

Form 3160-3
(June 2015)FORM 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. NMNM008005
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 602H
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 38230
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface SESE / 1257 FSL / 791 FEL / LAT 36.237681 / LONG -107.78797 At proposed prod. zone SWNE / 2078 FNL / 2051 FEL / LAT 36.257513 / LONG -107.810204		10. Field and Pool, or Exploratory BASIN MANCOS/NAGEEZI UNIT HZ OIL
11. Sec., T, R, M. or Blk. and Survey or Area SEC 9/T23N/R9W/NMP		
14. Distance in miles and direction from nearest town or post office* 38 miles		12. County or Parish SAN JUAN
13. State NM		
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 791 feet	16. No of acres in lease	17. Spacing Unit dedicated to this well 560.0
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 20 feet	19. Proposed Depth 4489 feet / 14192 feet	20. BLM/BIA Bond No. in file FED: NMB001464
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6805 feet	22. Approximate date work will start* 02/11/2021	23. 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. | 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 08/21/2020
Title Regulatory Specialist		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Dave Mankiewicz / Ph: (505) 564-7761	Date 12/15/2020
Title AFM-Minerals Office 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.

Approval Date: 12/15/2020

(Continued on page 2)

*(Instructions on page 2)

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM I: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM connects this information to an evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Connection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

Additional Operator Remarks

Location of Well

0. SHL: SESE / 1257 FSL / 791 FEL / TWSP: 23N / RANGE: 9W / SECTION: 9 / LAT: 36.237681 / LONG: -107.78797 (TVD: 0 feet, MD: 0 feet)
PPP: SESE / 0 FSL / 0 FEL / TWSP: 23N / RANGE: 9W / SECTION: 5 / LAT: 36.251327 / LONG: -107.803263 (TVD: 4489 feet, MD: 14192 feet)
PPP: SWSW / 0 FSL / 0 FEL / TWSP: 23N / RANGE: 9W / SECTION: 4 / LAT: 36.248733 / LONG: -107.800352 (TVD: 4489 feet, MD: 14192 feet)
PPP: SENW / 0 FSL / 0 FEL / TWSP: 23N / RANGE: 9W / SECTION: 9 / LAT: 36.243272 / LONG: -107.794226 (TVD: 4489 feet, MD: 14192 feet)
PPP: NESE / 1524 FSL / 1025 FEL / TWSP: 23N / RANGE: 9W / SECTION: 9 / LAT: 36.238408 / LONG: -107.788771 (TVD: 4422 feet, MD: 4744 feet)
BHL: SWNE / 2078 FNL / 2051 FEL / TWSP: 23N / RANGE: 9W / SECTION: 5 / LAT: 36.257513 / LONG: -107.810204 (TVD: 4489 feet, MD: 14192 feet)

BLM Point of Contact

Name: Gary Smith
Title: Natural Resource Specialist
Phone: (505) 564-7701
Email: g1smith@blm.gov

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Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

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(Form 3160-3, page 4)

Approval Date: 12/15/2020

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240
Phone: (505) 393-6161 Fax: (505) 393-0720

DISTRICT II
811 S. First St., Artesia, N.M. 88210
Phone: (505) 748-1283 Fax: (505) 748-9720

DISTRICT III
1000 Rio Brascos Rd., Aztec, N.M. 87410
Phone: (505) 334-6176 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-8480 Fax: (505) 476-8486

State of New Mexico
Energy, Minerals & Natural Resources Department

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

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30 045 38230	² Pool Code 98080	³ Pool Name NAGEEZI UNIT MANCOS OIL POOL
⁴ Property Code 325268	⁵ Property Name NAGEEZI UNIT	⁶ Well Number 602H
⁷ OGRID No. 371838	⁸ Operator Name DJR OPERATING, LLC	⁹ Elevation 6805'

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
P	9	23N	9W		1257'	SOUTH	791'	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
G	5	23N	9W		2078'	NORTH	2051'	EAST	SAN JUAN

¹² Dedicated Acres PENETRATED SPACING UNIT; SEC 9: SE/SE, NE/SE, NW/SE, SW/NE, SE/NW, NE/NW & NW/NW (280 AC.); SEC 4: SW/SW & NW/SW (80 AC.); SEC 5: SE/SE, NE/SE, NW/SE, SE/NE & SW/NE (200 AC.) = 560 ACRES	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. R-13856 R-13856A
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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 SURFACE LOCATION (SHL) LAT. 36.237681° N (NAD83) LONG. 107.787970° W (NAD83) PPP/POE LAT. 36.238408° N (NAD83) LONG. 107.788771° W (NAD83) BOTTOM HOLE LOCATION (BHL) LAT. 36.257513° N (NAD83) LONG. 107.810204° W (NAD83)	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. <i>Shaw-Marie Ford</i> 08/13/20 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. MARCH 12, 2020 Date of Survey Signature and Seal of Professional Surveyor: Certificate Number 11393
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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: **12/18/2020**

☒ 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 601H	Pending	SESE, Section 9, T23N, R9W	1224' FSL, 841' FEL	270	Flared	
Nageezi Unit 602H	Pending	SESE, Section 9, T23N, R9W	1257' FSL, 791' FEL	580	Flared	
Nageezi Unit 513H	30-045-35764	SESE, Section 9, T23N, R9W	1246' FSL, 808' FEL	300	Flared	
Nageezi Unit 514H	30-045-35763	SESE, Section 9, T23N, R9W	1235' FSL, 824' FEL	580	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 **8,239'** 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

Rev 0



DRILLING PLAN Nageezi Unit #602H San Juan County, New Mexico

Surface Location

791-ft FEL & 1257-ft FSL
Sec 9 T23N R09W
Graded Elevation 6805' MSL
RKB Elevation 6819' (14' KB)

SHL Geographical Coordinates (NAD-83)

Latitude 36.2376810° N
Longitude 107.7879700° W

Kick Off Point for Horizontal Build Curve

3745-ft MD
3733-ft TVD

Local Coordinates (from SHL)

202-ft South
187-ft East

Heel Location (Pay zone entry)

1025-ft FEL & 1524-ft FSL
Sec 9 T23N R09W

Heel Geographical Coordinates (NAD-83)

Latitude 36.2384078° N
Longitude 107.78877050° W

Bottom Hole Location (TD)

2051-ft FEL & 2078-ft FNL
Sec 5 T23N R09W

BHL Geographical Coordinates (NAD-83)

Latitude 36.2575131° N
Longitude 107.8102042° W

Well objectives

This well is planned as a 9400-ft lateral in the Mancos Silt sand.

Bottom Hole temperature and pressure

The temperature in the Mancos Silt horizontal objective is 131°F. Bottom hole pressure in the Mancos Silt 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	456	456	Sd	W	8.3	8.4 – 8.8
Kirtland	596	596	Sh	-	8.3	8.4 – 8.8
Fruitland	903	902	C	G	8.3	9.0 - 9.5
Pictured Cliffs	1166	1164	Sd	W	8.3	9.0 - 9.5
Lewis	1268	1265	Sh	-		9.0 - 9.5
Chacra	1891	1886	Sd	-	8.3	9.0 - 9.5
Menefee	2605	2598	Sd, C	G	8.3	9.0 - 9.5
Point Lookout	3602	3591	Sd	-	8.3	9.0 - 9.5
Mancos	3739	3727	Sh	-		9.0 - 9.5
Mancos Silt	4066	4047	Slt	O/G	6.6	9.0 - 9.5
Gallup A	NP	NP	Slt	O/G	6.6	9.0 - 9.5
Gallup B	NP	NP	Sd	O/G	6.6	8.8 - 9.0
Gallup C	NP	NP	Sd	O/G	6.6	8.8 - 9.0
Target	4795	4424	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	4744	surf	4422	surface
4-1/2"	6-1/8"	11.6	P-110	BTC	4466	14192	4339	4489	4466

Note: all casing will be new

Rev 0



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	3245-ft
Density (ppg)	12.30	13.50
Yield (cf/sx)	2.34	1.50
Mix water (gal/sx)	13.26	7.20
Volume (sx)	313	240
Volume (bbls)	131	64
Volume (cu. ft.)	733	358
Excess %	50	50



Rev 0

4-1/2" Production Liner

	BJ Services
Type	Poz/G
Planned top	4466-ft
Density (ppg)	13.3
Yield (cf/sx)	1.56
Mix water (gal/sx)	7.71
Volume (sx)	818
Volume (bbls)	228
Volume (cu.ft)	1278
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 – 4744	9.0 – 9.5	38 – 45	8 – 14	<20
Production	Low solids, non-dispersed	4744 – 14192	8.8 – 9.2	34 – 38	6 – 8	6 – 8

Cores, tests and logs

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

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

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

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

Cuttings and drilling fluids management

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

Completion

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



DJR Operating

Nageezi Unit

P09 2309

602H - Slot 4

Original Drilling

Plan: APD

Standard Planning Report

19 June, 2020





Lonestar Consulting, LLC
Planning Report



Database:	DJR	Local Co-ordinate Reference:	Well # 602H - Slot 4
Company:	DJR Operating	TVD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Project:	Nageezi Unit	MD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Site:	P09 2309	North Reference:	True
Well:	# 602H	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	P09 2309				
Site Position:		Northing:	1,905,783.38 usft	Latitude:	36.23758800
From:	Lat/Long	Easting:	2,736,419.66 usft	Longitude:	-107.78813800
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	0.03 °

Well	# 602H - Slot 4					
Well Position	+N/-S	33.85 usft	Northing:	1,905,817.25 usft	Latitude:	36.23768100
	+E/-W	49.54 usft	Easting:	2,736,469.19 usft	Longitude:	-107.78797000
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	6,805.00 usft

Wellbore	Original Drilling				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM_FILE	6/18/2020	8.77	62.73	49,348.00000000

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	317.764

Plan Survey Tool Program	Date	6/19/2020		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	14,192.25	APD (Original Drilling)	MWD+HDGM OWSG MWD + HDGM

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.000	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
645.09	4.90	137.197	644.79	-7.69	7.12	2.00	2.00	0.00	137.20	
3,744.64	4.90	137.197	3,733.00	-202.01	187.08	0.00	0.00	0.00	0.00	
4,794.69	89.60	317.745	4,424.00	264.59	-236.06	9.00	8.07	-17.09	-179.45	602H Heel
14,192.25	89.60	317.745	4,489.00	7,220.09	-6,555.15	0.00	0.00	0.00	0.00	602H Toe



Lonestar Consulting, LLC
Planning Report



Database:	DJR	Local Co-ordinate Reference:	Well # 602H - Slot 4
Company:	DJR Operating	TVD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Project:	Nageezi Unit	MD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Site:	P09 2309	North Reference:	True
Well:	# 602H	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 (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
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
400.00	0.00	0.000	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	2.00	137.197	499.98	-1.28	1.19	-1.75	2.00	2.00	0.00
600.00	4.00	137.197	599.84	-5.12	4.74	-6.98	2.00	2.00	0.00
645.09	4.90	137.197	644.79	-7.69	7.12	-10.48	2.00	2.00	0.00
700.00	4.90	137.197	699.50	-11.13	10.31	-15.17	0.00	0.00	0.00
800.00	4.90	137.197	799.13	-17.40	16.11	-23.71	0.00	0.00	0.00
900.00	4.90	137.197	898.77	-23.67	21.92	-32.26	0.00	0.00	0.00
1,000.00	4.90	137.197	998.40	-29.94	27.73	-40.80	0.00	0.00	0.00
1,100.00	4.90	137.197	1,098.04	-36.21	33.53	-49.35	0.00	0.00	0.00
1,200.00	4.90	137.197	1,197.67	-42.48	39.34	-57.89	0.00	0.00	0.00
1,300.00	4.90	137.197	1,297.31	-48.75	45.14	-66.44	0.00	0.00	0.00
1,400.00	4.90	137.197	1,396.94	-55.02	50.95	-74.98	0.00	0.00	0.00
1,500.00	4.90	137.197	1,496.57	-61.28	56.76	-83.52	0.00	0.00	0.00
1,600.00	4.90	137.197	1,596.21	-67.55	62.56	-92.07	0.00	0.00	0.00
1,700.00	4.90	137.197	1,695.84	-73.82	68.37	-100.61	0.00	0.00	0.00
1,800.00	4.90	137.197	1,795.48	-80.09	74.17	-109.16	0.00	0.00	0.00
1,900.00	4.90	137.197	1,895.11	-86.36	79.98	-117.70	0.00	0.00	0.00
2,000.00	4.90	137.197	1,994.75	-92.63	85.79	-126.25	0.00	0.00	0.00
2,100.00	4.90	137.197	2,094.38	-98.90	91.59	-134.79	0.00	0.00	0.00
2,200.00	4.90	137.197	2,194.01	-105.17	97.40	-143.33	0.00	0.00	0.00
2,300.00	4.90	137.197	2,293.65	-111.44	103.20	-151.88	0.00	0.00	0.00
2,400.00	4.90	137.197	2,393.28	-117.71	109.01	-160.42	0.00	0.00	0.00
2,500.00	4.90	137.197	2,492.92	-123.98	114.82	-168.97	0.00	0.00	0.00
2,600.00	4.90	137.197	2,592.55	-130.25	120.62	-177.51	0.00	0.00	0.00
2,700.00	4.90	137.197	2,692.19	-136.52	126.43	-186.06	0.00	0.00	0.00
2,800.00	4.90	137.197	2,791.82	-142.79	132.23	-194.60	0.00	0.00	0.00
2,900.00	4.90	137.197	2,891.45	-149.05	138.04	-203.15	0.00	0.00	0.00
3,000.00	4.90	137.197	2,991.09	-155.32	143.85	-211.69	0.00	0.00	0.00
3,100.00	4.90	137.197	3,090.72	-161.59	149.65	-220.23	0.00	0.00	0.00
3,200.00	4.90	137.197	3,190.36	-167.86	155.46	-228.78	0.00	0.00	0.00
3,300.00	4.90	137.197	3,289.99	-174.13	161.26	-237.32	0.00	0.00	0.00
3,400.00	4.90	137.197	3,389.63	-180.40	167.07	-245.87	0.00	0.00	0.00
3,500.00	4.90	137.197	3,489.26	-186.67	172.87	-254.41	0.00	0.00	0.00
3,600.00	4.90	137.197	3,588.89	-192.94	178.68	-262.96	0.00	0.00	0.00
3,700.00	4.90	137.197	3,688.53	-199.21	184.49	-271.50	0.00	0.00	0.00
3,744.64	4.90	137.197	3,733.00	-202.01	187.08	-275.31	0.00	0.00	0.00
3,800.00	0.09	347.783	3,788.30	-203.70	188.68	-277.64	9.00	-8.68	-269.88
3,900.00	9.08	318.038	3,887.88	-197.74	183.37	-269.66	9.00	8.99	-29.74
4,000.00	18.08	317.888	3,984.98	-180.32	167.66	-246.20	9.00	9.00	-0.15
4,100.00	27.08	317.836	4,077.22	-151.88	141.92	-207.85	9.00	9.00	-0.05
4,200.00	36.08	317.809	4,162.32	-113.11	106.79	-155.53	9.00	9.00	-0.03
4,300.00	45.08	317.791	4,238.19	-64.97	63.14	-90.54	9.00	9.00	-0.02
4,400.00	54.08	317.778	4,302.96	-8.64	12.03	-14.49	9.00	9.00	-0.01
4,500.00	63.08	317.768	4,355.04	54.48	-45.26	70.76	9.00	9.00	-0.01
4,600.00	72.08	317.760	4,393.14	122.86	-107.33	163.11	9.00	9.00	-0.01
4,700.00	81.08	317.752	4,416.32	194.79	-172.66	260.28	9.00	9.00	-0.01
4,794.69	89.60	317.745	4,424.00	264.59	-236.06	354.57	9.00	9.00	-0.01
4,800.00	89.60	317.745	4,424.04	268.51	-239.63	359.88	0.00	0.00	0.00
4,900.00	89.60	317.745	4,424.73	342.53	-306.87	459.88	0.00	0.00	0.00
5,000.00	89.60	317.745	4,425.42	416.54	-374.12	559.87	0.00	0.00	0.00



