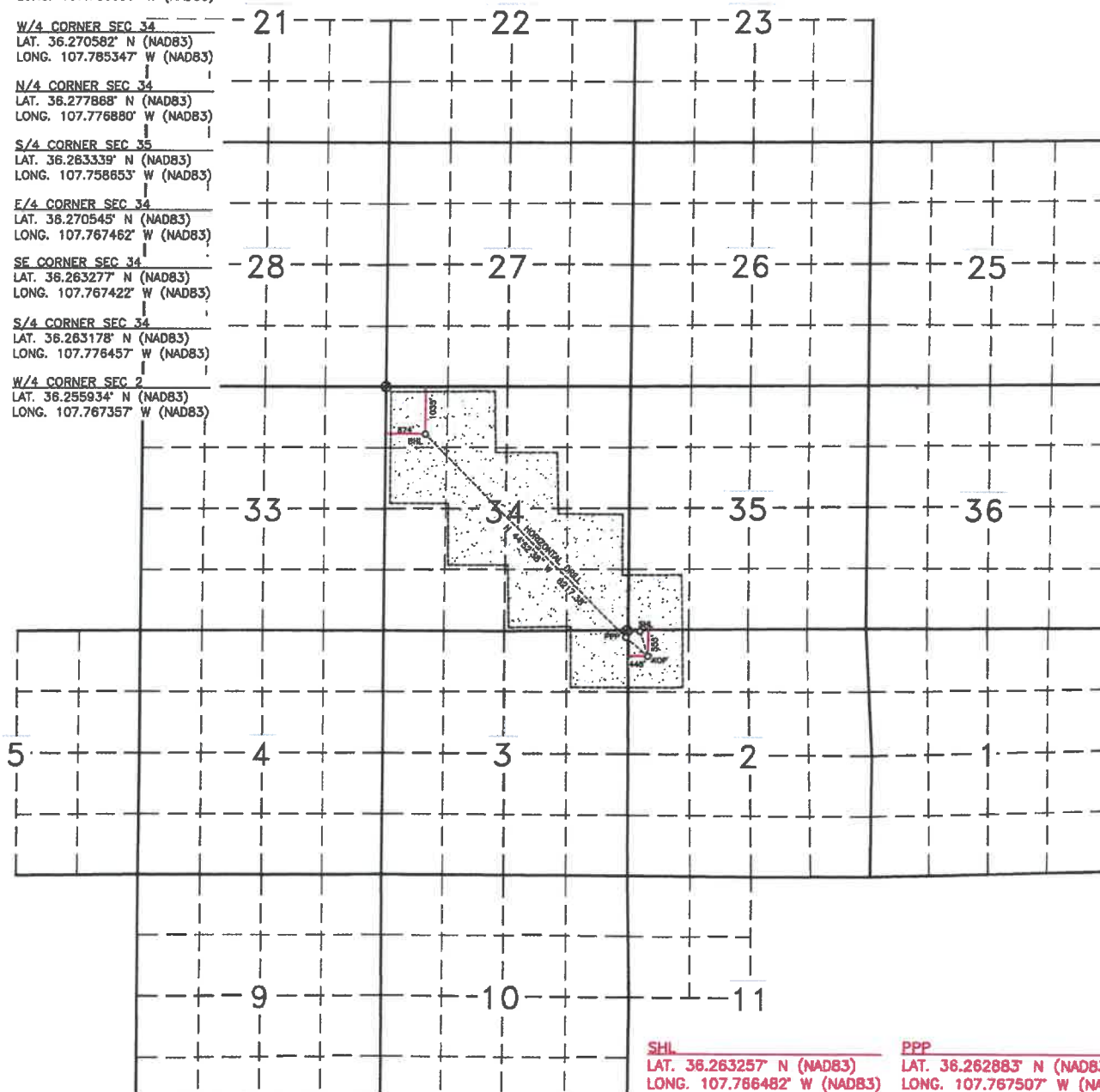
LAT. 36.263277° N (NAD83)
LONG. 107.767422° W (NAD83)

S/4 CORNER SEC. 34

LAT. 36.263178° N (NAD83)
LONG. 107.776457° W (NAD83)

W/4 CORNER SEC. 2

LAT. 36.255934° N (NAD83)
LONG. 107.767357° W (NAD83)



PENETRATED SPACING UNIT;
SEC 35: SW/SW (40 AC.); SEC 2: NW/NW (40.85 AC.); SEC 3:
NE/NE (40.81 AC.); SEC 34: SE/4, SW/NE, NE/SW & NW/4
(521.66 AC.) = 521.66 ACRES TOTAL
TOTAL 10,415.12 ACRES: SEC. 21-23 (S/2); 25-28, 33-36, 1-4,
9-10 (ALL); 5 (W/2); 11 (NW/4) - UNDIVIDED UNIT

SHL

LAT. 36.263257° N (NAD83)
LONG. 107.766482° W (NAD83)

PPP

LAT. 36.262883° N (NAD83)
LONG. 107.767507° W (NAD83)

KOP

LAT. 36.261782° N (NAD83)
LONG. 107.765890° W (NAD83)

EXIT/BHL

LAT. 36.274993° N (NAD83)
LONG. 107.782380° W (NAD83)

Rev 2



DRILLING PLAN **Nageezi Unit 319H** **San Juan County, New Mexico**

Surface Location

277-ft FWL & 10-ft FNL
 Sec 2 T23N R09W
 Graded Elevation 6864' MSL
 RKB Elevation 6878' (14' KB)

SHL Geographical Coordinates (NAD-83)

Latitude 36.2632570° N
 Longitude 107.7664820° W

Kick Off Point for Horizontal Build Curve

4290-ft MD
 4246-ft TVD

Local Coordinates (from SHL)

544-ft South
 175-ft East

Heel Location (Pay zone entry)

26-ft FEL & 143-ft FNL
 Sec 3 T23N R9W

Heel Geographical Coordinates (NAD-83)

Latitude 36.262883° N
 Longitude 107.76750670° W

Bottom Hole Location (TD)

874-ft FWL & 1035-ft FNL
 Sec 27 T24N R9W

BHL Geographical Coordinates (NAD-83)

Latitude 36.2749932° N
 Longitude 107.7823797° W

Well objectives

This well is planned as a 6220-ft lateral in the Gallup B sand.