Lonestar Consulting, LLC Planning Report



Database:	DJR	Local Co-ordinate Reference:	Well # 602H - Slot 4
Company:	DJR Operating	TVD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Project:	Nageezi Unit	MD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Site:	P09 2309	North Reference:	True
Well:	# 602H	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 (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,100.00	89.60	317.745	4,426.11	490.55	-441.36	659.87	0.00	0.00	0.00
5,200.00	89.60	317.745	4,426.80	564.57	-508.60	759.87	0.00	0.00	0.00
5,300.00	89.60	317.745	4,427.50	638.58	-575.84	859.87	0.00	0.00	0.00
5,400.00	89.60	317.745	4,428.19	712.60	-643.08	959.87	0.00	0.00	0.00
5,500.00	89.60	317.745	4,428.88	786.61	-710.32	1,059.86	0.00	0.00	0.00
5,600.00	89.60	317.745	4,429.57	860.62	-777.57	1,159.86	0.00	0.00	0.00
5,700.00	89.60	317.745	4,430.26	934.64	-844.81	1,259.86	0.00	0.00	0.00
5,800.00	89.60	317.745	4,430.95	1,008.65	-912.05	1,359.86	0.00	0.00	0.00
5,900.00	89.60	317.745	4,431.65	1,082.67	-979.29	1,459.85	0.00	0.00	0.00
6,000.00	89.60	317.745	4,432.34	1,156.68	-1,046.53	1,559.85	0.00	0.00	0.00
6,100.00	89.60	317.745	4,433.03	1,230.69	-1,113.78	1,659.85	0.00	0.00	0.00
6,200.00	89.60	317.745	4,433.72	1,304.71	-1,181.02	1,759.85	0.00	0.00	0.00
6,300.00	89.60	317.745	4,434.41	1,378.72	-1,248.26	1,859.84	0.00	0.00	0.00
6,400.00	89.60	317.745	4,435.10	1,452.74	-1,315.50	1,959.84	0.00	0.00	0.00
6,500.00	89.60	317.745	4,435.80	1,526.75	-1,382.74	2,059.84	0.00	0.00	0.00
6,600.00	89.60	317.745	4,436.49	1,600.76	-1,449.98	2,159.84	0.00	0.00	0.00
6,700.00	89.60	317.745	4,437.18	1,674.78	-1,517.23	2,259.83	0.00	0.00	0.00
6,800.00	89.60	317.745	4,437.87	1,748.79	-1,584.47	2,359.83	0.00	0.00	0.00
6,900.00	89.60	317.745	4,438.56	1,822.81	-1,651.71	2,459.83	0.00	0.00	0.00
7,000.00	89.60	317.745	4,439.25	1,896.82	-1,718.95	2,559.83	0.00	0.00	0.00
7,100.00	89.60	317.745	4,439.95	1,970.83	-1,786.19	2,659.82	0.00	0.00	0.00
7,200.00	89.60	317.745	4,440.64	2,044.85	-1,853.44	2,759.82	0.00	0.00	0.00
7,300.00	89.60	317.745	4,441.33	2,118.86	-1,920.68	2,859.82	0.00	0.00	0.00
7,400.00	89.60	317.745	4,442.02	2,192.87	-1,987.92	2,959.82	0.00	0.00	0.00
7,500.00	89.60	317.745	4,442.71	2,266.89	-2,055.16	3,059.81	0.00	0.00	0.00
7,600.00	89.60	317.745	4,443.40	2,340.90	-2,122.40	3,159.81	0.00	0.00	0.00
7,700.00	89.60	317.745	4,444.10	2,414.92	-2,189.64	3,259.81	0.00	0.00	0.00
7,800.00	89.60	317.745	4,444.79	2,488.93	-2,256.89	3,359.81	0.00	0.00	0.00
7,900.00	89.60	317.745	4,445.48	2,562.94	-2,324.13	3,459.81	0.00	0.00	0.00
8,000.00	89.60	317.745	4,446.17	2,636.96	-2,391.37	3,559.80	0.00	0.00	0.00
8,100.00	89.60	317.745	4,446.86	2,710.97	-2,458.61	3,659.80	0.00	0.00	0.00
8,200.00	89.60	317.745	4,447.55	2,784.99	-2,525.85	3,759.80	0.00	0.00	0.00
8,300.00	89.60	317.745	4,448.25	2,859.00	-2,593.10	3,859.80	0.00	0.00	0.00
8,400.00	89.60	317.745	4,448.94	2,933.01	-2,660.34	3,959.79	0.00	0.00	0.00
8,500.00	89.60	317.745	4,449.63	3,007.03	-2,727.58	4,059.79	0.00	0.00	0.00
8,600.00	89.60	317.745	4,450.32	3,081.04	-2,794.82	4,159.79	0.00	0.00	0.00
8,700.00	89.60	317.745	4,451.01	3,155.06	-2,862.06	4,259.79	0.00	0.00	0.00
8,800.00	89.60	317.745	4,451.70	3,229.07	-2,929.31	4,359.78	0.00	0.00	0.00
8,900.00	89.60	317.745	4,452.40	3,303.08	-2,996.55	4,459.78	0.00	0.00	0.00
9,000.00	89.60	317.745	4,453.09	3,377.10	-3,063.79	4,559.78	0.00	0.00	0.00
9,100.00	89.60	317.745	4,453.78	3,451.11	-3,131.03	4,659.78	0.00	0.00	0.00
9,200.00	89.60	317.745	4,454.47	3,525.12	-3,198.27	4,759.77	0.00	0.00	0.00
9,300.00	89.60	317.745	4,455.16	3,599.14	-3,265.51	4,859.77	0.00	0.00	0.00
9,400.00	89.60	317.745	4,455.85	3,673.15	-3,332.76	4,959.77	0.00	0.00	0.00
9,500.00	89.60	317.745	4,456.55	3,747.17	-3,400.00	5,059.77	0.00	0.00	0.00
9,600.00	89.60	317.745	4,457.24	3,821.18	-3,467.24	5,159.76	0.00	0.00	0.00
9,700.00	89.60	317.745	4,457.93	3,895.19	-3,534.48	5,259.76	0.00	0.00	0.00
9,800.00	89.60	317.745	4,458.62	3,969.21	-3,601.72	5,359.76	0.00	0.00	0.00
9,900.00	89.60	317.745	4,459.31	4,043.22	-3,668.97	5,459.76	0.00	0.00	0.00
10,000.00	89.60	317.745	4,460.00	4,117.24	-3,736.21	5,559.75	0.00	0.00	0.00
10,100.00	89.60	317.745	4,460.70	4,191.25	-3,803.45	5,659.75	0.00	0.00	0.00
10,200.00	89.60	317.745	4,461.39	4,265.26	-3,870.69	5,759.75	0.00	0.00	0.00
10,300.00	89.60	317.745	4,462.08	4,339.28	-3,937.93	5,859.75	0.00	0.00	0.00
10,400.00	89.60	317.745	4,462.77	4,413.29	-4,005.17	5,959.75	0.00	0.00	0.00



Lonestar Consulting, LLC Planning Report



Database:	DJR	Local Co-ordinate Reference:	Well # 602H - Slot 4
Company:	DJR Operating	TVD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Project:	Nageezi Unit	MD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Site:	P09 2309	North Reference:	True
Well:	# 602H	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 (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,500.00	89.60	317.745	4,463.46	4,487.31	-4,072.42	6,059.74	0.00	0.00	0.00
10,600.00	89.60	317.745	4,464.15	4,461.32	-4,139.66	6,159.74	0.00	0.00	0.00
10,700.00	89.60	317.745	4,464.85	4,635.33	-4,206.90	6,259.74	0.00	0.00	0.00
10,800.00	89.60	317.745	4,465.54	4,709.35	-4,274.14	6,359.74	0.00	0.00	0.00
10,900.00	89.60	317.745	4,466.23	4,783.36	-4,341.38	6,459.73	0.00	0.00	0.00
11,000.00	89.60	317.745	4,466.92	4,857.37	-4,408.63	6,559.73	0.00	0.00	0.00
11,100.00	89.60	317.745	4,467.61	4,931.39	-4,475.87	6,659.73	0.00	0.00	0.00
11,200.00	89.60	317.745	4,468.30	5,005.40	-4,543.11	6,759.73	0.00	0.00	0.00
11,300.00	89.60	317.745	4,469.00	5,079.42	-4,610.35	6,859.72	0.00	0.00	0.00
11,400.00	89.60	317.745	4,469.69	5,153.43	-4,677.59	6,959.72	0.00	0.00	0.00
11,500.00	89.60	317.745	4,470.38	5,227.44	-4,744.83	7,059.72	0.00	0.00	0.00
11,600.00	89.60	317.745	4,471.07	5,301.46	-4,812.08	7,159.72	0.00	0.00	0.00
11,700.00	89.60	317.745	4,471.76	5,375.47	-4,879.32	7,259.71	0.00	0.00	0.00
11,800.00	89.60	317.745	4,472.45	5,449.49	-4,946.56	7,359.71	0.00	0.00	0.00
11,900.00	89.60	317.745	4,473.15	5,523.50	-5,013.80	7,459.71	0.00	0.00	0.00
12,000.00	89.60	317.745	4,473.84	5,597.51	-5,081.04	7,559.71	0.00	0.00	0.00
12,100.00	89.60	317.745	4,474.53	5,671.53	-5,148.29	7,659.70	0.00	0.00	0.00
12,200.00	89.60	317.745	4,475.22	5,745.54	-5,215.53	7,759.70	0.00	0.00	0.00
12,300.00	89.60	317.745	4,475.91	5,819.56	-5,282.77	7,859.70	0.00	0.00	0.00
12,400.00	89.60	317.745	4,476.60	5,893.57	-5,350.01	7,959.70	0.00	0.00	0.00
12,500.00	89.60	317.745	4,477.30	5,967.58	-5,417.25	8,059.69	0.00	0.00	0.00
12,600.00	89.60	317.745	4,477.99	6,041.60	-5,484.50	8,159.69	0.00	0.00	0.00
12,700.00	89.60	317.745	4,478.68	6,115.61	-5,551.74	8,259.69	0.00	0.00	0.00
12,800.00	89.60	317.745	4,479.37	6,189.63	-5,618.98	8,359.69	0.00	0.00	0.00
12,900.00	89.60	317.745	4,480.06	6,263.64	-5,686.22	8,459.69	0.00	0.00	0.00
13,000.00	89.60	317.745	4,480.75	6,337.65	-5,753.46	8,559.68	0.00	0.00	0.00
13,100.00	89.60	317.745	4,481.45	6,411.67	-5,820.70	8,659.68	0.00	0.00	0.00
13,200.00	89.60	317.745	4,482.14	6,485.68	-5,887.95	8,759.68	0.00	0.00	0.00
13,300.00	89.60	317.745	4,482.83	6,559.69	-5,955.19	8,859.68	0.00	0.00	0.00
13,400.00	89.60	317.745	4,483.52	6,633.71	-6,022.43	8,959.67	0.00	0.00	0.00
13,500.00	89.60	317.745	4,484.21	6,707.72	-6,089.67	9,059.67	0.00	0.00	0.00
13,600.00	89.60	317.745	4,484.90	6,781.74	-6,156.91	9,159.67	0.00	0.00	0.00
13,700.00	89.60	317.745	4,485.60	6,855.75	-6,224.16	9,259.67	0.00	0.00	0.00
13,800.00	89.60	317.745	4,486.29	6,929.76	-6,291.40	9,359.66	0.00	0.00	0.00
13,900.00	89.60	317.745	4,486.98	7,003.78	-6,358.64	9,459.66	0.00	0.00	0.00
14,000.00	89.60	317.745	4,487.67	7,077.79	-6,425.88	9,559.66	0.00	0.00	0.00
14,100.00	89.60	317.745	4,488.36	7,151.81	-6,493.12	9,659.66	0.00	0.00	0.00
14,192.25	89.60	317.745	4,489.00	7,220.09	-6,555.15	9,751.91	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
602H Heel - hit/miss target - Shape	0.00	0.000	4,424.00	264.59	-236.06	1,906,081.73	2,736,233.00	36.23840784	-107.78877050
602H Toe - plan hits target center - Circle (radius 100.00)	0.00	0.000	4,489.00	7,220.09	-6,555.15	1,913,034.27	2,729,910.66	36.25751310	-107.81020420



Lonestar Consulting, LLC
Planning Report



Database:	DJR	Local Co-ordinate Reference:	Well # 602H - Slot 4
Company:	DJR Operating	TVD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Project:	Nageezi Unit	MD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Site:	P09 2309	North Reference:	True
Well:	# 602H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD		

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
350.00	350.00	Surface	9.62	12.25
4,743.54	4,421.59	Intermediate	7.00	8.75

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
456.00	456.00	Ojo Alamo		0.00	0.000
596.15	596.00	Kirtland		0.00	0.000
903.24	902.00	Fruitland		0.00	0.000
1,166.20	1,164.00	Pictured Cliffs		0.00	0.000
1,267.58	1,265.00	Lewis		0.00	0.000
1,890.86	1,886.00	Chacra		0.00	0.000
2,605.47	2,598.00	Menefee		0.00	0.000
3,602.11	3,591.00	Point Lookout		0.00	0.000
3,738.61	3,727.00	Mancos		0.00	0.000
4,066.50	4,047.00	Mancos Silt		0.00	0.000



DJR Operating

Nageezi Unit

P09 2309

602H

Original Drilling

APD

Anticollision Report

19 June, 2020





Lonestar Consulting, LLC Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well # 602H - Slot 4
Project:	Nageezi Unit	TVD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Reference Site:	P09 2309	MD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	# 602H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	DJR
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Reference	APD		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum 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	6/19/2020		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	14,192.25	APD (Original Drilling)	MWD+HDGM	OWSG MWD + HDGM	

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						
P09 2309						
# 513H - Original Drilling - APD	400.00	400.00	19.80	17.34	8.051	CC, ES
# 513H - Original Drilling - APD	9,900.00	10,953.69	781.44	522.58	3.019	SF
# 514H - Original Drilling - APD	634.90	636.53	36.78	32.67	8.951	CC
# 514H - Original Drilling - APD	645.09	646.69	36.81	32.63	8.804	ES
# 514H - Original Drilling - APD	14,192.58	14,097.20	798.53	375.68	1.888	SF
# 601H - Original Drilling - APD	400.00	400.00	60.00	57.55	24.401	CC, ES
# 601H - Original Drilling - APD	9,200.00	9,355.32	1,430.83	1,178.14	5.662	SF

Offset Design													
P09 2309 - # 513H - Original Drilling - APD													
Survey Program: 0-MWD+HDGM													
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-123.48	-10.92	-16.51	19.80				
100.00	100.00	100.00	100.00	0.15	0.15	-123.48	-10.92	-16.51	19.80	19.49	0.31	64.221	
200.00	200.00	200.00	200.00	0.51	0.51	-123.48	-10.92	-16.51	19.80	18.77	1.03	19.311	
300.00	300.00	300.00	300.00	0.87	0.87	-123.48	-10.92	-16.51	19.80	18.06	1.74	11.364	
400.00	400.00	400.00	400.00	1.23	1.23	-123.48	-10.92	-16.51	19.80	17.34	2.46	8.051	CC, ES
500.00	499.98	499.77	499.77	1.57	1.57	101.66	-11.89	-16.39	20.53	17.38	3.15	6.520	
600.00	599.84	599.44	599.33	1.92	1.91	104.40	-16.18	-15.81	23.35	19.53	3.82	6.111	
645.09	644.79	644.35	644.14	2.08	2.07	105.47	-19.24	-15.41	25.33	21.19	4.13	6.126	
700.00	699.50	699.02	698.60	2.27	2.25	105.62	-23.90	-14.79	28.17	23.66	4.52	6.237	
800.00	799.13	798.41	797.35	2.63	2.61	101.61	-35.01	-13.31	34.34	29.11	5.23	6.566	
900.00	898.77	897.39	895.25	2.99	2.98	94.65	-49.44	-11.39	42.26	36.31	5.95	7.099	
1,000.00	998.40	995.71	991.95	3.36	3.37	86.92	-67.09	-9.05	52.67	45.99	6.68	7.887	
1,100.00	1,098.04	1,093.17	1,087.13	3.73	3.78	79.69	-87.81	-6.29	66.09	58.70	7.39	8.939	
1,200.00	1,197.67	1,189.55	1,180.51	4.10	4.21	73.49	-111.45	-3.15	82.81	74.71	8.10	10.229	
1,300.00	1,297.31	1,285.14	1,272.29	4.47	4.66	68.39	-137.92	0.37	102.87	94.08	8.79	11.702	
1,400.00	1,396.94	1,382.51	1,365.47	4.85	5.14	64.62	-165.93	4.09	124.45	114.93	9.52	13.069	
1,500.00	1,496.57	1,479.88	1,458.65	5.22	5.63	61.98	-193.95	7.82	146.40	136.14	10.26	14.266	
1,600.00	1,596.21	1,577.25	1,551.83	5.60	6.13	60.02	-221.96	11.54	168.56	157.56	11.01	15.316	
1,700.00	1,695.84	1,674.62	1,645.01	5.98	6.63	58.51	-249.98	15.27	190.88	179.12	11.75	16.239	
1,800.00	1,795.48	1,771.99	1,738.18	6.35	7.14	57.33	-277.99	18.99	213.29	200.78	12.51	17.056	
1,900.00	1,895.11	1,869.36	1,831.36	6.73	7.65	56.36	-306.00	22.72	235.77	222.51	13.26	17.782	