Bottom Hole temperature and pressure

The temperature in the Gallup B horizontal objective is 138°F. Bottom hole pressure in the Gallup B 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	686	686	Sd	W	8.3	8.4 – 8.8
Kirtland	841	839	Sh	-	8.3	8.4 – 8.8
Fruitland	1134	1128	C	G	8.3	9.0 - 9.5
Pictured Cliffs	1484	1474	Sd	W	8.3	9.0 - 9.5
Lewis	1582	1571	Sh	-		9.0 - 9.5
Chacra	2233	2214	Sd	-	8.3	9.0 - 9.5
Menefee	2991	2963	Sd, C	G	8.3	9.0 - 9.5
Point Lookout	3957	3917	Sd	-	8.3	9.0 - 9.5
Mancos	4134	4092	Sh	-		9.0 - 9.5
Mancos Silt	4454	4410	Slt	O/G	6.6	9.0 - 9.5
Gallup A	5090	4905	Slt	O/G	6.6	9.0 - 9.5
Gallup B	5199	4944	Sd	O/G	6.6	8.8 -9.0
Gallup C	NP	NP	Sd	O/G	6.6	8.8 -9.0
Target	5373	4969	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	5322	surf	4967	surface
4-1/2"	6-1/8"	11.6	P-110	BTC	5044	11591	4883	5015	5044

Note: all casing will be new

Rev 2



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

9-5/8" Surface Casing

	Lead
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

	Lead	Tail
	BJ Services	BJ Services
Type	III	Poz/G
Planned top	Surface	3790-ft
Density (ppg)	12.30	13.50
Yield (cf/sx)	2.34	1.50
Mix water (gal/sx)	13.26	7.20
Volume (sx)	379	253
Volume (bbls)	158	67
Volume (cu. ft.)	886	378
Excess %	50	50

Rev 2

**4-1/2" Production Liner**

	BJ Services
Type	Poz/G
Planned top	5044-ft
Density (ppg)	13.3
Yield (cf/sx)	1.56
Mix water (gal/sx)	7.71
Volume (sx)	550
Volume (bbls)	153
Volume (cu.ft)	859
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 geograph 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 – 5322	9.0 – 9.5	38 – 45	8 – 14	<20
Production	Low solids, non-dispersed	5322 – 11591	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.

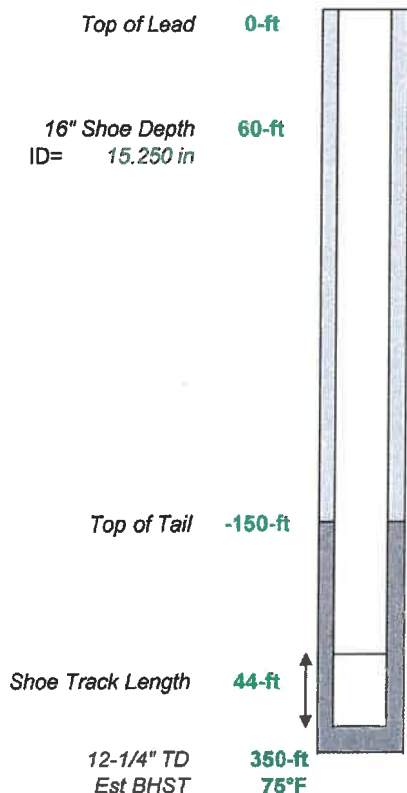
Electric logging: No open hole electric logs are programmed. A cased hole GR/CCL will be run during completions for perforating depth control.

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

Assumed Hole Size	12.2500 in
Casing OD	9.6250 in
Casing ID	8.9210 in
% Excess Lead	50%
% Excess Tail	
Capacity CH Ann	0.1359 bbl/ft
Capacity OH Ann	0.0658 bbl/ft
Capacity Pipe	0.0773 bbl/ft

9-5/8" 36# K-55 ST&C

Pipe OD	9.625 in
Coupling OD	10.625 in
ID	8.921 in
Drift	8.765 in
Burst	3520 psi
Collapse	2020 psi
Tensile (body)	564 kips
Tensile (joint)	423 kips
Min Torque	1830 ft-lbs
Opt Torque	2440 ft-lbs
Max Torque	3050 ft-lbs

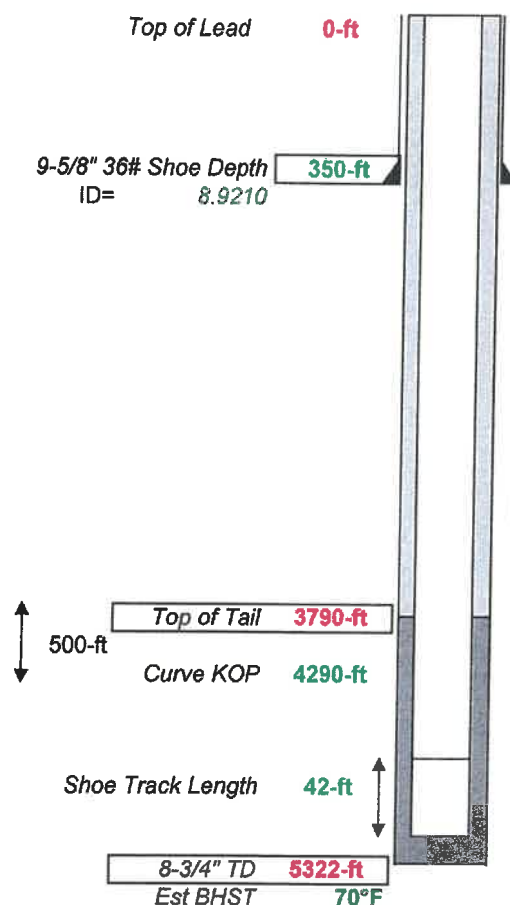
Lead Slurry		Properties	
Redi Mix Type I/II		Density	14.50 ppg
20% Fly Ash		Yield	1.61 cf/sk
		Total Mix Fluid	7.41 gal/sk
		Est pump time (70Bc)	NA
		8-hr compressive	475 psi
		24-hr compressive	1375 psi
Tail Slurry		Properties	
		Density	ppg
		Yield	cf/sk
		Total Mix Fluid	gal/sk
		Est pump time (70Bc)	
		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 319H



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

		Properties	
Type III		Density	12.30 ppg
BA-90	5 lb/sx%	Yield	2.3404 cf/sk
KCI	3.00%	Total Mix Fluid	13.26 gal/sk
GW-86	0.10%	Thickening Time	3:11 hr:min
FL-66	0.20%	Time to 50 psi (80°F)	5:10 hr:min
R-3	0.50%	24-hr UCA (80°F)	659 psi
FP-25	0.30%		

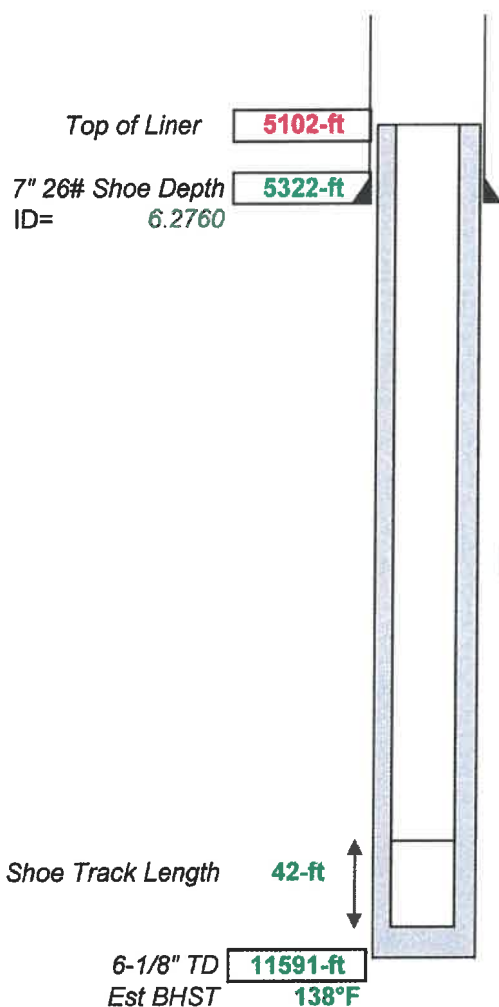
BJ Tail Slurry

		Properties	
G+Pozz	50:50	Density	13.50 ppg
BA-90	3 lb/sx	Yield	1.4946 cf/sk
FL-66	0.40%	Total Mix Fluid	7.24 gal/sk
FP-25	0.30%	Thickening Time	3:26 hr:min
Sod. Met	0.50%	Time to 50 psi (135°F)	2:55 hr:min
Gyp	3.00%	Time to 500 psi (135°F)	6:40 hr:min

Volumes

Lead Volume	158	bbls	379	sx
Tail Volume	67	bbls	253	sx
Approx Displacement	202	bbls		
Total Volume	427	bbls		

4-1/2" Liner Cementing Nageezi Unit 319H

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

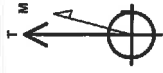
Lead Volume **152** bbls **546** sxApprox Displacement **125** bblsTotal Volume **277** bbls

Company: DJR Operating
Project: Nageezi Unit
Site: M35 2409
Well: 319H
Wellbore: Original Drilling
Design: APD

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

Scientific Drilling



Azimuths to True North
Magnetic North: 8.78°
Strength: 49423.3nT
Dip Angle: 62.78°
Date: 12/20/2019
Model: HDGM_FILE

WELL DETAILS: 319H

GL 8864' & RKB 14' @ 6878.00usft (Aztec 920)
+N/-S +E/-W Northing Easting Longitude
0.00 0.00 1915131.17 2742799.52 -107.7664820 1

Plan: APD (319H/Original Drilling)
Created By: Janie Collins Date: 9:58, January 08 2020

DESIGN TARGET DETAILS

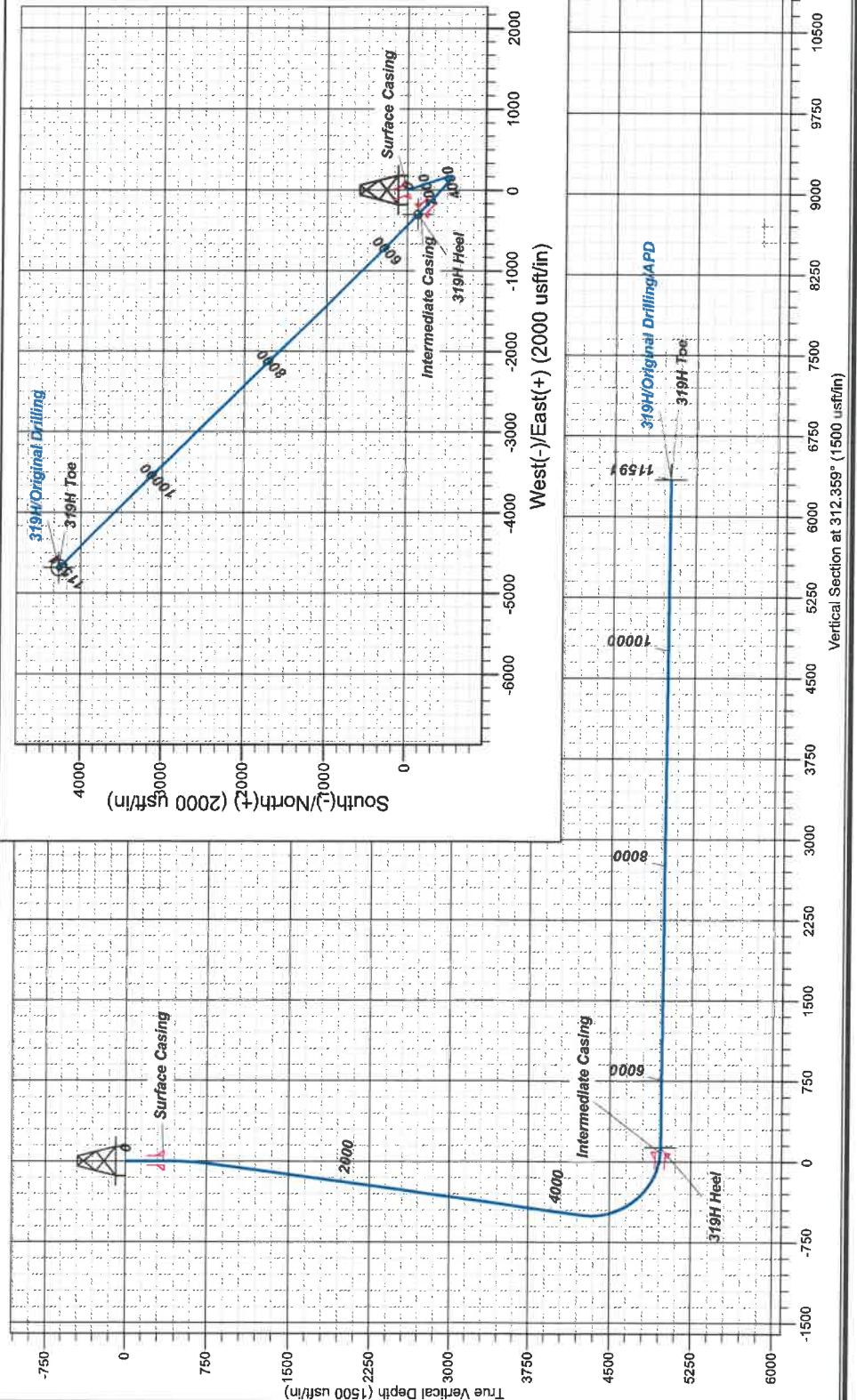
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
319H Heel	4966.00	-136.14	-302.08	1914904.82	2742487.53	36.2748832	-107.7675067
319H Toe	5015.00	4272.64	-4685.96	1919400.58	2738110.61	36.2748832	-107.7623757