Lonestar Consulting, LLC Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well # 602H - Slot 4
Project:	Nageezi Unit	TVD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Reference Site:	P09 2309	MD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	# 602H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	DJR
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design P09 2309 - # 513H - Original Drilling - APD													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													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	
2,000.00	1,994.75	1,966.74	1,924.54	7.11	8.17	55.57	-334.02	26.44	258.30	244.28	14.01	18.430	
2,100.00	2,094.38	2,064.11	2,017.72	7.49	8.69	54.90	-362.03	30.17	280.87	266.10	14.77	19.013	
2,200.00	2,194.01	2,161.48	2,110.90	7.86	9.21	54.33	-390.05	33.89	303.47	287.94	15.53	19.539	
2,300.00	2,293.65	2,258.85	2,204.08	8.24	9.73	53.84	-418.06	37.62	326.10	309.81	16.29	20.016	
2,400.00	2,393.28	2,356.22	2,297.26	8.62	10.26	53.42	-446.08	41.34	348.75	331.69	17.05	20.450	
2,500.00	2,492.92	2,453.59	2,390.44	9.00	10.78	53.04	-474.09	45.07	371.41	353.59	17.82	20.846	
2,600.00	2,592.55	2,550.96	2,483.62	9.38	11.31	52.71	-502.11	48.79	394.09	375.51	18.58	21.210	
2,700.00	2,692.19	2,648.33	2,576.80	9.76	11.84	52.42	-530.12	52.52	416.77	397.43	19.34	21.545	
2,800.00	2,791.82	2,745.71	2,669.98	10.13	12.37	52.15	-558.14	56.24	439.47	419.36	20.11	21.854	
2,900.00	2,891.45	2,843.08	2,763.16	10.51	12.89	51.92	-586.15	59.96	462.18	441.30	20.87	22.141	
3,000.00	2,991.09	2,940.45	2,856.34	10.89	13.43	51.70	-614.17	63.69	484.89	463.25	21.64	22.407	
3,100.00	3,090.72	3,037.82	2,949.52	11.27	13.96	51.50	-642.18	67.41	507.61	485.20	22.41	22.654	
3,200.00	3,190.36	3,135.19	3,042.70	11.65	14.49	51.32	-670.19	71.14	530.33	507.16	23.17	22.885	
3,300.00	3,289.99	3,232.56	3,135.88	12.03	15.02	51.16	-698.21	74.86	553.06	529.12	23.94	23.101	
3,400.00	3,389.63	3,329.93	3,229.06	12.41	15.55	51.01	-726.22	78.59	575.79	551.08	24.71	23.303	
3,500.00	3,489.26	3,427.30	3,322.24	12.79	16.08	50.87	-754.24	82.31	598.52	573.05	25.48	23.493	
3,600.00	3,588.89	3,524.67	3,415.42	13.17	16.62	50.73	-782.25	86.04	621.26	595.02	26.24	23.672	
3,700.00	3,688.53	3,622.05	3,508.60	13.55	17.15	50.61	-810.27	89.76	644.00	616.99	27.01	23.841	
3,744.64	3,733.00	3,665.51	3,550.19	13.71	17.39	50.56	-822.77	91.42	654.15	626.80	27.36	23.913	
3,750.00	3,738.35	3,670.73	3,555.19	13.74	17.42	50.70	-824.27	91.62	655.39	627.99	27.40	23.922	
3,800.00	3,788.30	3,718.97	3,601.35	13.91	17.68	-159.24	-838.15	93.47	668.24	640.48	27.76	24.071	
3,850.00	3,838.24	3,766.28	3,646.62	14.06	17.94	-129.14	-851.76	95.28	683.50	655.40	28.10	24.327	
3,900.00	3,887.88	3,812.35	3,690.71	14.20	18.19	-128.22	-865.02	97.04	701.13	672.73	28.41	24.681	
3,950.00	3,936.89	3,856.90	3,733.34	14.34	18.44	-127.47	-877.84	98.74	721.13	692.44	28.70	25.130	
4,000.00	3,984.98	3,899.66	3,774.26	14.47	18.67	-126.72	-890.14	100.38	743.48	714.52	28.96	25.669	
4,050.00	4,031.85	3,940.36	3,813.21	14.59	18.90	-125.87	-901.85	101.94	768.17	738.95	29.21	26.295	
4,100.00	4,077.22	3,978.76	3,849.96	14.72	19.11	-124.86	-912.90	103.41	795.16	765.71	29.45	27.004	
4,150.00	4,120.80	4,014.61	3,884.27	14.86	19.30	-123.62	-923.21	104.78	824.41	794.75	29.67	27.790	
4,200.00	4,162.32	4,047.70	3,915.93	15.00	19.48	-122.07	-932.73	106.04	855.85	825.98	29.87	28.649	
4,250.00	4,201.53	4,077.82	3,944.75	15.16	19.65	-120.13	-941.40	107.20	889.39	859.32	30.07	29.575	
4,300.00	4,238.19	5,415.71	4,819.62	15.36	24.84	-120.44	-537.02	-456.04	911.28	880.44	30.84	29.546	
4,350.00	4,272.07	5,452.71	4,819.89	15.59	25.35	-120.75	-509.50	-480.77	890.07	857.97	32.11	27.721	
4,400.00	4,302.96	5,492.22	4,820.17	15.87	25.91	-120.86	-480.10	-507.18	871.41	837.99	33.42	26.071	
4,450.00	4,330.67	5,534.02	4,820.47	16.20	26.55	-120.80	-449.01	-535.11	855.26	820.44	34.82	24.561	
4,500.00	4,355.04	5,577.84	4,820.78	16.60	27.24	-120.84	-416.42	-564.40	841.53	805.26	36.27	23.202	
4,550.00	4,375.90	5,623.41	4,821.10	17.06	27.99	-120.42	-382.52	-594.86	830.14	792.37	37.78	21.976	
4,600.00	4,393.14	5,670.46	4,821.44	17.59	28.80	-120.18	-347.53	-626.30	820.99	781.66	39.33	20.875	
4,650.00	4,406.64	5,718.68	4,821.78	18.19	29.66	-119.96	-311.66	-658.53	813.99	773.08	40.91	19.897	
4,700.00	4,416.32	5,767.79	4,822.13	18.85	30.56	-119.80	-275.13	-691.35	809.04	766.53	42.51	19.031	
4,750.00	4,422.12	5,817.48	4,822.48	19.57	31.49	-119.70	-238.17	-724.56	806.09	761.98	44.10	18.278	
4,794.69	4,424.00	5,862.13	4,822.80	20.25	32.35	-119.69	-204.96	-754.40	805.10	759.60	45.50	17.693	
4,800.00	4,424.04	5,867.44	4,822.84	20.33	32.45	-119.69	-201.01	-757.95	805.07	759.41	45.67	17.629	
4,900.00	4,424.73	5,967.44	4,823.55	21.99	34.43	-119.71	-126.63	-824.78	804.61	755.73	48.88	16.461	
5,000.00	4,425.42	6,067.44	4,824.26	23.79	36.48	-119.73	-52.25	-891.61	804.14	751.85	52.29	15.379	
5,100.00	4,426.11	6,167.43	4,824.97	25.72	38.58	-119.75	22.13	-958.45	803.67	747.82	55.85	14.390	
5,200.00	4,426.80	6,267.43	4,825.68	27.74	40.73	-119.77	96.52	-1,025.28	803.20	743.67	59.53	13.492	
5,300.00	4,427.50	6,367.43	4,826.39	29.84	42.92	-119.80	170.90	-1,092.11	802.73	739.41	63.32	12.677	
5,400.00	4,428.19	6,467.43	4,827.10	32.00	45.15	-119.82	245.28	-1,158.94	802.27	735.08	67.19	11.941	
5,500.00	4,428.88	6,567.43	4,827.81	34.22	47.40	-119.84	319.66	-1,225.78	801.80	730.67	71.12	11.273	
5,600.00	4,429.57	6,667.43	4,828.52	36.47	49.68	-119.86	394.04	-1,292.61	801.33	726.21	75.12	10.668	
5,700.00	4,430.26	6,767.42	4,829.23	38.75	51.98	-119.88	468.42	-1,359.44	800.86	721.71	79.16	10.117	
5,800.00	4,430.95	6,867.42	4,829.95	41.07	54.30	-119.90	542.81	-1,426.27	800.40	717.16	83.24	9.616	



Lonestar Consulting, LLC Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well # 602H - Slot 4
Project:	Nageezi Unit	TVD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Reference Site:	P09 2309	MD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	# 602H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	DJR
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design P09 2309 - # 513H - Original Drilling - APD													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													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 Tooface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,900.00	4,431.65	6,967.42	4,830.66	43.40	56.64	-119.92	617.19	-1,493.10	799.93	712.58	87.35	9.158		
6,000.00	4,432.34	7,067.42	4,831.37	45.76	58.99	-119.94	691.57	-1,559.94	799.46	707.97	91.49	8.738		
6,100.00	4,433.03	7,167.42	4,832.08	48.13	61.35	-119.96	765.95	-1,626.77	798.99	703.34	95.66	8.353		
6,200.00	4,433.72	7,267.42	4,832.79	50.52	63.73	-119.98	840.33	-1,693.60	798.53	698.68	99.84	7.998		
6,300.00	4,434.41	7,367.42	4,833.50	52.92	66.12	-120.00	914.71	-1,760.43	798.06	694.01	104.05	7.670		
6,400.00	4,435.10	7,467.41	4,834.21	55.34	68.51	-120.02	989.10	-1,827.27	797.59	689.32	108.27	7.367		
6,500.00	4,435.80	7,567.41	4,834.92	57.76	70.92	-120.05	1,063.48	-1,894.10	797.13	684.62	112.50	7.085		
6,600.00	4,436.49	7,667.41	4,835.63	60.19	73.33	-120.07	1,137.86	-1,960.93	796.66	679.91	116.75	6.824		
6,700.00	4,437.18	7,767.41	4,836.34	62.63	75.74	-120.09	1,212.24	-2,027.76	796.19	675.18	121.01	6.580		
6,800.00	4,437.87	7,867.41	4,837.06	65.07	78.17	-120.11	1,286.62	-2,094.60	795.73	670.45	125.28	6.352		
6,900.00	4,438.56	7,967.41	4,837.77	67.52	80.60	-120.13	1,361.00	-2,161.43	795.26	665.71	129.55	6.139		
7,000.00	4,439.25	8,067.40	4,838.48	69.98	83.03	-120.15	1,435.38	-2,228.26	794.79	660.96	133.84	5.939		
7,100.00	4,439.95	8,167.40	4,839.19	72.44	85.47	-120.17	1,509.77	-2,295.09	794.33	656.20	138.12	5.751		
7,200.00	4,440.64	8,267.40	4,839.90	74.90	87.92	-120.19	1,584.15	-2,361.93	793.86	651.44	142.42	5.574		
7,300.00	4,441.33	8,367.40	4,840.61	77.37	90.37	-120.21	1,658.53	-2,428.76	793.40	646.68	146.72	5.408		
7,400.00	4,442.02	8,467.40	4,841.32	79.84	92.82	-120.24	1,732.91	-2,495.59	792.93	641.91	151.02	5.250		
7,500.00	4,442.71	8,567.40	4,842.03	82.32	95.27	-120.26	1,807.29	-2,562.42	792.46	637.13	155.33	5.102		
7,600.00	4,443.40	8,667.40	4,842.74	84.79	97.73	-120.28	1,881.67	-2,629.26	792.00	632.36	159.64	4.961		
7,700.00	4,444.10	8,767.39	4,843.46	87.27	100.19	-120.30	1,956.06	-2,696.09	791.53	627.58	163.96	4.828		
7,800.00	4,444.79	8,867.39	4,844.17	89.76	102.66	-120.32	2,030.44	-2,762.92	791.07	622.79	168.27	4.701		
7,900.00	4,445.48	8,967.39	4,844.88	92.24	105.12	-120.34	2,104.82	-2,829.75	790.60	618.01	172.59	4.581		
8,000.00	4,446.17	9,067.39	4,845.59	94.73	107.59	-120.36	2,179.20	-2,896.59	790.14	613.22	176.92	4.466		
8,100.00	4,446.86	9,167.39	4,846.30	97.22	110.06	-120.39	2,253.58	-2,963.42	789.67	608.43	181.24	4.357		
8,200.00	4,447.55	9,267.39	4,847.01	99.71	112.53	-120.41	2,327.96	-3,030.25	789.21	603.65	185.56	4.253		
8,300.00	4,448.25	9,367.39	4,847.72	102.20	115.01	-120.43	2,402.35	-3,097.08	788.74	598.85	189.89	4.154		
8,400.00	4,448.94	9,467.38	4,848.43	104.70	117.49	-120.45	2,476.73	-3,163.92	788.28	594.06	194.22	4.059		
8,500.00	4,449.63	9,567.38	4,849.14	107.19	119.96	-120.47	2,551.11	-3,230.75	787.81	589.27	198.54	3.968		
8,600.00	4,450.32	9,667.38	4,849.85	109.69	122.44	-120.49	2,625.49	-3,297.58	787.35	584.48	202.87	3.881		
8,700.00	4,451.01	9,767.38	4,850.57	112.19	124.92	-120.51	2,699.87	-3,364.41	786.89	579.68	207.20	3.798		
8,800.00	4,451.70	9,867.38	4,851.28	114.69	127.41	-120.54	2,774.25	-3,431.24	786.42	574.89	211.53	3.718		
8,900.00	4,452.40	9,967.38	4,851.99	117.19	129.89	-120.56	2,848.63	-3,498.08	785.96	570.10	215.86	3.641		
9,000.00	4,453.09	10,067.37	4,852.70	119.69	132.38	-120.58	2,923.02	-3,564.91	785.49	565.30	220.19	3.567		
9,100.00	4,453.78	10,167.37	4,853.41	122.19	134.86	-120.60	2,997.40	-3,631.74	785.03	560.51	224.52	3.496		
9,200.00	4,454.47	10,267.37	4,854.12	124.70	137.35	-120.62	3,071.78	-3,698.57	784.57	555.72	228.85	3.428		
9,300.00	4,455.16	10,367.37	4,854.83	127.20	139.84	-120.64	3,146.16	-3,765.41	784.10	550.92	233.18	3.363		
9,400.00	4,455.85	10,467.37	4,855.54	129.70	142.33	-120.67	3,220.54	-3,832.24	783.64	546.13	237.51	3.299		
9,500.00	4,456.55	10,567.37	4,856.25	132.21	144.82	-120.69	3,294.92	-3,899.07	783.18	541.34	241.84	3.238		
9,600.00	4,457.24	10,667.37	4,856.96	134.72	147.31	-120.71	3,369.31	-3,965.90	782.71	536.55	246.17	3.180		
9,700.00	4,457.93	10,767.36	4,857.68	137.22	149.80	-120.73	3,443.69	-4,032.74	782.25	531.76	250.49	3.123		
9,800.00	4,458.62	10,867.36	4,858.39	139.73	152.29	-120.75	3,518.07	-4,099.57	781.79	526.96	254.82	3.068		
9,889.01	4,459.24	10,953.69	4,859.00	141.96	154.45	-120.77	3,582.28	-4,157.27	781.38	522.76	258.62	3.021		
9,900.00	4,459.31	10,953.69	4,859.00	142.24	154.45	-120.77	3,582.28	-4,157.27	781.44	522.58	258.86	3.019 SF		
10,000.00	4,460.00	10,953.69	4,859.00	144.75	154.45	-120.77	3,582.28	-4,157.27	780.99	520.35	258.74	3.050		
10,100.00	4,460.70	10,953.69	4,859.00	147.26	154.45	-120.77	3,582.28	-4,157.27	809.12	554.38	254.74	3.176		
10,200.00	4,461.39	10,953.69	4,859.00	149.77	154.45	-120.77	3,582.28	-4,157.27	840.64	593.06	247.59	3.395		
10,300.00	4,462.08	10,953.69	4,859.00	152.28	154.45	-120.77	3,582.28	-4,157.27	882.44	644.21	238.22	3.704		
10,400.00	4,462.77	10,953.69	4,859.00	154.79	154.45	-120.77	3,582.28	-4,157.27	933.12	705.53	227.58	4.100		
10,500.00	4,463.46	10,953.69	4,859.00	157.30	154.45	-120.77	3,582.28	-4,157.27	991.32	774.87	216.45	4.580		
10,600.00	4,464.15	10,953.69	4,859.00	159.81	154.45	-120.77	3,582.28	-4,157.27	1,055.81	850.42	205.38	5.141		
10,700.00	4,464.85	10,953.69	4,859.00	162.32	154.45	-120.77	3,582.28	-4,157.27	1,125.49	930.75	194.74	5.779		
10,800.00	4,465.54	10,953.69	4,859.00	164.84	154.45	-120.77	3,582.28	-4,157.27	1,199.48	1,014.75	184.73	6.493		
10,900.00	4,466.23	10,953.69	4,859.00	167.35	154.45	-120.77	3,582.28	-4,157.27	1,277.01	1,101.58	175.43	7.279		



Lonestar Consulting, LLC
Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well # 602H - Slot 4
Project:	Nageezi Unit	TVD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Reference Site:	P09 2309	MD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	# 602H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	DJR
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design P09 2309 - # 513H - Original Drilling - APD													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													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 Tooface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
11,000.00	4,466.92	10,953.69	4,859.00	169.86	154.45	-120.77	3,582.28	-4,157.27	1,357.49	1,190.60	166.88	8.134		
11,100.00	4,467.61	10,953.69	4,859.00	172.38	154.45	-120.77	3,582.28	-4,157.27	1,440.41	1,281.35	159.06	9.056		
11,200.00	4,468.30	10,953.69	4,859.00	174.89	154.45	-120.77	3,582.28	-4,157.27	1,525.38	1,373.46	151.92	10.040		
11,300.00	4,469.00	10,953.69	4,859.00	177.40	154.45	-120.77	3,582.28	-4,157.27	1,612.08	1,466.66	145.42	11.086		
11,400.00	4,469.69	10,953.69	4,859.00	179.92	154.45	-120.77	3,582.28	-4,157.27	1,700.24	1,560.75	139.49	12.189		
11,500.00	4,470.38	10,953.69	4,859.00	182.43	154.45	-120.77	3,582.28	-4,157.27	1,789.64	1,655.56	134.08	13.348		
11,600.00	4,471.07	10,953.69	4,859.00	184.95	154.45	-120.77	3,582.28	-4,157.27	1,880.11	1,750.97	129.14	14.559		
11,700.00	4,471.76	10,953.69	4,859.00	187.46	154.45	-120.77	3,582.28	-4,157.27	1,971.51	1,846.89	124.62	15.820		
11,800.00	4,472.45	10,953.69	4,859.00	189.98	154.45	-120.77	3,582.28	-4,157.27	2,063.70	1,943.22	120.48	17.129		
11,900.00	4,473.15	10,953.69	4,859.00	192.50	154.45	-120.77	3,582.28	-4,157.27	2,156.59	2,039.90	116.68	18.482		
12,000.00	4,473.84	10,953.69	4,859.00	195.01	154.45	-120.77	3,582.28	-4,157.27	2,250.08	2,136.89	113.19	19.879		
12,100.00	4,474.53	10,953.69	4,859.00	197.53	154.45	-120.77	3,582.28	-4,157.27	2,344.12	2,234.15	109.97	21.316		
12,200.00	4,475.22	10,953.69	4,859.00	200.04	154.45	-120.77	3,582.28	-4,157.27	2,438.62	2,331.63	106.99	22.792		
12,300.00	4,475.91	10,953.69	4,859.00	202.56	154.45	-120.77	3,582.28	-4,157.27	2,533.56	2,429.31	104.24	24.304		
12,400.00	4,476.60	10,953.69	4,859.00	205.08	154.45	-120.77	3,582.28	-4,157.27	2,628.86	2,527.17	101.70	25.850		
12,500.00	4,477.30	10,953.69	4,859.00	207.59	154.45	-120.77	3,582.28	-4,157.27	2,724.50	2,625.17	99.33	27.429		
12,600.00	4,477.99	10,953.69	4,859.00	210.11	154.45	-120.77	3,582.28	-4,157.27	2,820.45	2,723.32	97.13	29.038		
12,700.00	4,478.68	10,953.69	4,859.00	212.63	154.45	-120.77	3,582.28	-4,157.27	2,916.67	2,821.59	95.08	30.676		
12,800.00	4,479.37	10,953.69	4,859.00	215.15	154.45	-120.77	3,582.28	-4,157.27	3,013.13	2,919.96	93.17	32.341		
12,900.00	4,480.06	10,953.69	4,859.00	217.66	154.45	-120.77	3,582.28	-4,157.27	3,109.82	3,018.43	91.38	34.031		
13,000.00	4,480.75	10,953.69	4,859.00	220.18	154.45	-120.77	3,582.28	-4,157.27	3,206.71	3,117.00	89.71	35.745		
13,100.00	4,481.45	10,953.69	4,859.00	222.70	154.45	-120.77	3,582.28	-4,157.27	3,303.78	3,215.64	88.15	37.481		
13,200.00	4,482.14	10,953.69	4,859.00	225.22	154.45	-120.77	3,582.28	-4,157.27	3,401.03	3,314.35	86.68	39.238		
13,300.00	4,482.83	10,953.69	4,859.00	227.74	154.45	-120.77	3,582.28	-4,157.27	3,498.43	3,413.13	85.30	41.014		
13,400.00	4,483.52	10,953.69	4,859.00	230.25	154.45	-120.77	3,582.28	-4,157.27	3,595.97	3,511.97	84.00	42.809		
13,500.00	4,484.21	10,953.69	4,859.00	232.77	154.45	-120.77	3,582.28	-4,157.27	3,693.65	3,610.87	82.78	44.620		
13,600.00	4,484.90	10,953.69	4,859.00	235.29	154.45	-120.77	3,582.28	-4,157.27	3,791.44	3,709.81	81.63	46.448		
13,700.00	4,485.60	10,953.69	4,859.00	237.81	154.45	-120.77	3,582.28	-4,157.27	3,889.35	3,808.81	80.54	48.289		
13,800.00	4,486.29	10,953.69	4,859.00	240.33	154.45	-120.77	3,582.28	-4,157.27	3,987.36	3,907.85	79.52	50.145		
13,900.00	4,486.98	10,953.69	4,859.00	242.85	154.45	-120.77	3,582.28	-4,157.27	4,085.47	4,006.92	78.55	52.012		
14,000.00	4,487.67	10,953.69	4,859.00	245.37	154.45	-120.77	3,582.28	-4,157.27	4,183.67	4,106.04	77.63	53.892		
14,100.00	4,488.36	10,953.69	4,859.00	247.89	154.45	-120.77	3,582.28	-4,157.27	4,281.95	4,205.19	76.76	55.781		
14,192.25	4,489.00	10,953.69	4,859.00	250.21	154.45	-120.77	3,582.28	-4,157.27	4,372.68	4,296.68	76.00	57.533		
14,192.58	4,489.00	10,953.69	4,859.00	250.22	154.45	-120.77	3,582.28	-4,157.27	4,373.00	4,295.14	77.87	56.161		



Lonestar Consulting, LLC Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well # 602H - Slot 4
Project:	Nageezi Unit	TVD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Reference Site:	P09 2309	MD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	# 602H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	DJR
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design P09 2309 - # 514H - Original Drilling - APD												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-124.11	-22.57	-33.32	40.25				
100.00	100.00	100.00	100.00	0.15	0.15	-124.11	-22.57	-33.32	40.25	39.94	0.31	130.551	
200.00	200.00	200.00	200.00	0.51	0.51	-124.11	-22.57	-33.32	40.25	39.22	1.03	39.257	
300.00	300.00	300.00	300.00	0.87	0.87	-124.11	-22.57	-33.32	40.25	38.50	1.74	23.102	
400.00	400.00	400.00	400.00	1.23	1.23	-124.11	-22.57	-33.32	40.25	37.79	2.46	16.366	
500.00	499.98	501.09	501.07	1.57	1.59	102.72	-20.92	-32.65	39.14	35.97	3.17	12.364	
600.00	599.84	601.66	601.49	1.92	1.96	115.81	-16.00	-30.64	37.05	33.19	3.86	9.592	
634.90	634.63	636.53	636.26	2.04	2.08	122.74	-13.54	-29.63	36.78	32.67	4.11	8.951 CC	
645.09	644.79	646.69	646.39	2.08	2.12	124.97	-12.75	-29.30	36.81	32.63	4.18	8.804 ES	
700.00	699.50	701.25	700.69	2.27	2.32	137.67	-7.92	-27.33	37.79	33.22	4.57	8.267	
800.00	799.13	799.82	798.52	2.63	2.68	160.64	3.21	-22.77	44.02	38.72	5.29	8.317	
900.00	898.77	897.21	894.71	2.99	3.05	179.22	17.26	-17.02	56.64	50.63	6.01	9.426	
1,000.00	998.40	994.65	990.67	3.36	3.43	-168.40	32.97	-10.60	74.07	67.34	6.72	11.017	
1,100.00	1,098.04	1,092.14	1,086.66	3.73	3.83	-160.88	48.69	-4.17	93.58	86.14	7.44	12.580	
1,200.00	1,197.67	1,189.62	1,182.66	4.10	4.22	-155.98	64.40	2.27	114.12	105.96	8.16	13.989	
1,300.00	1,297.31	1,287.10	1,278.65	4.47	4.62	-152.59	80.12	8.70	135.21	126.33	8.88	15.227	
1,400.00	1,396.94	1,384.59	1,374.64	4.85	5.02	-150.11	95.83	15.13	156.64	147.03	9.60	16.309	
1,500.00	1,496.57	1,482.07	1,470.64	5.22	5.43	-148.23	111.55	21.56	178.28	167.95	10.33	17.257	
1,600.00	1,596.21	1,579.55	1,566.63	5.60	5.83	-146.76	127.26	27.99	200.06	189.00	11.06	18.091	
1,700.00	1,695.84	1,677.04	1,662.62	5.98	6.24	-145.58	142.98	34.42	221.94	210.16	11.79	18.828	
1,800.00	1,795.48	1,774.52	1,758.62	6.35	6.65	-144.61	158.70	40.85	243.90	231.38	12.52	19.483	
1,900.00	1,895.11	1,872.00	1,854.61	6.73	7.06	-143.80	174.41	47.28	265.92	252.67	13.25	20.069	
2,000.00	1,994.75	1,969.49	1,950.80	7.11	7.47	-143.11	190.13	53.71	287.97	273.99	13.98	20.596	
2,100.00	2,094.38	2,066.97	2,046.80	7.49	7.88	-142.52	205.84	60.14	310.07	295.35	14.72	21.071	
2,200.00	2,194.01	2,164.45	2,142.59	7.86	8.29	-142.01	221.56	66.57	332.18	316.73	15.45	21.502	
2,300.00	2,293.65	2,261.94	2,238.58	8.24	8.71	-141.57	237.27	73.00	354.32	338.14	16.18	21.895	
2,400.00	2,393.28	2,359.42	2,334.57	8.62	9.12	-141.17	252.99	79.44	376.48	359.56	16.92	22.255	
2,500.00	2,492.92	2,456.90	2,430.57	9.00	9.53	-140.82	268.71	85.87	398.65	381.00	17.65	22.584	
2,600.00	2,592.55	2,554.39	2,526.56	9.38	9.95	-140.51	284.42	92.30	420.84	402.45	18.39	22.888	
2,700.00	2,692.19	2,651.87	2,622.55	9.76	10.36	-140.22	300.14	98.73	443.04	423.91	19.12	23.169	
2,800.00	2,791.82	2,749.35	2,718.55	10.13	10.77	-139.97	315.85	105.16	465.24	445.38	19.86	23.429	
2,900.00	2,891.45	2,846.84	2,814.54	10.51	11.19	-139.74	331.57	111.59	487.46	466.86	20.59	23.670	
3,000.00	2,991.09	2,944.32	2,910.53	10.89	11.60	-139.53	347.28	118.02	509.68	488.35	21.33	23.895	
3,100.00	3,090.72	3,041.80	3,006.53	11.27	12.02	-139.33	363.00	124.45	531.90	509.84	22.07	24.105	
3,200.00	3,190.36	3,139.29	3,102.52	11.65	12.43	-139.15	378.71	130.88	554.14	531.33	22.80	24.301	
3,300.00	3,289.99	3,236.77	3,198.51	12.03	12.84	-138.99	394.43	137.31	576.37	552.83	23.54	24.485	
3,400.00	3,389.63	3,334.25	3,294.51	12.41	13.26	-138.84	410.15	143.74	598.61	574.34	24.28	24.658	
3,500.00	3,489.26	3,431.74	3,390.50	12.79	13.67	-138.69	425.86	150.18	620.86	595.85	25.01	24.821	
3,600.00	3,588.89	3,529.22	3,486.49	13.17	14.09	-138.56	441.58	156.61	643.11	617.36	25.75	24.975	
3,700.00	3,688.53	3,626.70	3,582.48	13.55	14.50	-138.44	457.29	163.04	665.36	638.87	26.49	25.120	
3,744.64	3,733.00	3,670.22	3,625.33	13.71	14.69	-138.39	464.31	165.91	675.29	648.47	26.82	25.182	
3,750.00	3,738.35	3,675.45	3,630.48	13.74	14.71	-138.39	465.15	166.25	676.47	649.61	26.86	25.189	
3,800.00	3,788.30	3,724.50	3,678.79	13.91	14.92	10.59	473.06	169.49	685.83	658.62	27.21	25.204	
3,850.00	3,838.24	3,773.84	3,727.37	14.06	15.13	40.06	481.01	172.74	692.27	664.72	27.55	25.127	
3,900.00	3,887.88	3,823.17	3,775.95	14.20	15.34	40.74	488.97	176.00	695.81	667.92	27.88	24.955	
3,950.00	3,936.89	3,872.17	3,824.20	14.34	15.55	41.59	496.87	179.23	696.49	668.29	28.20	24.694	
4,000.00	3,984.98	3,920.56	3,871.85	14.47	15.76	42.75	504.67	182.42	694.43	665.91	28.52	24.352	
4,050.00	4,031.85	3,968.02	3,918.59	14.59	15.96	44.26	512.32	185.55	689.77	660.95	28.82	23.936	
4,100.00	4,077.22	4,014.28	3,964.13	14.72	16.16	46.12	519.77	188.60	682.71	653.60	29.11	23.453	
4,150.00	4,120.80	4,059.03	4,008.20	14.86	16.35	48.34	526.99	191.56	673.50	644.10	29.39	22.912	
4,200.00	4,162.32	4,102.01	4,050.52	15.00	16.53	50.91	533.92	194.39	662.44	632.76	29.68	22.321	
4,250.00	4,201.53	4,142.95	4,090.84	15.16	16.70	53.81	540.52	197.09	649.87	619.91	29.97	21.685	