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	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	
820.18	8.90	162.136	820.18	0.00	0.00	0.00	0.00	0.00	
4269.98	8.90	162.136	4269.98	-543.99	175.33	0.00	162.14	29.96	
5373.37	89.58	315.162	5373.37	-136.14	-302.08	9.00	162.70	131.48	319H Heel
11590.92	89.58	315.162	11590.92	4272.64	-4685.96	0.00	0.00	6341.43	319H Toe

CASING DETAILS

TVD	MD	Name
350.00	350.00	Surface Casing
4966.59	322.40	Intermediate Casing



FORMATION DETAILS

MDPath	Formation
686.61	Ojo Alamo
839.00	Kirtland
1128.00	Kirtland
1474.00	Frutland
1571.00	Pictured Cliffs
2214.00	Lewis
2963.00	Chaco
3917.00	Menefee
4092.00	Point Lookout
4410.00	Mancos
4905.00	Mancos Silt
4944.00	Gallup A
5198.81	Gallup B



DJR Operating

Nageezi Unit

M35 2409

319H - Slot 1

Original Drilling

Plan: APD

Standard Planning Report

08 January, 2020



www.scientificdrilling.com



Scientific Drilling, Intl

Planning Report



Database:	Grand Junction	Local Co-ordinate Reference:	Well 319H - Slot 1
Company:	DJR Operating	TVD Reference:	GL 6864' & RKB 14' @ 6878.00usft (Aztec 920)
Project:	Nageezi Unit	MD Reference:	GL 6864' & RKB 14' @ 6878.00usft (Aztec 920)
Site:	M35 2409	North Reference:	True
Well:	319H	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	M35 2409		
Site Position:		Northing:	1,915,230.54 usft
From:	Lat/Long	Easting:	2,742,788.84 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in
		Latitude:	36.2635300
		Longitude:	-107.7665180
		Grid Convergence:	0.04 °

Well	319H - Slot 1		
Well Position	+N/-S	-99.38 usft	Northing: 1,915,131.17 usft
	+E/-W	10.61 usft	Easting: 2,742,799.52 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	Latitude: 36.2632570
			Longitude: -107.7664820
			Ground Level: 6,864.00 usft

Wellbore	Original Drilling				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM_FILE	12/20/2019	8.78	62.78	49,423.30000000

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	312.359	

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	
820.18	8.90	162.136	818.39	-32.86	10.59	2.00	2.00	0.00	162.14	
4,289.98	8.90	162.136	4,246.38	-543.99	175.33	0.00	0.00	0.00	0.00	
5,373.37	89.58	315.162	4,969.00	-136.14	-302.08	9.00	7.45	14.12	152.78	319H Heel
11,590.92	89.58	315.162	5,015.00	4,272.64	-4,685.96	0.00	0.00	0.00	0.00	319H Toe



Scientific Drilling, Intl

Planning Report



Database:	Grand Junction	Local Co-ordinate Reference:	Well 319H - Slot 1
Company:	DJR Operating	TVD Reference:	GL 6864' & RKB 14' @ 6878.00usft (Aztec 920)
Project:	Nageezi Unit	MD Reference:	GL 6864' & RKB 14' @ 6878.00usft (Aztec 920)
Site:	M35 2409	North Reference:	True
Well:	319H	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	162.136	400.00	-0.10	0.03	-0.09	2.00	2.00	0.00
500.00	2.50	162.136	499.96	-2.60	0.84	-2.37	2.00	2.00	0.00
600.00	4.50	162.136	599.77	-8.41	2.71	-7.67	2.00	2.00	0.00
700.00	6.50	162.136	699.30	-17.53	5.65	-15.98	2.00	2.00	0.00
800.00	8.50	162.136	798.44	-29.95	9.65	-27.31	2.00	2.00	0.00
820.18	8.90	162.136	818.39	-32.86	10.59	-29.96	2.00	2.00	0.00
900.00	8.90	162.136	897.25	-44.61	14.38	-40.69	0.00	0.00	0.00
1,000.00	8.90	162.136	996.04	-59.34	19.13	-54.12	0.00	0.00	0.00
1,100.00	8.90	162.136	1,094.84	-74.08	23.88	-67.55	0.00	0.00	0.00
1,200.00	8.90	162.136	1,193.63	-88.81	28.62	-80.99	0.00	0.00	0.00
1,300.00	8.90	162.136	1,292.43	-103.54	33.37	-94.42	0.00	0.00	0.00
1,400.00	8.90	162.136	1,391.22	-118.27	38.12	-107.85	0.00	0.00	0.00
1,500.00	8.90	162.136	1,490.02	-133.00	42.87	-121.29	0.00	0.00	0.00
1,600.00	8.90	162.136	1,588.81	-147.73	47.61	-134.72	0.00	0.00	0.00
1,700.00	8.90	162.136	1,687.61	-162.46	52.36	-148.15	0.00	0.00	0.00
1,800.00	8.90	162.136	1,786.40	-177.19	57.11	-161.59	0.00	0.00	0.00
1,900.00	8.90	162.136	1,885.20	-191.92	61.86	-175.02	0.00	0.00	0.00
2,000.00	8.90	162.136	1,983.99	-206.65	66.61	-188.46	0.00	0.00	0.00
2,100.00	8.90	162.136	2,082.78	-221.39	71.35	-201.89	0.00	0.00	0.00
2,200.00	8.90	162.136	2,181.58	-236.12	76.10	-215.32	0.00	0.00	0.00
2,300.00	8.90	162.136	2,280.37	-250.85	80.85	-228.76	0.00	0.00	0.00
2,400.00	8.90	162.136	2,379.17	-265.58	85.60	-242.19	0.00	0.00	0.00
2,500.00	8.90	162.136	2,477.96	-280.31	90.35	-255.62	0.00	0.00	0.00
2,599.99	8.90	162.136	2,576.76	-295.04	95.09	-269.06	0.00	0.00	0.00
2,699.99	8.90	162.136	2,675.55	-309.77	99.84	-282.49	0.00	0.00	0.00
2,799.99	8.90	162.136	2,774.35	-324.50	104.59	-295.92	0.00	0.00	0.00
2,899.99	8.90	162.136	2,873.14	-339.23	109.34	-309.36	0.00	0.00	0.00
2,999.99	8.90	162.136	2,971.94	-353.96	114.08	-322.79	0.00	0.00	0.00
3,099.99	8.90	162.136	3,070.73	-368.69	118.83	-336.23	0.00	0.00	0.00
3,199.99	8.90	162.136	3,169.53	-383.43	123.58	-349.66	0.00	0.00	0.00
3,299.99	8.90	162.136	3,268.32	-398.16	128.33	-363.09	0.00	0.00	0.00
3,399.99	8.90	162.136	3,367.12	-412.89	133.08	-376.53	0.00	0.00	0.00
3,499.99	8.90	162.136	3,465.91	-427.62	137.82	-389.96	0.00	0.00	0.00
3,599.99	8.90	162.136	3,564.71	-442.35	142.57	-403.39	0.00	0.00	0.00
3,699.99	8.90	162.136	3,663.50	-457.08	147.32	-416.83	0.00	0.00	0.00
3,799.99	8.90	162.136	3,762.30	-471.81	152.07	-430.26	0.00	0.00	0.00
3,899.99	8.90	162.136	3,861.09	-486.54	156.82	-443.69	0.00	0.00	0.00
3,999.99	8.90	162.136	3,959.89	-501.27	161.56	-457.13	0.00	0.00	0.00
4,099.99	8.90	162.136	4,058.68	-516.00	166.31	-470.56	0.00	0.00	0.00
4,199.99	8.90	162.136	4,157.48	-530.74	171.06	-484.00	0.00	0.00	0.00
4,289.98	8.90	162.136	4,246.38	-543.99	175.33	-496.08	0.00	0.00	0.00
4,299.99	8.11	165.057	4,256.28	-545.41	175.75	-497.35	9.00	-7.90	29.19
4,399.99	4.51	251.106	4,355.83	-553.52	173.85	-501.41	9.00	-3.60	86.05
4,499.99	11.69	295.127	4,454.84	-550.49	160.93	-489.81	9.00	7.18	44.02
4,599.99	20.36	304.166	4,550.88	-536.38	137.31	-462.86	9.00	8.67	9.04
4,699.99	29.23	307.904	4,641.57	-511.56	103.58	-421.22	9.00	8.87	3.74
4,799.99	38.15	310.009	4,724.70	-476.63	60.57	-365.90	9.00	8.93	2.10