Lonestar Consulting, LLC Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well # 602H - Slot 4
Project:	Nageezi Unit	TVD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Reference Site:	P09 2309	MD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	# 602H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	DJR
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design P09 2309 - # 514H - Original Drilling - APD													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													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)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
4,300.00	4,238.19	4,181.60	4,128.90	15.36	16.87	57.00	546.75	199.64	636.22	605.95	30.28	21.015		
4,350.00	4,272.07	4,217.72	4,164.47	15.59	17.02	60.40	552.57	202.03	621.95	591.33	30.61	20.317		
4,400.00	4,302.96	4,251.09	4,197.33	15.87	17.16	63.93	557.95	204.23	607.56	576.56	31.00	19.600		
4,450.00	4,330.67	4,281.50	4,227.27	16.20	17.29	67.46	562.86	206.23	593.63	562.18	31.45	18.876		
4,500.00	4,355.04	4,308.77	4,254.12	16.60	17.41	70.85	567.25	208.03	580.75	548.77	31.98	18.159		
4,550.00	4,375.90	4,328.94	4,273.97	17.06	17.50	73.62	570.62	209.25	569.61	537.03	32.57	17.487		
4,600.00	4,393.14	4,346.94	4,291.63	17.59	17.58	76.05	574.00	210.00	560.83	527.57	33.27	16.858		
4,650.00	4,406.64	4,364.09	4,308.40	18.19	17.65	78.21	577.57	210.38	554.82	520.75	34.07	16.284		
4,700.00	4,416.32	4,380.20	4,324.10	18.85	17.72	80.03	581.22	210.46	551.92	516.96	34.96	15.788		
4,718.22	4,418.88	4,385.76	4,329.50	19.11	17.75	80.60	582.55	210.42	551.69	516.39	35.30	15.629		
4,750.00	4,422.12	4,395.01	4,338.45	19.57	17.79	81.45	584.83	210.29	552.40	516.51	35.89	15.392		
4,794.69	4,424.00	4,406.85	4,349.89	20.25	17.84	82.34	587.90	209.98	555.86	519.14	36.72	15.137		
4,800.00	4,424.04	4,408.18	4,351.17	20.33	17.85	82.47	588.25	209.94	556.46	519.65	36.82	15.114		
4,900.00	4,424.73	4,438.57	4,380.27	21.99	17.99	85.51	596.86	208.42	576.36	537.79	38.58	14.941		
5,000.00	4,425.42	4,484.35	4,423.36	23.79	18.20	89.96	611.72	204.29	610.45	570.35	40.11	15.220		
5,100.00	4,426.11	4,559.98	4,492.07	25.72	18.57	96.81	641.01	192.66	654.96	613.56	41.40	15.822		
5,200.00	4,426.80	4,701.86	4,609.59	27.74	19.29	107.43	710.56	155.27	703.88	661.41	42.47	16.573		
5,300.00	4,427.50	4,998.37	4,786.11	29.84	21.31	120.19	902.75	20.20	744.07	700.55	43.52	17.097		
5,400.00	4,428.19	5,304.79	4,841.31	32.00	25.09	123.30	1,130.59	-172.96	752.60	705.71	46.89	16.051		
5,500.00	4,428.88	5,404.79	4,842.03	34.22	26.69	123.27	1,205.00	-239.75	753.12	702.89	50.22	14.995		
5,600.00	4,429.57	5,504.78	4,842.75	36.47	28.44	123.25	1,279.42	-306.54	753.63	699.92	53.71	14.031		
5,700.00	4,430.26	5,604.78	4,843.47	38.75	30.30	123.23	1,353.83	-373.34	754.15	696.83	57.32	13.158		
5,800.00	4,430.95	5,704.78	4,844.18	41.07	32.25	123.20	1,428.25	-440.13	754.67	693.65	61.02	12.367		
5,900.00	4,431.65	5,804.78	4,844.90	43.40	34.28	123.18	1,502.66	-506.93	755.19	690.38	64.81	11.652		
6,000.00	4,432.34	5,904.78	4,845.62	45.76	36.37	123.16	1,577.08	-573.72	755.71	687.04	68.66	11.006		
6,100.00	4,433.03	6,004.78	4,846.34	48.13	38.51	123.13	1,651.49	-640.52	756.22	683.65	72.58	10.420		
6,200.00	4,433.72	6,104.77	4,847.06	50.52	40.70	123.11	1,725.91	-707.31	756.74	680.21	76.54	9.887		
6,300.00	4,434.41	6,204.77	4,847.78	52.92	42.93	123.09	1,800.32	-774.11	757.26	676.72	80.54	9.403		
6,400.00	4,435.10	6,304.77	4,848.50	55.34	45.18	123.07	1,874.74	-840.90	757.78	673.21	84.57	8.960		
6,500.00	4,435.80	6,404.77	4,849.22	57.76	47.46	123.04	1,949.16	-907.69	758.30	669.66	88.64	8.555		
6,600.00	4,436.49	6,504.77	4,849.93	60.19	49.77	123.02	2,023.57	-974.49	758.82	666.09	92.73	8.183		
6,700.00	4,437.18	6,604.76	4,850.65	62.63	52.10	123.00	2,097.99	-1,041.28	759.33	662.49	96.84	7.841		
6,800.00	4,437.87	6,704.76	4,851.37	65.07	54.44	122.97	2,172.40	-1,108.08	759.85	658.87	100.98	7.525		
6,900.00	4,438.56	6,804.76	4,852.09	67.52	56.80	122.95	2,246.82	-1,174.87	760.37	655.24	105.13	7.232		
7,000.00	4,439.25	6,904.76	4,852.81	69.98	59.17	122.93	2,321.23	-1,241.67	760.89	651.59	109.30	6.961		
7,100.00	4,439.95	7,004.76	4,853.53	72.44	61.55	122.90	2,395.65	-1,308.46	761.41	647.92	113.49	6.709		
7,200.00	4,440.64	7,104.76	4,854.25	74.90	63.94	122.88	2,470.06	-1,375.26	761.93	644.24	117.69	6.474		
7,300.00	4,441.33	7,204.75	4,854.97	77.37	66.34	122.86	2,544.48	-1,442.05	762.45	640.55	121.90	6.255		
7,400.00	4,442.02	7,304.75	4,855.69	79.84	68.75	122.84	2,618.89	-1,508.85	762.97	636.85	126.12	6.050		
7,500.00	4,442.71	7,404.75	4,856.40	82.32	71.17	122.81	2,693.31	-1,575.64	763.49	633.14	130.35	5.857		
7,600.00	4,443.40	7,504.75	4,857.12	84.79	73.60	122.79	2,767.72	-1,642.43	764.01	629.42	134.59	5.677		
7,700.00	4,444.10	7,604.75	4,857.84	87.27	76.03	122.77	2,842.14	-1,709.23	764.53	625.69	138.84	5.507		
7,800.00	4,444.79	7,704.74	4,858.56	89.76	78.46	122.75	2,916.55	-1,776.02	765.05	621.96	143.09	5.347		
7,900.00	4,445.48	7,804.74	4,859.28	92.24	80.91	122.72	2,990.97	-1,842.82	765.57	618.21	147.36	5.195		
8,000.00	4,446.17	7,904.74	4,860.00	94.73	83.35	122.70	3,065.38	-1,909.61	766.09	614.46	151.63	5.052		
8,100.00	4,446.86	8,004.74	4,860.72	97.22	85.80	122.68	3,139.80	-1,976.41	766.61	610.70	155.91	4.917		
8,200.00	4,447.55	8,104.74	4,861.44	99.71	88.25	122.65	3,214.21	-2,043.20	767.13	606.94	160.19	4.789		
8,300.00	4,448.25	8,204.74	4,862.15	102.20	90.71	122.63	3,288.63	-2,110.00	767.65	603.17	164.48	4.667		
8,400.00	4,448.94	8,304.73	4,862.87	104.70	93.17	122.61	3,363.04	-2,176.79	768.17	599.40	168.77	4.551		
8,500.00	4,449.63	8,404.73	4,863.59	107.19	95.63	122.59	3,437.46	-2,243.58	768.69	595.62	173.07	4.441		
8,600.00	4,450.32	8,504.73	4,864.31	109.69	98.10	122.56	3,511.87	-2,310.38	769.21	591.84	177.38	4.337		
8,700.00	4,451.01	8,604.73	4,865.03	112.19	100.57	122.54	3,586.29	-2,377.17	769.73	588.05	181.69	4.237		



Lonestar Consulting, LLC Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well # 602H - Slot 4
Project:	Nageezi Unit	TVD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Reference Site:	P09 2309	MD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	# 602H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	DJR
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design P09 2309 - # 514H - Original Drilling - APD													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Semi Major Axis (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,800.00	4,451.70	8,704.73	4,865.75	114.69	103.04	122.52		3,660.70	-2,443.97	770.26	584.25	186.00	4.141	
8,900.00	4,452.40	8,804.72	4,866.47	117.19	105.51	122.50		3,735.12	-2,510.76	770.78	580.46	190.32	4.050	
9,000.00	4,453.09	8,904.72	4,867.19	119.69	107.99	122.48		3,809.54	-2,577.56	771.30	576.66	194.64	3.963	
9,100.00	4,453.78	9,004.72	4,867.90	122.19	110.46	122.45		3,883.95	-2,644.35	771.82	572.85	198.97	3.879	
9,200.00	4,454.47	9,104.72	4,868.62	124.70	112.94	122.43		3,958.37	-2,711.15	772.34	569.04	203.30	3.799	
9,300.00	4,455.16	9,204.72	4,869.34	127.20	115.42	122.41		4,032.78	-2,777.94	772.86	565.23	207.64	3.722	
9,400.00	4,455.85	9,304.72	4,870.06	129.70	117.90	122.39		4,107.20	-2,844.73	773.39	561.41	211.97	3.649	
9,500.00	4,456.55	9,404.71	4,870.78	132.21	120.39	122.36		4,181.61	-2,911.53	773.91	557.59	216.31	3.578	
9,600.00	4,457.24	9,504.71	4,871.50	134.72	122.87	122.34		4,256.03	-2,978.32	774.43	553.77	220.66	3.510	
9,700.00	4,457.93	9,604.71	4,872.22	137.22	125.36	122.32		4,330.44	-3,045.12	774.95	549.95	225.01	3.444	
9,800.00	4,458.62	9,704.71	4,872.94	139.73	127.84	122.30		4,404.86	-3,111.91	775.48	546.12	229.36	3.381	
9,900.00	4,459.31	9,804.71	4,873.65	142.24	130.33	122.28		4,479.27	-3,178.71	776.00	542.29	233.71	3.320	
10,000.00	4,460.00	9,904.70	4,874.37	144.75	132.82	122.25		4,553.69	-3,245.50	776.52	538.45	238.07	3.262	
10,100.00	4,460.70	10,004.70	4,875.09	147.26	135.31	122.23		4,628.10	-3,312.30	777.04	534.62	242.43	3.205	
10,200.00	4,461.39	10,104.70	4,875.81	149.77	137.80	122.21		4,702.52	-3,379.09	777.57	530.78	246.79	3.151	
10,300.00	4,462.08	10,204.70	4,876.53	152.28	140.30	122.19		4,776.93	-3,445.88	778.09	526.93	251.16	3.098	
10,400.00	4,462.77	10,304.70	4,877.25	154.79	142.79	122.17		4,851.35	-3,512.68	778.61	523.09	255.52	3.047	
10,500.00	4,463.46	10,404.70	4,877.97	157.30	145.28	122.14		4,925.76	-3,579.47	779.14	519.24	259.90	2.998	
10,600.00	4,464.15	10,504.69	4,878.69	159.81	147.78	122.12		5,000.18	-3,646.27	779.66	515.39	264.27	2.950	
10,700.00	4,464.85	10,604.69	4,879.41	162.32	150.27	122.10		5,074.59	-3,713.06	780.18	511.54	268.65	2.904	
10,800.00	4,465.54	10,704.69	4,880.12	164.84	152.77	122.08		5,149.01	-3,779.86	780.71	507.68	273.02	2.859	
10,900.00	4,466.23	10,804.69	4,880.84	167.35	155.26	122.06		5,223.42	-3,846.65	781.23	503.82	277.41	2.816	
11,000.00	4,466.92	10,904.69	4,881.56	169.86	157.76	122.04		5,297.84	-3,913.45	781.75	499.97	281.79	2.774	
11,100.00	4,467.61	11,004.68	4,882.28	172.38	160.26	122.01		5,372.25	-3,980.24	782.28	496.10	286.17	2.734	
11,200.00	4,468.30	11,104.68	4,883.00	174.89	162.76	121.99		5,446.67	-4,047.03	782.80	492.24	290.56	2.694	
11,300.00	4,469.00	11,204.68	4,883.72	177.40	165.26	121.97		5,521.08	-4,113.83	783.33	488.37	294.95	2.656	
11,400.00	4,469.69	11,304.68	4,884.44	179.92	167.76	121.95		5,595.50	-4,180.62	783.85	484.50	299.35	2.619	
11,500.00	4,470.38	11,404.68	4,885.16	182.43	170.26	121.93		5,669.92	-4,247.42	784.37	480.63	303.74	2.582	
11,600.00	4,471.07	11,504.68	4,885.87	184.95	172.76	121.91		5,744.33	-4,314.21	784.90	476.76	308.14	2.547	
11,700.00	4,471.76	11,604.67	4,886.59	187.46	175.26	121.89		5,818.75	-4,381.01	785.42	472.88	312.54	2.513	
11,800.00	4,472.45	11,704.67	4,887.31	189.98	177.76	121.86		5,893.16	-4,447.80	785.95	469.01	316.94	2.480	
11,900.00	4,473.15	11,804.67	4,888.03	192.50	180.26	121.84		5,967.58	-4,514.60	786.47	465.13	321.35	2.447	
12,000.00	4,473.84	11,904.67	4,888.75	195.01	182.76	121.82		6,041.99	-4,581.39	787.00	461.25	325.75	2.416	
12,100.00	4,474.53	12,004.67	4,889.47	197.53	185.27	121.80		6,116.41	-4,648.18	787.52	457.36	330.16	2.385	
12,200.00	4,475.22	12,104.66	4,890.19	200.04	187.77	121.78		6,190.82	-4,714.98	788.05	453.48	334.57	2.355	
12,300.00	4,475.91	12,204.66	4,890.91	202.56	190.27	121.76		6,265.24	-4,781.77	788.57	449.59	338.98	2.326	
12,400.00	4,476.60	12,304.66	4,891.62	205.08	192.78	121.74		6,339.65	-4,848.57	789.10	445.70	343.40	2.298	
12,500.00	4,477.30	12,404.66	4,892.34	207.59	195.28	121.71		6,414.07	-4,915.36	789.62	441.81	347.81	2.270	
12,600.00	4,477.99	12,504.66	4,893.06	210.11	197.78	121.69		6,488.48	-4,982.16	790.15	437.92	352.23	2.243	
12,700.00	4,478.68	12,604.66	4,893.78	212.63	200.29	121.67		6,562.90	-5,048.95	790.68	434.02	356.65	2.217	
12,800.00	4,479.37	12,704.65	4,894.50	215.15	202.79	121.65		6,637.31	-5,115.75	791.20	430.13	361.08	2.191	
12,900.00	4,480.06	12,804.65	4,895.22	217.66	205.30	121.63		6,711.73	-5,182.54	791.73	426.23	365.50	2.166	
13,000.00	4,480.75	12,904.65	4,895.94	220.18	207.80	121.61		6,786.14	-5,249.33	792.25	422.33	369.93	2.142	
13,100.00	4,481.45	13,004.65	4,896.66	222.70	210.31	121.59		6,860.56	-5,316.13	792.78	418.42	374.35	2.118	
13,200.00	4,482.14	13,104.65	4,897.37	225.22	212.82	121.57		6,934.97	-5,382.92	793.31	414.52	378.78	2.094	
13,300.00	4,482.83	13,204.65	4,898.09	227.74	215.32	121.55		7,009.39	-5,449.72	793.83	410.62	383.22	2.071	
13,400.00	4,483.52	13,304.64	4,898.81	230.25	217.83	121.52		7,083.80	-5,516.51	794.36	406.71	387.65	2.049	
13,500.00	4,484.21	13,404.64	4,899.53	232.77	220.34	121.50		7,158.22	-5,583.31	794.89	402.80	392.09	2.027	
13,600.00	4,484.90	13,504.64	4,900.25	235.29	222.84	121.48		7,232.63	-5,650.10	795.41	398.89	396.52	2.006	
13,700.00	4,485.60	13,604.64	4,900.97	237.81	225.35	121.46		7,307.05	-5,716.90	795.94	394.98	400.96	1.985	
13,800.00	4,486.29	13,704.64	4,901.69	240.33	227.86	121.44		7,381.46	-5,783.69	796.47	391.06	405.40	1.965	
13,900.00	4,486.98	13,804.63	4,902.41	242.85	230.36	121.42		7,455.88	-5,850.49	796.99	387.14	409.85	1.945	



Lonestar Consulting, LLC
Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well # 602H - Slot 4
Project:	Nageezi Unit	TVD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Reference Site:	P09 2309	MD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	# 602H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	DJR
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design P09 2309 - # 514H - Original Drilling - APD													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Reference	Offset	Reference	Offset	(usft)	(usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
14,000.00	4,487.67	13,904.63	4,903.13	245.37	232.87	121.40	7,530.30	-5,917.28	797.52	383.23	414.29	1.925		
14,100.00	4,488.36	14,004.63	4,903.84	247.89	235.38	121.38	7,604.71	-5,984.07	798.05	379.31	418.74	1.906		
14,192.25	4,489.00	14,096.88	4,904.51	250.21	237.69	121.36	7,673.36	-6,045.69	798.53	375.69	422.84	1.888		
14,192.58	4,489.00	14,097.20	4,904.51	250.22	237.70	121.36	7,673.60	-6,045.91	798.53	375.68	422.85	1.888 SF		



Lonestar Consulting, LLC Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well # 602H - Slot 4
Project:	Nageezi Unit	TVD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Reference Site:	P09 2309	MD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	# 602H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	DJR
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design P09 2309 - # 601H - Original Drilling - APD													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Semi Major Axis 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	-124.35	-33.85	-49.54	60.00					
100.00	100.00	100.00	100.00	0.15	0.15	-124.35	-33.85	-49.54	60.00	59.70	0.31	194.640		
200.00	200.00	200.00	200.00	0.51	0.51	-124.35	-33.85	-49.54	60.00	58.98	1.03	58.528		
300.00	300.00	300.00	300.00	0.87	0.87	-124.35	-33.85	-49.54	60.00	58.26	1.74	34.443		
400.00	400.00	400.00	400.00	1.23	1.23	-124.35	-33.85	-49.54	60.00	57.55	2.46	24.401 CC, ES		
500.00	499.98	498.69	498.68	1.57	1.57	99.54	-34.73	-49.91	61.08	57.94	3.15	19.418		
600.00	599.84	596.78	596.68	1.92	1.90	101.83	-38.81	-51.53	65.55	61.74	3.81	17.186		
645.09	644.79	640.91	640.71	2.08	2.06	103.09	-41.36	-52.67	68.74	64.62	4.12	16.671		
700.00	699.50	694.55	694.15	2.27	2.24	104.40	-45.55	-54.42	73.51	69.01	4.50	16.331		
800.00	799.13	791.90	790.90	2.63	2.59	105.25	-55.51	-58.58	84.25	79.06	5.20	16.209		
900.00	898.77	888.65	888.63	2.99	2.95	104.64	-68.40	-63.96	97.59	91.69	5.90	16.537		
1,000.00	998.40	984.57	981.02	3.36	3.33	103.13	-84.13	-70.52	113.54	106.93	6.61	17.184		
1,100.00	1,098.04	1,079.48	1,073.80	3.73	3.72	101.17	-102.55	-78.21	132.19	124.88	7.31	18.077		
1,200.00	1,197.67	1,173.16	1,164.69	4.10	4.14	99.02	-123.50	-86.95	153.63	145.62	8.01	19.175		
1,300.00	1,297.31	1,265.47	1,253.46	4.47	4.57	96.87	-146.82	-96.68	177.92	169.21	8.70	20.442		
1,400.00	1,396.94	1,356.47	1,340.14	4.85	5.02	94.82	-172.38	-107.34	205.08	195.69	9.39	21.847		
1,500.00	1,496.57	1,452.05	1,430.76	5.22	5.52	92.99	-200.44	-119.05	233.68	223.54	10.13	23.060		
1,600.00	1,596.21	1,547.64	1,521.39	5.60	6.02	91.56	-228.50	-130.76	262.45	251.56	10.88	24.112		
1,700.00	1,695.84	1,643.23	1,612.01	5.98	6.54	90.41	-256.57	-142.47	291.34	279.70	11.64	25.029		
1,800.00	1,795.48	1,738.82	1,702.63	6.35	7.06	89.47	-284.63	-154.18	320.32	307.92	12.40	25.834		
1,900.00	1,895.11	1,834.40	1,793.25	6.73	7.58	88.68	-312.69	-165.89	349.36	336.20	13.16	26.546		
2,000.00	1,994.75	1,929.99	1,883.87	7.11	8.11	88.01	-340.76	-177.60	378.46	364.54	13.92	27.179		
2,100.00	2,094.38	2,025.58	1,974.49	7.49	8.65	87.44	-368.82	-189.31	407.60	392.91	14.69	27.745		
2,200.00	2,194.01	2,121.17	2,065.12	7.86	9.18	86.95	-396.88	-201.02	436.77	421.31	15.46	28.254		
2,300.00	2,293.65	2,216.76	2,155.74	8.24	9.72	86.52	-424.95	-212.73	465.96	449.74	16.23	28.713		
2,400.00	2,393.28	2,312.34	2,246.36	8.62	10.26	86.13	-453.01	-224.44	495.18	478.18	17.00	29.130		
2,500.00	2,492.92	2,407.93	2,336.98	9.00	10.80	85.80	-481.07	-236.15	524.42	506.64	17.77	29.511		
2,600.00	2,592.55	2,503.52	2,427.60	9.38	11.35	85.49	-509.14	-247.86	553.67	535.12	18.54	29.859		
2,700.00	2,692.19	2,599.11	2,518.23	9.76	11.89	85.22	-537.20	-259.57	582.93	563.61	19.32	30.178		
2,800.00	2,791.82	2,694.69	2,608.85	10.13	12.44	84.97	-565.26	-271.28	612.20	592.11	20.09	30.472		
2,900.00	2,891.45	2,790.28	2,699.47	10.51	12.99	84.75	-593.33	-282.99	641.48	620.62	20.87	30.744		
3,000.00	2,991.09	2,885.87	2,790.09	10.89	13.53	84.54	-621.39	-294.70	670.78	649.14	21.64	30.996		
3,100.00	3,090.72	2,981.46	2,880.71	11.27	14.08	84.36	-649.45	-306.41	700.07	677.66	22.42	31.230		
3,200.00	3,190.36	3,077.04	2,971.34	11.65	14.63	84.18	-677.52	-318.12	729.38	706.19	23.19	31.448		
3,300.00	3,289.99	3,172.63	3,061.96	12.03	15.18	84.02	-705.58	-329.83	758.69	734.72	23.97	31.651		
3,400.00	3,389.63	3,268.22	3,152.58	12.41	15.73	83.88	-733.64	-341.54	788.01	763.26	24.75	31.841		
3,500.00	3,489.26	3,363.81	3,243.20	12.79	16.28	83.74	-761.71	-353.25	817.33	791.80	25.53	32.020		
3,600.00	3,588.89	3,459.39	3,333.82	13.17	16.83	83.61	-789.77	-364.96	846.65	820.35	26.30	32.187		
3,700.00	3,688.53	3,554.98	3,424.44	13.55	17.39	83.49	-817.83	-376.67	875.98	848.89	27.08	32.345		
3,744.64	3,733.00	3,597.65	3,464.90	13.71	17.63	83.44	-830.36	-381.90	889.07	861.64	27.43	32.412		
3,750.00	3,738.35	3,602.77	3,469.75	13.74	17.66	83.64	-831.87	-382.53	890.64	863.17	27.47	32.421		
3,800.00	3,788.30	3,650.37	3,514.88	13.91	17.94	-125.82	-845.84	-388.36	905.58	877.74	27.84	32.532		
3,850.00	3,838.24	3,697.44	3,559.50	14.06	18.21	-95.37	-859.66	-394.12	920.92	892.75	28.17	32.693		
3,900.00	3,887.88	3,743.68	3,603.34	14.20	18.48	-94.27	-873.23	-399.79	936.66	908.18	28.48	32.893		
3,950.00	3,936.89	3,788.81	3,646.12	14.34	18.74	-93.50	-886.48	-405.32	952.82	924.06	28.76	33.129		
4,000.00	3,984.98	3,832.55	3,687.59	14.47	18.99	-92.89	-899.32	-410.67	969.47	940.44	29.03	33.401		
4,050.00	4,031.85	3,874.63	3,727.49	14.59	19.23	-92.38	-911.68	-415.83	986.67	957.40	29.27	33.707		
4,100.00	4,077.22	3,925.73	3,776.10	14.72	19.52	-92.16	-925.37	-423.49	1,004.32	974.72	29.60	33.935		
4,150.00	4,120.80	3,979.94	3,827.84	14.86	19.81	-91.98	-936.80	-434.85	1,022.11	992.16	29.94	34.134		
4,200.00	4,162.32	4,037.38	3,882.45	15.00	20.10	-91.83	-945.33	-450.41	1,039.90	1,009.58	30.32	34.300		
4,250.00	4,201.53	4,098.60	3,939.92	15.16	20.37	-91.72	-950.29	-470.86	1,057.53	1,026.81	30.72	34.425		
4,300.00	4,238.19	4,164.21	4,000.07	15.36	20.63	-91.64	-950.83	-497.00	1,074.81	1,043.66	31.15	34.502		



Lonestar Consulting, LLC Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well # 602H - Slot 4
Project:	Nageezi Unit	TVD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Reference Site:	P09 2309	MD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	# 602H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	DJR
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													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		
4,350.00	4,272.07	4,234.87	4,062.46	15.59	20.88	-91.61	-945.88	-529.71	1,091.53	1,059.91	31.63	34.514		
4,400.00	4,302.96	4,311.21	4,126.24	15.87	21.10	-91.61	-934.16	-569.90	1,107.46	1,075.30	32.16	34.437		
4,450.00	4,330.67	4,393.74	4,189.91	16.20	21.31	-91.61	-914.23	-618.39	1,122.32	1,089.54	32.78	34.235		
4,500.00	4,355.04	4,482.75	4,251.24	16.60	21.51	-91.59	-884.66	-675.61	1,135.83	1,102.28	33.56	33.847		
4,550.00	4,375.90	4,578.07	4,307.15	17.06	21.70	-91.49	-844.37	-741.33	1,147.69	1,113.13	34.56	33.209		
4,600.00	4,393.14	4,678.89	4,353.94	17.59	21.92	-91.26	-793.00	-814.24	1,157.60	1,121.73	35.87	32.271		
4,650.00	4,406.64	4,783.68	4,387.89	18.19	22.30	-90.86	-731.45	-891.79	1,165.33	1,127.80	37.54	31.046		
4,700.00	4,416.32	4,890.24	4,406.16	18.85	23.01	-90.25	-662.03	-970.38	1,170.73	1,131.21	39.52	29.625		
4,750.00	4,422.12	4,970.57	4,409.15	19.57	23.82	-89.62	-606.39	-1,028.20	1,173.98	1,132.51	41.47	28.308		
4,794.69	4,424.00	5,015.15	4,409.43	20.25	24.39	-89.31	-575.17	-1,060.02	1,176.57	1,133.90	42.67	27.573		
4,800.00	4,424.04	5,020.45	4,409.46	20.33	24.46	-89.31	-571.46	-1,063.80	1,176.87	1,134.06	42.82	27.487		
4,900.00	4,424.73	5,120.29	4,410.10	21.99	25.96	-89.31	-501.55	-1,135.07	1,182.62	1,136.30	46.32	25.531		
5,000.00	4,425.42	5,220.12	4,410.73	23.79	27.68	-89.31	-431.64	-1,206.33	1,188.36	1,138.35	50.01	23.760		
5,100.00	4,426.11	5,319.95	4,411.36	25.72	29.56	-89.31	-361.72	-1,277.60	1,194.11	1,140.17	53.94	22.139		
5,200.00	4,426.80	5,419.79	4,412.00	27.74	31.55	-89.31	-291.81	-1,348.86	1,199.85	1,141.81	58.04	20.671		
5,300.00	4,427.50	5,519.62	4,412.63	29.84	33.63	-89.32	-221.90	-1,420.13	1,205.60	1,143.30	62.30	19.352		
5,400.00	4,428.19	5,619.46	4,413.27	32.00	35.78	-89.32	-151.98	-1,491.39	1,211.34	1,144.67	66.68	18.167		
5,500.00	4,428.88	5,719.29	4,413.90	34.22	37.99	-89.32	-82.07	-1,562.66	1,217.09	1,145.94	71.15	17.106		
5,600.00	4,429.57	5,819.13	4,414.54	36.47	40.25	-89.32	-12.16	-1,633.92	1,222.83	1,147.13	75.71	16.152		
5,700.00	4,430.26	5,918.96	4,415.17	38.75	42.54	-89.32	57.76	-1,705.19	1,228.58	1,148.25	80.33	15.294		
5,800.00	4,430.95	6,018.80	4,415.80	41.07	44.87	-89.32	127.67	-1,776.45	1,234.32	1,149.31	85.01	14.520		
5,900.00	4,431.65	6,118.63	4,416.44	43.40	47.22	-89.32	197.58	-1,847.72	1,240.07	1,150.33	89.74	13.819		
6,000.00	4,432.34	6,218.47	4,417.07	45.76	49.60	-89.32	267.50	-1,918.98	1,245.81	1,151.31	94.51	13.182		
6,100.00	4,433.03	6,318.30	4,417.71	48.13	52.00	-89.32	337.41	-1,990.25	1,251.56	1,152.25	99.31	12.603		
6,200.00	4,433.72	6,418.14	4,418.34	50.52	54.42	-89.32	407.32	-2,061.51	1,257.30	1,153.16	104.14	12.073		
6,300.00	4,434.41	6,517.97	4,418.98	52.92	56.85	-89.32	477.24	-2,132.78	1,263.05	1,154.05	109.00	11.588		
6,400.00	4,435.10	6,617.81	4,419.61	55.34	59.30	-89.32	547.15	-2,204.05	1,268.79	1,154.92	113.88	11.142		
6,500.00	4,435.80	6,717.64	4,420.25	57.76	61.75	-89.32	617.06	-2,275.31	1,274.54	1,155.76	118.78	10.730		
6,600.00	4,436.49	6,817.48	4,420.88	60.19	64.22	-89.32	686.98	-2,346.58	1,280.28	1,156.59	123.69	10.350		
6,700.00	4,437.18	6,917.31	4,421.51	62.63	66.70	-89.32	756.89	-2,417.84	1,286.03	1,157.40	128.63	9.998		
6,800.00	4,437.87	7,017.15	4,422.15	65.07	69.19	-89.32	826.80	-2,489.11	1,291.77	1,158.20	133.57	9.671		
6,900.00	4,438.56	7,116.98	4,422.78	67.52	71.68	-89.32	896.72	-2,560.37	1,297.52	1,158.99	138.53	9.366		
7,000.00	4,439.25	7,216.82	4,423.42	69.98	74.18	-89.33	966.63	-2,631.64	1,303.26	1,159.76	143.50	9.082		
7,100.00	4,439.95	7,316.65	4,424.05	72.44	76.69	-89.33	1,036.54	-2,702.90	1,309.01	1,160.53	148.48	8.816		
7,200.00	4,440.64	7,416.49	4,424.69	74.90	79.20	-89.33	1,106.46	-2,774.17	1,314.75	1,161.28	153.47	8.567		
7,300.00	4,441.33	7,516.32	4,425.32	77.37	81.72	-89.33	1,176.37	-2,845.43	1,320.50	1,162.03	158.47	8.333		
7,400.00	4,442.02	7,616.16	4,425.95	79.84	84.24	-89.33	1,246.28	-2,916.70	1,326.24	1,162.77	163.47	8.113		
7,500.00	4,442.71	7,715.99	4,426.59	82.32	86.77	-89.33	1,316.20	-2,987.96	1,331.99	1,163.51	168.48	7.906		
7,600.00	4,443.40	7,815.83	4,427.22	84.79	89.30	-89.33	1,386.11	-3,059.23	1,337.73	1,164.24	173.50	7.710		
7,700.00	4,444.10	7,915.66	4,427.86	87.27	91.83	-89.33	1,456.02	-3,130.49	1,343.48	1,164.96	178.52	7.526		
7,800.00	4,444.79	8,015.50	4,428.49	89.76	94.37	-89.33	1,525.94	-3,201.76	1,349.22	1,165.68	183.55	7.351		
7,900.00	4,445.48	8,115.33	4,429.13	92.24	96.91	-89.33	1,595.85	-3,273.02	1,354.97	1,166.39	188.58	7.185		
8,000.00	4,446.17	8,215.17	4,429.76	94.73	99.45	-89.33	1,665.76	-3,344.29	1,360.71	1,167.10	193.61	7.028		
8,100.00	4,446.86	8,315.00	4,430.39	97.22	102.00	-89.33	1,735.68	-3,415.55	1,366.46	1,167.81	198.65	6.879		
8,200.00	4,447.55	8,414.83	4,431.03	99.71	104.55	-89.33	1,805.59	-3,486.82	1,372.20	1,168.51	203.70	6.736		
8,300.00	4,448.25	8,514.67	4,431.66	102.20	107.10	-89.33	1,875.50	-3,558.08	1,377.95	1,169.20	208.75	6.601		
8,400.00	4,448.94	8,614.50	4,432.30	104.70	109.65	-89.33	1,945.42	-3,629.35	1,383.69	1,169.90	213.80	6.472		
8,500.00	4,449.63	8,714.34	4,432.93	107.19	112.20	-89.33	2,015.33	-3,700.61	1,389.44	1,170.59	218.85	6.349		
8,600.00	4,450.32	8,814.17	4,433.57	109.69	114.76	-89.33	2,085.24	-3,771.88	1,395.18	1,171.28	223.91	6.231		
8,700.00	4,451.01	8,914.01	4,434.20	112.19	117.32	-89.33	2,155.16	-3,843.14	1,400.93	1,171.97	228.96	6.119		
8,800.00	4,451.70	9,013.84	4,434.83	114.69	119.88	-89.33	2,225.07	-3,914.41	1,406.67	1,172.65	234.03	6.011		
8,900.00	4,452.40	9,113.68	4,435.47	117.19	122.44	-89.33	2,294.98	-3,985.68	1,412.42	1,173.33	239.09	5.907		