Scientific Drilling, Intl Planning Report



Database:	Grand Junction	Local Co-ordinate Reference:	Well 319H - Slot 1
Company:	DJR Operating	TVD Reference:	GL 6864' & RKB 14' @ 6878.00usft (Aztec 920)
Project:	Nageezi Unit	MD Reference:	GL 6864' & RKB 14' @ 6878.00usft (Aztec 920)
Site:	M35 2409	North Reference:	True
Well:	319H	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)
4,899.99	47.10	311.411	4,798.20	-432.46	9.33	-298.27	9.00	8.95	1.40
4,999.99	56.07	312.455	4,860.27	-380.12	-48.87	-220.00	9.00	8.96	1.04
5,099.99	65.04	313.299	4,909.38	-320.91	-112.59	-133.02	9.00	8.97	0.84
5,199.99	74.01	314.027	4,944.33	-256.28	-180.28	-39.45	9.00	8.97	0.73
5,299.99	82.99	314.692	4,964.24	-187.83	-250.27	58.38	9.00	8.98	0.67
5,373.37	89.58	315.162	4,969.00	-136.14	-302.08	131.49	9.00	8.98	0.64
5,399.99	89.58	315.162	4,969.20	-117.27	-320.85	158.08	0.00	0.00	0.00
5,499.99	89.58	315.162	4,969.94	-46.36	-391.36	257.95	0.00	0.00	0.00
5,599.99	89.58	315.162	4,970.68	24.55	-461.87	357.83	0.00	0.00	0.00
5,699.99	89.58	315.162	4,971.42	95.45	-532.37	457.71	0.00	0.00	0.00
5,799.99	89.58	315.162	4,972.16	166.36	-602.88	557.59	0.00	0.00	0.00
5,899.99	89.58	315.162	4,972.90	237.27	-673.39	657.46	0.00	0.00	0.00
5,999.99	89.58	315.162	4,973.64	308.18	-743.90	757.34	0.00	0.00	0.00
6,099.99	89.58	315.162	4,974.38	379.09	-814.41	857.22	0.00	0.00	0.00
6,199.99	89.58	315.162	4,975.12	450.00	-884.91	957.09	0.00	0.00	0.00
6,299.99	89.58	315.162	4,975.86	520.91	-955.42	1,056.97	0.00	0.00	0.00
6,399.99	89.58	315.162	4,976.60	591.82	-1,025.93	1,156.85	0.00	0.00	0.00
6,499.99	89.58	315.162	4,977.34	662.72	-1,096.44	1,256.73	0.00	0.00	0.00
6,599.99	89.58	315.162	4,978.08	733.63	-1,166.95	1,356.60	0.00	0.00	0.00
6,699.99	89.58	315.162	4,978.81	804.54	-1,237.45	1,456.48	0.00	0.00	0.00
6,799.99	89.58	315.162	4,979.55	875.45	-1,307.96	1,556.36	0.00	0.00	0.00
6,899.99	89.58	315.162	4,980.29	946.36	-1,378.47	1,656.24	0.00	0.00	0.00
6,999.99	89.58	315.162	4,981.03	1,017.27	-1,448.98	1,756.11	0.00	0.00	0.00
7,099.99	89.58	315.162	4,981.77	1,088.18	-1,519.49	1,855.99	0.00	0.00	0.00
7,199.99	89.58	315.162	4,982.51	1,159.08	-1,589.99	1,955.87	0.00	0.00	0.00
7,299.99	89.58	315.162	4,983.25	1,229.99	-1,660.50	2,055.75	0.00	0.00	0.00
7,399.99	89.58	315.162	4,983.99	1,300.90	-1,731.01	2,155.62	0.00	0.00	0.00
7,499.99	89.58	315.162	4,984.73	1,371.81	-1,801.52	2,255.50	0.00	0.00	0.00
7,599.98	89.58	315.162	4,985.47	1,442.72	-1,872.03	2,355.38	0.00	0.00	0.00
7,699.98	89.58	315.162	4,986.21	1,513.63	-1,942.53	2,455.26	0.00	0.00	0.00
7,799.98	89.58	315.162	4,986.95	1,584.54	-2,013.04	2,555.13	0.00	0.00	0.00
7,899.98	89.58	315.162	4,987.69	1,655.45	-2,083.55	2,655.01	0.00	0.00	0.00
7,999.98	89.58	315.162	4,988.43	1,726.35	-2,154.06	2,754.89	0.00	0.00	0.00
8,099.98	89.58	315.162	4,989.17	1,797.26	-2,224.57	2,854.76	0.00	0.00	0.00
8,199.98	89.58	315.162	4,989.91	1,868.17	-2,295.07	2,954.64	0.00	0.00	0.00
8,299.98	89.58	315.162	4,990.65	1,939.08	-2,365.58	3,054.52	0.00	0.00	0.00
8,399.98	89.58	315.162	4,991.39	2,009.99	-2,436.09	3,154.40	0.00	0.00	0.00
8,499.98	89.58	315.162	4,992.13	2,080.90	-2,506.60	3,254.27	0.00	0.00	0.00
8,599.98	89.58	315.162	4,992.87	2,151.81	-2,577.11	3,354.15	0.00	0.00	0.00
8,699.98	89.58	315.162	4,993.61	2,222.71	-2,647.61	3,454.03	0.00	0.00	0.00
8,799.98	89.58	315.162	4,994.35	2,293.62	-2,718.12	3,553.91	0.00	0.00	0.00
8,899.98	89.58	315.162	4,995.09	2,364.53	-2,788.63	3,653.78	0.00	0.00	0.00
8,999.98	89.58	315.162	4,995.83	2,435.44	-2,859.14	3,753.66	0.00	0.00	0.00
9,099.98	89.58	315.162	4,996.57	2,506.35	-2,929.65	3,853.54	0.00	0.00	0.00
9,199.98	89.58	315.162	4,997.31	2,577.26	-3,000.15	3,953.42	0.00	0.00	0.00
9,299.98	89.58	315.162	4,998.05	2,648.17	-3,070.66	4,053.29	0.00	0.00	0.00
9,399.98	89.58	315.162	4,998.79	2,719.07	-3,141.17	4,153.17	0.00	0.00	0.00
9,499.98	89.58	315.162	4,999.53	2,789.98	-3,211.68	4,253.05	0.00	0.00	0.00
9,599.98	89.58	315.162	5,000.27	2,860.89	-3,282.19	4,352.93	0.00	0.00	0.00
9,699.98	89.58	315.162	5,001.01	2,931.80	-3,352.69	4,452.80	0.00	0.00	0.00
9,799.98	89.58	315.162	5,001.75	3,002.71	-3,423.20	4,552.68	0.00	0.00	0.00
9,899.98	89.58	315.162	5,002.49	3,073.62	-3,493.71	4,652.56	0.00	0.00	0.00



Scientific Drilling, Intl Planning Report



Database:	Grand Junction	Local Co-ordinate Reference:	Well 319H - Slot 1
Company:	DJR Operating	TVD Reference:	GL 6864' & RKB 14' @ 6878.00usft (Aztec 920)
Project:	Nageezi Unit	MD Reference:	GL 6864' & RKB 14' @ 6878.00usft (Aztec 920)
Site:	M35 2409	North Reference:	True
Well:	319H	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)
9,999.98	89.58	315.162	5,003.23	3,144.53	-3,564.22	4,752.43	0.00	0.00	0.00
10,099.98	89.58	315.162	5,003.97	3,215.44	-3,634.73	4,852.31	0.00	0.00	0.00
10,199.98	89.58	315.162	5,004.71	3,286.34	-3,705.23	4,952.19	0.00	0.00	0.00
10,299.98	89.58	315.162	5,005.45	3,357.25	-3,775.74	5,052.07	0.00	0.00	0.00
10,399.98	89.58	315.162	5,006.19	3,428.16	-3,846.25	5,151.94	0.00	0.00	0.00
10,499.98	89.58	315.162	5,006.93	3,499.07	-3,916.76	5,251.82	0.00	0.00	0.00
10,599.98	89.58	315.162	5,007.67	3,569.98	-3,987.27	5,351.70	0.00	0.00	0.00
10,699.98	89.58	315.162	5,008.41	3,640.89	-4,057.77	5,451.58	0.00	0.00	0.00
10,799.98	89.58	315.162	5,009.15	3,711.80	-4,128.28	5,551.45	0.00	0.00	0.00
10,899.98	89.58	315.162	5,009.89	3,782.70	-4,198.79	5,651.33	0.00	0.00	0.00
10,999.98	89.58	315.162	5,010.63	3,853.61	-4,269.30	5,751.21	0.00	0.00	0.00
11,099.98	89.58	315.162	5,011.37	3,924.52	-4,339.81	5,851.09	0.00	0.00	0.00
11,199.98	89.58	315.162	5,012.11	3,995.43	-4,410.31	5,950.96	0.00	0.00	0.00
11,299.98	89.58	315.162	5,012.85	4,066.34	-4,480.82	6,050.84	0.00	0.00	0.00
11,399.98	89.58	315.162	5,013.59	4,137.25	-4,551.33	6,150.72	0.00	0.00	0.00
11,499.98	89.58	315.162	5,014.33	4,208.16	-4,621.84	6,250.60	0.00	0.00	0.00
11,590.92	89.58	315.162	5,015.00	4,272.64	-4,685.96	6,341.43	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
319H Heel - plan hits target center - Circle (radius 50.00)	0.00	0.000	4,969.00	-136.14	-302.08	1,914,994.82	2,742,497.53	36.2628830	-107.7675067
319H Toe - plan hits target center - Circle (radius 100.00)	0.00	0.000	5,015.00	4,272.64	-4,685.96	1,919,400.58	2,738,110.61	36.2749932	-107.7823797

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
5,322.40	4,966.59	Intermediate Casing	7.00	8.75



Scientific Drilling, Intl
Planning Report



Database:	Grand Junction	Local Co-ordinate Reference:	Well 319H - Slot 1
Company:	DJR Operating	TVD Reference:	GL 6864' & RKB 14' @ 6878.00usft (Aztec 920)
Project:	Nageezi Unit	MD Reference:	GL 6864' & RKB 14' @ 6878.00usft (Aztec 920)
Site:	M35 2409	North Reference:	True
Well:	319H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
686.61	686.00	Ojo Alamo		0.00	0.000	
841.04	839.00	Kirtland		0.00	0.000	
1,133.57	1,128.00	Fruitland		0.00	0.000	
1,483.79	1,474.00	Pictured Cliffs		0.00	0.000	
1,581.97	1,571.00	Lewis		0.00	0.000	
2,232.81	2,214.00	Chacra		0.00	0.000	
2,990.95	2,963.00	Menefee		0.00	0.000	
3,956.58	3,917.00	Point Lookout		0.00	0.000	
4,133.72	4,092.00	Mancos		0.00	0.000	
4,454.48	4,410.00	Mancos Silt		0.00	0.000	
5,089.78	4,905.00	Gallup A		0.00	0.000	
5,198.81	4,944.00	Gallup B		0.00	0.000	