Lonestar Consulting, LLC Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well # 602H - Slot 4
Project:	Nageezi Unit	TVD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Reference Site:	P09 2309	MD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	# 602H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	DJR
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design P09 2309 - # 601H - Original Drilling - APD													Offset Site Error:	0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft	
Reference		Offset		Semi Major Axis		Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
9,000.00	4,453.09	9,213.51	4,436.10	119.69	125.00	-89.34	2,364.89	-4,056.94	1,418.16	1,174.01	244.16	5.808			
9,100.00	4,453.78	9,313.35	4,436.74	122.19	127.56	-89.34	2,434.81	-4,128.21	1,423.91	1,174.69	249.22	5.713			
9,200.00	4,454.47	9,355.32	4,437.00	124.70	128.64	-89.34	2,464.20	-4,158.17	1,430.83	1,178.14	252.69	5.662 SF			
9,300.00	4,455.16	9,355.32	4,437.00	127.20	128.64	-89.34	2,464.20	-4,158.17	1,444.04	1,189.99	254.05	5.684			
9,400.00	4,455.85	9,355.32	4,437.00	129.70	128.64	-89.34	2,464.20	-4,158.17	1,463.97	1,209.74	254.23	5.758			
9,500.00	4,456.55	9,355.32	4,437.00	132.21	128.64	-89.34	2,464.20	-4,158.17	1,490.37	1,237.03	253.34	5.883			
9,600.00	4,457.24	9,355.32	4,437.00	134.72	128.64	-89.34	2,464.20	-4,158.17	1,522.89	1,271.39	251.50	6.055			
9,700.00	4,457.93	9,355.32	4,437.00	137.22	128.64	-89.34	2,464.20	-4,158.17	1,561.14	1,312.31	248.83	6.274			
9,800.00	4,458.62	9,355.32	4,437.00	139.73	128.64	-89.34	2,464.20	-4,158.17	1,604.72	1,359.22	245.50	6.536			
9,900.00	4,459.31	9,355.32	4,437.00	142.24	128.64	-89.34	2,464.20	-4,158.17	1,653.22	1,411.56	241.65	6.841			
10,000.00	4,460.00	9,355.32	4,437.00	144.75	128.64	-89.34	2,464.20	-4,158.17	1,706.19	1,468.78	237.42	7.166			
10,100.00	4,460.70	9,355.32	4,437.00	147.26	128.64	-89.34	2,464.20	-4,158.17	1,763.26	1,530.34	232.92	7.570			
10,200.00	4,461.39	9,355.32	4,437.00	149.77	128.64	-89.34	2,464.20	-4,158.17	1,824.02	1,595.77	228.25	7.991			
10,300.00	4,462.08	9,355.32	4,437.00	152.28	128.64	-89.34	2,464.20	-4,158.17	1,888.13	1,664.62	223.51	8.448			
10,400.00	4,462.77	9,355.32	4,437.00	154.79	128.64	-89.34	2,464.20	-4,158.17	1,955.25	1,736.49	218.76	8.938			
10,500.00	4,463.46	9,355.32	4,437.00	157.30	128.64	-89.34	2,464.20	-4,158.17	2,025.09	1,811.04	214.06	9.461			
10,600.00	4,464.15	9,355.32	4,437.00	159.81	128.64	-89.34	2,464.20	-4,158.17	2,097.37	1,887.94	209.43	10.015			
10,700.00	4,464.85	9,355.32	4,437.00	162.32	128.64	-89.34	2,464.20	-4,158.17	2,171.86	1,966.93	204.92	10.598			
10,800.00	4,465.54	9,355.32	4,437.00	164.84	128.64	-89.34	2,464.20	-4,158.17	2,248.32	2,047.77	200.55	11.211			
10,900.00	4,466.23	9,355.32	4,437.00	167.35	128.64	-89.34	2,464.20	-4,158.17	2,326.57	2,130.24	196.33	11.850			
11,000.00	4,466.92	9,355.32	4,437.00	169.86	128.64	-89.34	2,464.20	-4,158.17	2,406.43	2,214.17	192.26	12.516			
11,100.00	4,467.61	9,355.32	4,437.00	172.38	128.64	-89.34	2,464.20	-4,158.17	2,487.75	2,299.39	188.36	13.208			
11,200.00	4,468.30	9,355.32	4,437.00	174.89	128.64	-89.34	2,464.20	-4,158.17	2,570.38	2,385.77	184.62	13.923			
11,300.00	4,469.00	9,355.32	4,437.00	177.40	128.64	-89.34	2,464.20	-4,158.17	2,654.21	2,473.17	181.04	14.661			
11,400.00	4,469.69	9,355.32	4,437.00	179.92	128.64	-89.34	2,464.20	-4,158.17	2,739.13	2,561.51	177.62	15.422			
11,500.00	4,470.38	9,355.32	4,437.00	182.43	128.64	-89.34	2,464.20	-4,158.17	2,825.03	2,650.68	174.35	16.203			
11,600.00	4,471.07	9,355.32	4,437.00	184.95	128.64	-89.34	2,464.20	-4,158.17	2,911.83	2,740.61	171.23	17.005			
11,700.00	4,471.76	9,355.32	4,437.00	187.46	128.64	-89.34	2,464.20	-4,158.17	2,999.46	2,831.21	168.25	17.827			
11,800.00	4,472.45	9,355.32	4,437.00	189.98	128.64	-89.34	2,464.20	-4,158.17	3,087.84	2,922.42	165.41	18.667			
11,900.00	4,473.15	9,355.32	4,437.00	192.50	128.64	-89.34	2,464.20	-4,158.17	3,176.90	3,014.20	162.70	19.526			
12,000.00	4,473.84	9,355.32	4,437.00	195.01	128.64	-89.34	2,464.20	-4,158.17	3,266.60	3,106.49	160.12	20.401			
12,100.00	4,474.53	9,355.32	4,437.00	197.53	128.64	-89.34	2,464.20	-4,158.17	3,356.89	3,199.24	157.65	21.293			
12,200.00	4,475.22	9,355.32	4,437.00	200.04	128.64	-89.34	2,464.20	-4,158.17	3,447.70	3,292.41	155.29	22.201			
12,300.00	4,475.91	9,355.32	4,437.00	202.56	128.64	-89.34	2,464.20	-4,158.17	3,539.02	3,385.97	153.04	23.124			
12,400.00	4,476.60	9,355.32	4,437.00	205.08	128.64	-89.34	2,464.20	-4,158.17	3,630.79	3,479.90	150.89	24.062			
12,500.00	4,477.30	9,355.32	4,437.00	207.59	128.64	-89.34	2,464.20	-4,158.17	3,722.98	3,574.15	148.84	25.014			
12,600.00	4,477.99	9,355.32	4,437.00	210.11	128.64	-89.34	2,464.20	-4,158.17	3,815.57	3,668.70	146.87	25.979			
12,700.00	4,478.68	9,355.32	4,437.00	212.63	128.64	-89.34	2,464.20	-4,158.17	3,908.52	3,763.53	144.99	26.957			
12,800.00	4,479.37	9,355.32	4,437.00	215.15	128.64	-89.34	2,464.20	-4,158.17	4,001.82	3,858.63	143.19	27.948			
12,900.00	4,480.06	9,355.32	4,437.00	217.66	128.64	-89.34	2,464.20	-4,158.17	4,095.43	3,953.96	141.46	28.950			
13,000.00	4,480.75	9,355.32	4,437.00	220.18	128.64	-89.34	2,464.20	-4,158.17	4,189.33	4,049.52	139.81	29.964			
13,100.00	4,481.45	9,355.32	4,437.00	222.70	128.64	-89.34	2,464.20	-4,158.17	4,283.51	4,145.29	138.23	30.989			
13,200.00	4,482.14	9,355.32	4,437.00	225.22	128.64	-89.34	2,464.20	-4,158.17	4,377.95	4,241.24	136.71	32.024			
13,300.00	4,482.83	9,355.32	4,437.00	227.74	128.64	-89.34	2,464.20	-4,158.17	4,472.63	4,337.38	135.25	33.070			
13,400.00	4,483.52	9,355.32	4,437.00	230.25	128.64	-89.34	2,464.20	-4,158.17	4,567.54	4,433.69	133.85	34.125			
13,500.00	4,484.21	9,355.32	4,437.00	232.77	128.64	-89.34	2,464.20	-4,158.17	4,662.66	4,530.16	132.50	35.189			
13,600.00	4,484.90	9,355.32	4,437.00	235.29	128.64	-89.34	2,464.20	-4,158.17	4,757.98	4,626.77	131.21	36.262			
13,700.00	4,485.60	9,355.32	4,437.00	237.81	128.64	-89.34	2,464.20	-4,158.17	4,853.49	4,723.52	129.97	37.344			
13,800.00	4,486.29	9,355.32	4,437.00	240.33	128.64	-89.34	2,464.20	-4,158.17	4,949.18	4,820.41	128.77	38.434			
13,900.00	4,486.98	9,355.32	4,437.00	242.85	128.64	-89.34	2,464.20	-4,158.17	5,045.03	4,917.41	127.62	39.532			
14,000.00	4,487.67	9,355.32	4,437.00	245.37	128.64	-89.34	2,464.20	-4,158.17	5,141.04	5,014.53	126.51	40.638			
14,100.00	4,488.36	9,355.32	4,437.00	247.89	128.64	-89.34	2,464.20	-4,158.17	5,237.20	5,111.76	125.44	41.750			



Lonestar Consulting, LLC
Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well # 602H - Slot 4
Project:	Nageezi Unit	TVD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Reference Site:	P09 2309	MD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	# 602H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	DJR
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Offset Design P09 2309 - # 601H - Original Drilling - APD													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,192.25	4,489.00	9,355.32	4,437.00	250.21	128.64	-89.34	2,464.20	-4,158.17	5,326.04	5,201.55	124.49	42.783	
14,192.58	4,489.00	9,355.32	4,437.00	250.22	128.64	-89.34	2,464.20	-4,158.17	5,326.35	5,200.83	125.52	42.434	



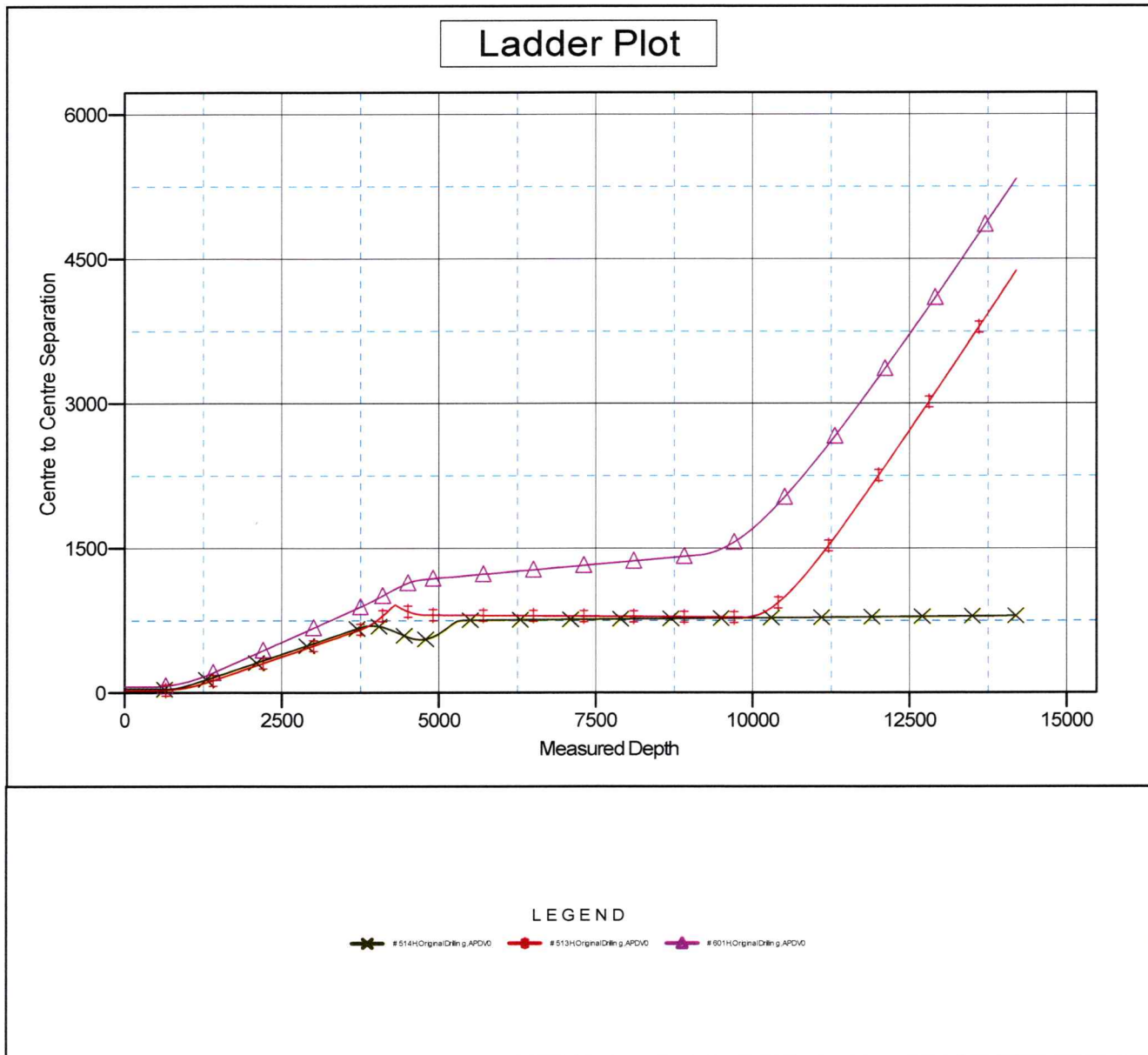
Lonestar Consulting, LLC
Anticollision Report



Company:	DJR Operating	Local Co-ordinate Reference:	Well # 602H - Slot 4
Project:	Nageezi Unit	TVD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Reference Site:	P09 2309	MD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	# 602H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	DJR
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Reference Depths are relative to GL 6805' & RKB 14' @ 6819.00usft
Offset Depths are relative to Offset Datum
Central Meridian is -107.83333333

Coordinates are relative to: # 602H - Slot 4
Coordinate System is US State Plane 1983, New Mexico Western Zone
Grid Convergence at Surface is: 0.03°





Lonestar Consulting, LLC
Anticollision Report

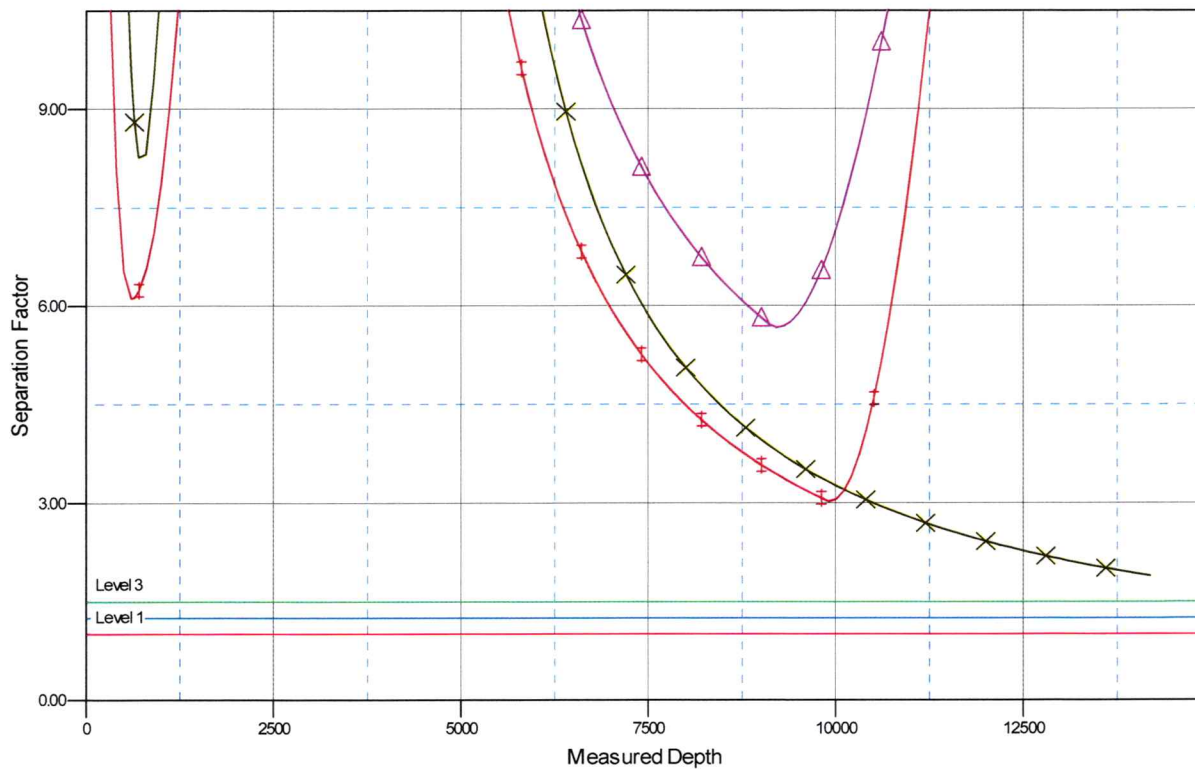


Company:	DJR Operating	Local Co-ordinate Reference:	Well # 602H - Slot 4
Project:	Nageezi Unit	TVD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Reference Site:	P09 2309	MD Reference:	GL 6805' & RKB 14' @ 6819.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	# 602H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	DJR
Reference Design:	APD	Offset TVD Reference:	Offset Datum

Reference Depths are relative to GL 6805' & RKB 14' @ 6819.00usft
Offset Depths are relative to Offset Datum
Central Meridian is -107.8333333

Coordinates are relative to: # 602H - Slot 4
Coordinate System is US State Plane 1983, New Mexico Western Zone
Grid Convergence at Surface is: 0.03°

Separation Factor Plot



LEGEND

✕ #514HOriginalDrillingAPDVO
 ✕ #513HOriginalDrillingAPDVO
 △ #601HOriginalDrillingAPDVO

Conditions of Approval

Project Title: DJR Nageezi Unit 601H_602H

Categorical Exclusion Number: DOI-BLM-NM-F010-2021-0007-CX

Legal Description: E SE Section 9 T23N R9W NMPM; San Juan County, NM

Case File/Project Number: NMNM132981X

Applicant: DJR Operating, LLC

Time Length of Categorical Exclusion: If the Nageezi Unit 601H_602H wells have not been spudded by May 13, 2021 the APD for the non-spudded well(s) will expire and the operator is to cease all operations related to preparing to drill the well.