DJR Operating

Nageezi Unit

M35 2409

319H

Original Drilling

APD

Anticollision Report

08 January, 2020



www.scientificdrilling.com



Scientific Drilling, Intl

Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well 319H - Slot 1
Project:	Nageezi Unit	TVD Reference:	GL 6864' & RKB 14' @ 6878.00usft (Aztec 920)
Reference Site:	M35 2409	MD Reference:	GL 6864' & RKB 14' @ 6878.00usft (Aztec 920)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	319H	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	1/8/2020		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	11,590.92	APD (Original Drilling)	MWD+IGRF	OWSG MWD + IGRF or WMM	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
M35 2409						
314H - Original Drilling - APD	300.00	300.00	80.15	78.41	46.007	CC
314H - Original Drilling - APD	400.00	399.32	80.36	77.91	32.765	ES
314H - Original Drilling - APD	6,500.00	4,650.00	1,415.97	1,356.55	23.830	SF
315H - Original Drilling - APD	300.00	300.00	40.25	38.51	23.106	CC
315H - Original Drilling - APD	400.00	399.68	40.46	38.01	16.489	ES
315H - Original Drilling - APD	11,591.23	10,899.15	1,320.25	1,009.54	4.249	SF
316H - Original Drilling - APD	300.00	300.00	60.02	58.28	34.454	CC
316H - Original Drilling - APD	400.00	400.00	60.13	57.68	24.495	ES
316H - Original Drilling - APD	600.00	595.09	75.09	71.24	19.525	SF
318H - Original Drilling - APD	300.00	300.00	20.13	18.39	11.553	CC
318H - Original Drilling - APD	400.00	400.00	20.23	17.78	8.243	ES
318H - Original Drilling - APD	5,200.00	4,989.85	248.85	211.79	6.715	SF

Offset Design M35 2409 - 314H - Original Drilling - APD														Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF														Offset Well Error:	0.00 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
0.00	0.00	0.00	0.00	0.00	0.00	-5.91	79.73	-8.25	80.15						
100.00	100.00	100.00	100.00	0.15	0.15	-5.91	79.73	-8.25	80.15	79.84	0.31	259.992			
200.00	200.00	200.00	200.00	0.51	0.51	-5.91	79.73	-8.25	80.15	79.13	1.03	78.180			
300.00	300.00	300.00	300.00	0.87	0.87	-5.91	79.73	-8.25	80.15	78.41	1.74	46.007	CC		
300.01	300.01	300.01	300.01	0.87	0.87	-5.91	79.73	-8.25	80.15	78.41	1.74	46.008			
400.00	400.00	399.32	399.32	1.23	1.23	-168.05	79.83	-8.25	80.36	77.91	2.45	32.765	ES		
500.00	499.96	496.41	496.37	1.56	1.58	-168.17	82.30	-8.18	85.45	82.31	3.14	27.215			
600.00	599.77	592.67	592.46	1.91	1.93	-168.38	87.99	-8.02	97.26	93.42	3.84	25.333			
700.00	699.30	687.46	686.84	2.27	2.28	-168.62	98.74	-7.77	115.73	111.19	4.54	25.504			
800.00	798.44	780.18	778.83	2.66	2.64	-168.83	108.32	-7.43	140.69	135.47	5.23	26.916			
900.00	897.25	870.64	868.17	3.08	3.01	-169.01	122.48	-7.03	170.95	165.05	5.90	28.975			
1,000.00	996.04	959.22	955.18	3.51	3.40	-169.04	139.07	-6.55	204.20	197.65	6.55	31.180			
1,100.00	1,094.84	1,045.85	1,039.73	3.95	3.81	-168.95	157.88	-6.01	240.28	233.09	7.19	33.432			
1,200.00	1,193.63	1,130.43	1,121.70	4.39	4.24	-168.79	178.71	-5.41	279.10	271.30	7.81	35.755			

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



Scientific Drilling, Intl
Anticollision Report

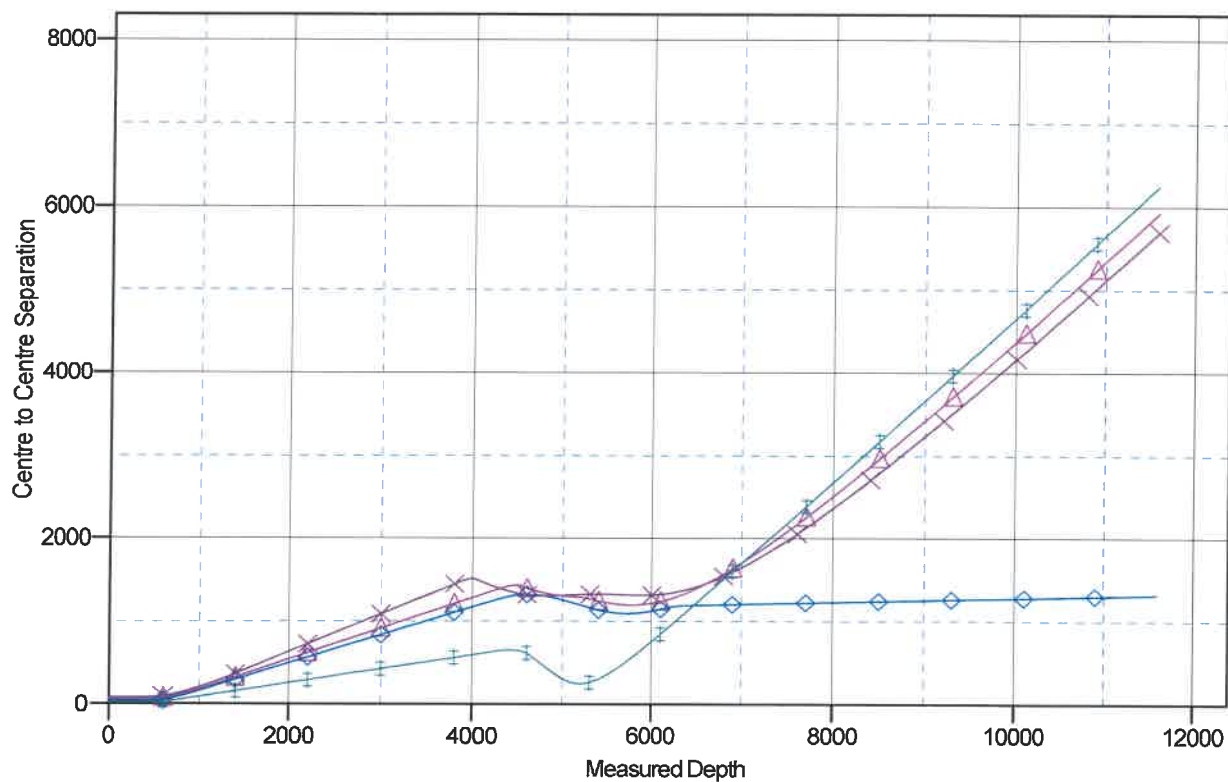


Company:	DJR Operating	Local Co-ordinate Reference:	Well 319H - Slot 1
Project:	Nageezi Unit	TVD Reference:	GL 6864' & RKB 14' @ 6878.00usft (Aztec 920)
Reference Site:	M35 2409	MD Reference:	GL 6864' & RKB 14' @ 6878.00usft (Aztec 920)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	319H	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 6864' & RKB 14' @ 6878.00usft (A)
Offset Depths are relative to Offset Datum
Central Meridian is -107.8333334

Coordinates are relative to: 319H - Slot 1
Coordinate System is US State Plane 1983, New Mexico Western Zone
Grid Convergence at Surface is: 0.04°

Ladder Plot



LEGEND

- ◆ 315H, Original Drilling, APD V0
- ▲ 316H, Original Drilling, APD V0
- ✕ 314H, Original Drilling, APD V0
- + 318H, Original Drilling, APD V0

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



Scientific Drilling, Intl
Anticollision Report

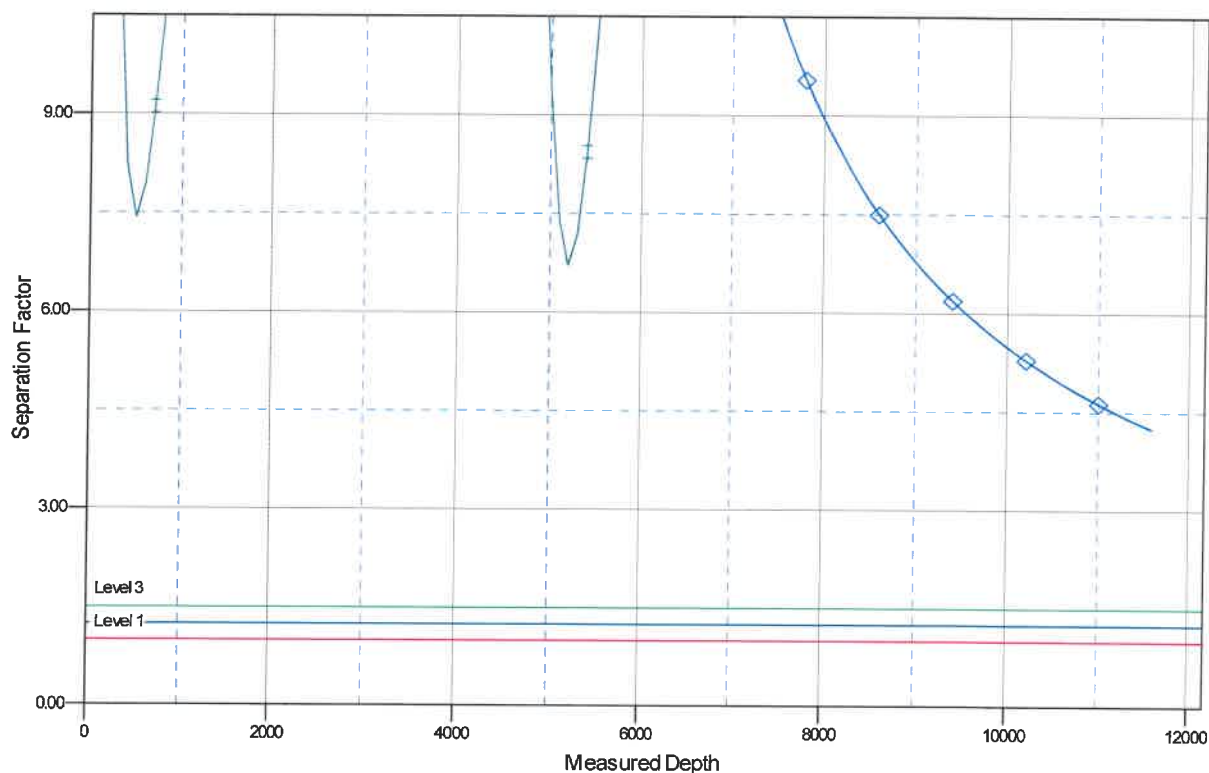


Company:	DJR Operating	Local Co-ordinate Reference:	Well 319H - Slot 1
Project:	Nageezi Unit	TVD Reference:	GL 6864' & RKB 14' @ 6878.00usft (Aztec 920)
Reference Site:	M35 2409	MD Reference:	GL 6864' & RKB 14' @ 6878.00usft (Aztec 920)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	319H	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 6864' & RKB 14' @ 6878.00usft (A)
Offset Depths are relative to Offset Datum
Central Meridian is -107.8333334

Coordinates are relative to: 319H - Slot 1
Coordinate System is US State Plane 1983, New Mexico Western Zone
Grid Convergence at Surface is: 0.04°

Separation Factor Plot



LEGEND

- ◆ 315H, Original Drilling, APD V0
- ▲ 316H, Original Drilling, APD V0
- ✱ 314H, Original Drilling, APD V0
- ◆ 318H, Original Drilling, APD V0

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

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 314H	Pending	SWSW, Section 35, T24N, R9W	70' FSL, 269' FWL	835	Flared	
Nageezi Unit 315H	Pending	SWSW, Section 35, T24N, R9W	30' FSL, 273' FEL	690	Flared	
Nageezi Unit 316H	Pending	SWSW, Section 35, T24N, R9W	50' FSL, 271' FWL	700	Flared	
Nageezi Unit 318H	Pending	SWSW, Section 35, T24N, R9W	10' FSL, 275' FWL	660	Flared	
Nageezi Unit 319H	Pending	NWNW, Section 2, T23N, R9W	10' FNL, 277' FWL	640	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 5,974' of pipeline to connect the facility to DJR Operating LLC. low/high pressure Escrito Trunk in Sec. 3, T23N, 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 19413

COMMENTS

Operator:				OGRID:		Action Number:	Action Type:
	DJR OPERATING, LLC	1 Road 3263	Aztec, NM87410		371838	19413	FORM 3160-3

Created By	Comment	Comment Date
ahvermersch	See additional NMOCD COA's on attached letter.	03/02/2021

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

CONDITIONS

Action 19413

CONDITIONS OF APPROVAL

Operator: DJR OPERATING, LLC 1 Road 3263 Aztec, NM87410			OGRID: 371838	Action Number: 19413	Action Type: FORM 3160-3
OCD Reviewer		Condition			
ahvermersch		Notify OCD 24 hours prior to casing & cement			