Construction & Reclamation Notification: The operator or their contractor will contact the Bureau of Land Management Farmington Field Office (BLM-FFO), Surface and Environmental Protection Staff, (505) 564-7600 at least 48 hours prior to any construction or reclamation on this project

Weather: No construction or routine maintenance activities shall be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts in excess of 6 inches deep, the soil shall be deemed too wet.

Culverts: Silt traps/bell holes will be built at the upstream end of all culvert locations. The features must be maintained throughout their life span. Armoring may be required for culverts that experience negative erosional impacts. The approved minimum culvert diameter is 24 inches.

Grazing Permittee Notification: The operator will notify the grazing lease operator(s) at least ten business days prior to beginning any construction activity to ensure there will be no conflicts between construction activities and livestock grazing operations. The operator is in no way obligated to cease or delay construction unless directed by the AO. Any range improvement (fences, pipelines, ponds, etc.) disturbed by construction activities will be repaired immediately following construction and will be repaired to the condition the improvement was in prior to disturbance.

Air Quality: Operator must control fugitive dust and particulate matter through the use of freshwater spraying during construction and reclamation of the proposed action disturbance.

Groundwater Quality and Quantity: Operator shall only use freshwater and/or magnesium chloride for dust abatement purposes. Operator shall not discharge any water used in drilling of the wellbore to the surface of the location.

Cultural Resources: Archaeological monitoring and site protection barriers are required. See Cultural Resource Record of Review 2016(11)009F for stipulations and details.

Paleontology: Any paleontological resource discovered by the Operator, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant scientific values. The Holder will be

Approval Date: 12/15/2020

responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the Holder.

Wildlife: Migratory Bird Nest Survey: For any construction activities that exceed 4.0 acres of ground disturbance from 5/15 to 7/31 within the same lease, a migratory bird nest survey is required prior to any new ground disturbance. Nest surveys will be conducted within 48 hours of scheduled construction by BLM/FFO personnel or approved biologist. Any active nests will require a disturbance buffer to eliminate impacts to nesting birds.

Applicant will adhere to timing limitations and management measures if any new raptor nests are discovered within the project area. These timing limitations are species specific depending on the raptor that is discovered. The following timing limitations may apply:

Raptor Species of Nest Discovered	Timing Limitation
Bald Eagle	March 1-June 30
Burrowing Owl	April 1-August 15
Golden Eagle	February 1-June 30
Other Raptors	March 1- June 30

Disclaimers: BLM's approval of the Applications for Permit to Drill (APD) does not relieve the lessee and operator from obtaining any other authorizations that may be required by the State of New Mexico or other jurisdictional entities.

Copy of Plans: A complete copy of the APD package, including: Surface Use Plan of Operations, Plan of Development (if required), Conditions of Approval, Cultural Resource Record of Review, Cultural Resources Compliance Form (if required), and Project Stipulations (if required) shall be at the project area at all times and available to all persons.

Review of NEPA documents: It is the responsibility of the operator to follow all the design features, best management practices, and mitigation measures as contained in Environmental Assessment DOI-BLM-NM-F010-2016-0210-EA entitled "Encana Oil & Gas (USA) Inc.'s Nageezi Unit 513H-514H Oil and Natural Gas Well Project" Copies of the EA, Decision Record, and Finding of No Significant Impact may be obtained from the BLM FFO public room.

Best Management Practices (BMPs): Farmington Field Office established environmental Best Management Practices (BMPs) will be followed during construction and reclamation of well site pads, access roads, pipeline ties, facility placement or any other surface disturbing activity associated with this project. Bureau wide standard BMPs are found in the Gold Book, Fourth Edition-Revised 2007 and at http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/best_management_practices.html

Approval Date: 12/15/2020



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Farmington District Office
6251 College Blvd, Suite A
Farmington, New Mexico 87402



In Reply Refer To:
3162.3-1(NMF0110)

* DJR Operating, LLC
#602H Nageezi Unit
Lease: NMNM8005 Unit: NMNM132981A
SH: SE $\frac{1}{4}$ SE $\frac{1}{4}$ Section 9, T.23 N., R.9 W.
BH: SW $\frac{1}{4}$ NE $\frac{1}{4}$ Section 5, T.23 N., R.9 W.
San Juan County, New Mexico

***Above Data Required on Well Sign**

GENERAL REQUIREMENTS FOR OIL AND GAS OPERATIONS ON FEDERAL AND INDIAN LEASES

The following special requirements apply and are effective when **checked**:

- A. ☒ Note all surface/drilling conditions of approval attached.
- B. ☒ The required wait on cement (WOC) time will be a minimum of 500 psi compressive strength at 60 degrees. Blowout preventor (BOP) nipple-up operations may then be initiated
- C. ☐ Test the surface casing to a minimum of _____ psi for 30 minutes.
- D. ☐ Test all casing strings below the surface casing to .22 psi/ft. of casing string length or 1500 psi, whichever is greater, but not to exceed 70% of the minimum internal yield burst) for a minimum of 30 minutes.
- E. ☐ Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the Bureau of Land Management, Farmington District Office, Branch of Reservoir Management, 6251 College Blvd. Suite A, Farmington, New Mexico 87402. The effective date of the agreement must be **prior** to any sales.
- F. ☒ The use of co-flex hose is authorized contingent upon the following:
 - 1. From the BOP to the choke manifold: the co-flex hose must be hobbled on both ends and saddle to prevent whip.

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COLORADO, NEW MEXICO, UTAH, WYOMING

2. From the choke manifold to the discharge tank: the co-flex hoses must be as straight as practical, hobbled on both ends and anchored to prevent whip.
3. The co-flex hose pressure rating must be at least commensurate with approved BOPE.

I. GENERAL

- A. Full compliance with all applicable laws, regulations, and Onshore Orders, with the approved Permit to drill, and with the approved Surface Use and Operations Plan is required. Lessees and/or operators are fully accountable for the actions of their contractors and subcontractors. Failure to comply with these requirements and the filing of required reports will result in strict enforcement pursuant to 43 CFR 3163.1 or 3163.2.
- B. Each well shall have a well sign in legible condition from spud date to final abandonment. The sign should show the operator's name, lease serial number, or unit name, well number, location of the well, and whether lease is Tribal or Allotted, (See 43 CFR 3162.6(b)).
- C. A complete copy of the approved Application for Permit to Drill, along with any conditions of approval, shall be available to authorized personnel at the drill site whenever active drilling operations are under way.
- D. For Wildcat wells only, a drilling operations progress report is to be submitted, to the BLM-Field Office, weekly from the spud date until the well is completed and the Well Completion Report (Form 3160-4) is filed. The report should be on 8-1/2 x 11 inch paper, and each page should identify the well by; operator's name, well number, location and lease number.
- E. As soon as practical, notice is required of all blowouts, fires and accidents involving life-threatening injuries or loss of life. (See NTL-3A).
- F. Prior approval by the BLM-Authorized Office (Drilling and Production Section) is required for variance from the approved drilling program and before commencing plugging operations, plug back work casing repair work, corrective cementing operations, or suspending drilling operations indefinitely. Emergency approval may be obtained orally, but such approval is contingent upon filing of a notice of intent (on a Sundry Notice, Form 3160-5) within three business days (original and three copies of Federal leases and an original and four copies on Indian leases). **Any changes to the approved plan or any questions regarding drilling operations should be directed to BLM during regular business hours at 505-564-7600. Emergency program changes after hours should be directed to at Virgil Lucero at 505-793-1836.**
- G. **The Inspection and Enforcement Section (I&E), phone number (505-564-7750) is to be notified at least 24 hours in advance of BOP test, spudding, cementing, or plugging operations so that a BLM representative may witness the operations.**
- H. Unless drilling operations are commenced within two years, approval of the Application for Permit to Drill will expire. A written request for a two years extension may be granted if submitted prior to expiration.
- I. From the time drilling operations are initiated and until drilling operations are completed, a member of the drilling crew or the tool pusher shall maintain rig surveillance at all time, unless the well is secured with blowout preventers or cement plugs.

- J. If for any reason, drilling operations are suspended for more than 90 days, a written notice must be provided to this office outlining your plans for this well.

II. REPORTING REQUIREMENTS

A. For reporting purposes, all well Sundry notices, well completion and other well actions shall be referenced by the appropriate lease, communitization agreement and/or unit agreement numbers.

B. The following reports shall be filed with the BLM-Authorized Officer within 30 days after the work is completed.

1. Original and three copies on Federal and an Original and five copies on Indian leases of Sundry Notice (Form 3150-5), giving complete information concerning.

- a. Setting of each string of casing. Show size and depth of hole, grade and weight of casing, depth set, depth of any and all cementing tools that are used, amount (in cubic feet) and types of cement used, whether cement circulated to surface and all cement tops in the casing annulus, casing test method and results, and the date work was done. Show spud date on first report submitted.
- b. Intervals tested, perforated (include; size, number and location of perforations), acidized, or fractured; and results obtained. Provide date work was done on well completion report and completion sundry notice.
- c. Subsequent Report of Abandonment, show the manner in which the well was plugged, including depths where casing was cut and pulled, intervals (by depths) where cement plugs were replaced, and dates of the operations.

2. Well Completion Report (Form 3160-4) will be submitted with 30 days after well has been completed.

- a. Initial Bottom Hole Pressure (BHP) for the producing formations. Show the BHP on the completion report. The pressure may be: 1) measured with a bottom hole bomb, or; 2) calculated based on shut in surface pressures (minimum seven day buildup) and fluid level shot.

3. Submit a cement evaluation log, if cement is not circulated to surface.

III. DRILLER'S LOG

The following shall be entered in the daily driller's log: 1) Blowout preventer pressures tests, including test pressures and results. 2) Blowout preventer tests for proper functioning, 3) Blowout prevention drills conducted, 4) Casing run, including size, grade, weight, and depth set, 5) How pipe was cemented, including amount of cement, type, whether cement circulated to surface, location of cementing tools, etc., 6) Waiting on cement time for each casing string, 7) Casing pressure tests after cementing, including test pressure and results and 8) Estimated amounts of oil and gas recovered and/or produced during drill stem test.

IV. GAS FLARING

Gas produced from this well may not be vented or flared beyond an initial, authorized test period of * Days or 50 MMCF following its (completion)(recompletion), whichever first occurs, without the prior, written approval of the authorized officer. Should gas be vented or flared without approval beyond the test period authorized above, you may be directed to shut-in the well until the gas can be captured or approval to continue venting or flaring as uneconomic is granted. You shall be required to compensate the lessor for the portion of the gas vented or flared without approval which is determined to have been avoidably lost.

*30 days, unless a longer test period is specifically approved by the authorized officer. The 30-day period will commence upon the first gas to surface.

V. SAFETY

- A. All rig heating stoves are to be of the explosion-proof type.
- B. Rig safety lines are to be installed.
- C. Hard hats and other Personal Protective Equipment (PPE) must be utilized.

VI. CHANGE OF PLANS OR ABANDONMENT

- A. Any changes of plans required in order to mitigate unanticipated conditions encountered during drilling operations, will require approval as set forth in Section 1.F.
- B. If the well is dry, it is to be plugged in accordance with 43 CFR 3162.3-4, approval of the proposed plugging program is required as set forth in Section 1.F. The report should show the total depth reached, the reason for plugging, and the proposed intervals, by depths, where cement plugs are to be placed, type of plugging mud, etc. A Subsequent Report of Abandonment is required as set forth in Section II.B.1c.
- C. Unless a well has been properly cased and cemented, or properly plugged, the drilling rig must not be moved from the drill site without prior approval from the BLM-Authorized Officer.

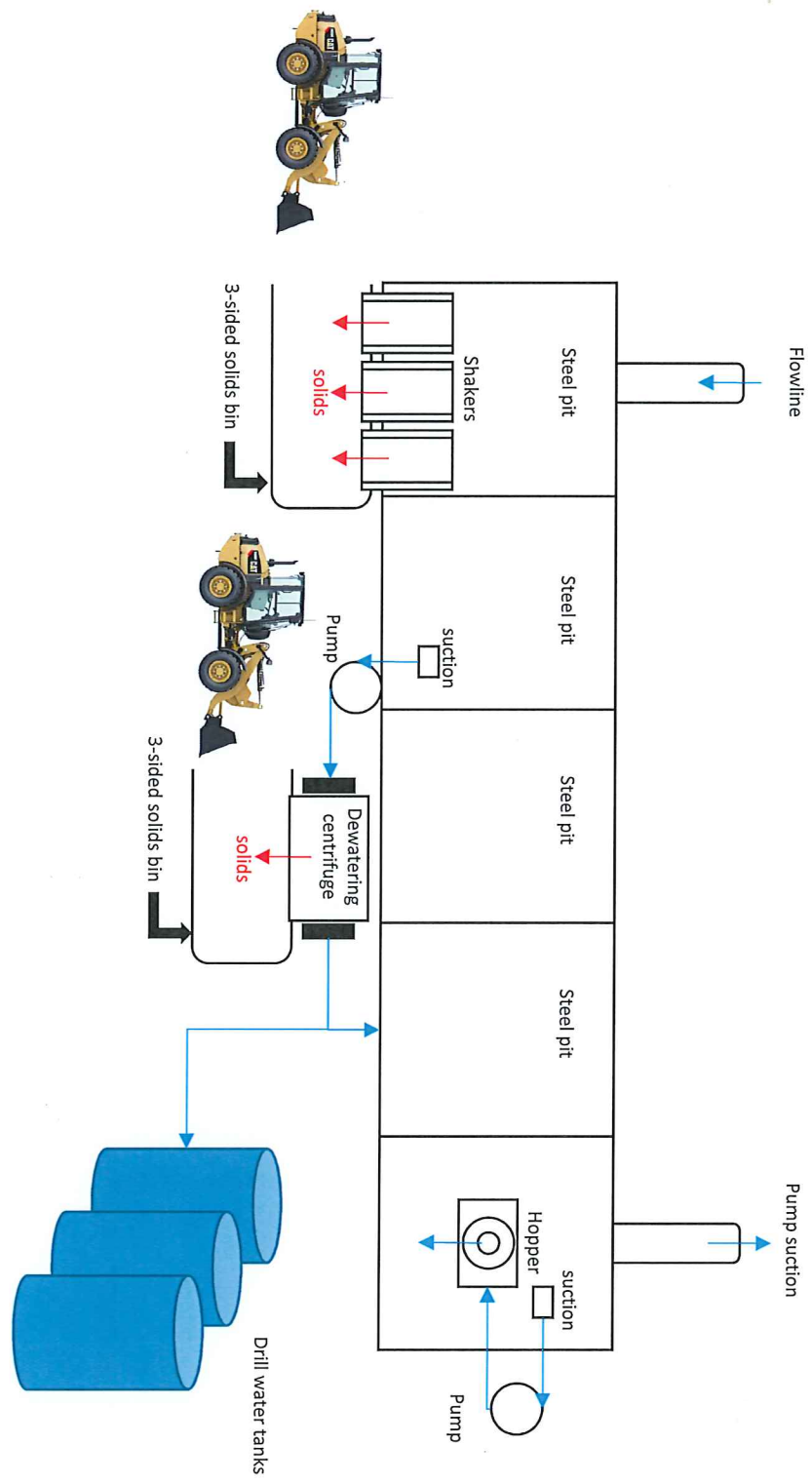
VII. PHONE NUMBERS

- A. For BOPE tests, cementing, and plugging operations the phone number is 505-564-7750 and must be called 24 hours in advance in order that a BLM representative may witness the operations.
- B. Emergency program changes after hours contact:

Virgil Lucero (505) 793-1836
Joe Killins (505) 564-7736
John Hoffman (505) 564-7742



Closed Loop Mud System



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 13330

COMMENTS

Operator:			OGRID:	Action Number:	Action Type:
DJR OPERATING, LLC 1 Road 3263 Aztec, NM87410			371838	13330	FORM 3160-3
Created By	Comment			Comment Date	
kpickford	KP GEO Review 12/30/2020			12/30/2020	

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Santa Fe, NM 87505

CONDITIONS

Action 13330

CONDITIONS OF APPROVAL

Operator:			OGRID:	Action Number:	Action Type:			
DJR OPERATING, LLC			371838	13330	FORM 3160-3			
1 Road 3263								
Aztec, NM87410								
OCD Reviewer	Condition							
kpickford	Notify OCD 24 hours prior to casing & cement							
kpickford	Will require a File As Drilled C-102 and a Directional Survey with the C-104							
kpickford	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							