

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.
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.
2. Name of Operator		8. Lease Name and Well No.
3a. Address		9. API Well No. 30-025-52662
3b. Phone No. (include area code)		10. Field and Pool, or Exploratory
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface At proposed prod. zone		11. Sec., T. R. M. or Blk. and Survey or Area
14. Distance in miles and direction from nearest town or post office*		12. County or Parish
		13. State
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
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	Name (Printed/Typed)	Date
Title		
Approved by (Signature)	Name (Printed/Typed)	Date
Title		
Office		

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

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

(Continued on page 2)

*(Instructions on page 2)



Approval Date: 03/19/2024

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 Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number 30-025-52662		2 Pool Code 44500		3 Pool Name MALJAMAR; YESO, WEST	
4 Property Code 335617		5 Property Name MILLER 14 FEDERAL COM			6 Well Number 10H
7 OGRID NO. 328947		8 Operator Name SPUR ENERGY PARTNERS LLC.			9 Elevation 4107

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
E	13	17S	32E		2210	NORTH	785	WEST	LEA

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
E	14	17S	32E		2605	NORTH	50	WEST	LEA

12 Dedicated Acres 320	13 Joint or Infill	14 Consolidation Code	15 Order No.
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No allowable will be assigned to this completion until all interest have been consolidated or a non-standard unit has been approved by the division.

16 <u>GEODETIC DATA</u> NAD 83 GRID - NM EAST <u>SURFACE LOCATION (SL)</u> N: 668311.0 - E: 727895.5 LAT: 32.8357389° N LONG: 103.7259410° W <u>BOTTOM HOLE (BH)</u> N: 667893.4 - E: 721883.1 LAT: 32.8346847° N LONG: 103.7455227° W <u>KICK OFF POINT (KOP)</u> 2562' FNL & 858' FWL - SEC 13 N: 667959.0 - E: 727970.5 LAT: 32.8347703° N LONG: 103.7257033° W <u>FIRST TAKE POINT (FTP)</u> 2605' FNL & 100' FWL - SEC 14 N: 667912.2 - E: 727013.2 LAT: 32.8346567° N LONG: 103.7288208° W <u>LAST TAKE POINT (LTP)</u> 2605' FNL & 100' FWL - SEC 14 N: 667893.4 - E: 721933.1 LAT: 32.8346839° N LONG: 103.7453600° W <u>CORNER DATA</u> NAD 83 GRID - NM EAST A: FOUND BRASS CAP "1913" N: 665220.0 - E: 721849.6 B: FOUND BRASS CAP "1913" N: 667859.2 - E: 721833.3 C: FOUND BRASS CAP "1913" N: 670497.8 - E: 721816.9 D: FOUND BRASS CAP "1913" N: 670496.2 - E: 724451.5 E: FOUND BRASS CAP "1913" N: 670517.3 - E: 727096.3 F: FOUND BRASS CAP "1913" N: 670527.8 - E: 729734.2 G: FOUND BRASS CAP "1913" N: 670539.6 - E: 732379.8 H: FOUND BRASS CAP "1913" N: 667898.7 - E: 732396.3 I: FOUND BRASS CAP "1913" N: 665259.6 - E: 732412.5 J: FOUND 3/8" BOLT N: 665248.4 - E: 729771.0 K: FOUND BRASS CAP "1913" N: 665238.4 - E: 727129.7 L: FOUND BRASS CAP "1913" N: 665229.1 - E: 724489.8 M: FOUND BRASS CAP "1913" N: 667878.3 - E: 727113.4	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>Sarah Chapman</i> 07/18/2023 Signature Date SARAH CHAPMAN Printed Name SCHAPMAN@SPURENERGY.COM E-mail Address 18 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. 01/20/2023 Date of Survey Signature and Seal of Professional Surveyor DALE E. BELL NEW MEXICO 14400 PROFESSIONAL SURVEYOR 07/06/2023 14400 Certificate Number REV: ADD KOP - 07/05/2023 LS23010059R
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State of New Mexico
Energy, Minerals and Natural Resources DepartmentSubmit Electronically
Via E-permittingOil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505**NATURAL GAS MANAGEMENT PLAN**

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

Section 1 – Plan Description
Effective May 25, 2021**I. Operator:** SPUR ENERGY PARTNERS LLC **OGRID:** 328947 **Date:** 07 / 06 / 2023**II. Type:** ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: _____

III. Well(s): Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
MILLER 14 FEDERAL 10H	30-025-	E-13-17S-32E	2210' FNL 785' FWL	370 BBL/D	466 MCF/D	1481 BBL/D
MILLER 14 FEDERAL 20H	30-025-	E-13-17S-32E	2210' FNL 805' FWL	370 BBL/D	466 MCF/D	1481 BBL/D
MILLER 14 FEDERAL 70H	30-025-	E-13-17S-32E	2210' FNL 825' FWL	325 BBL/D	385 MCF/D	1300 MCF/D

IV. Central Delivery Point Name: MILLER 14 FEDERAL TANK BATTERY [See 19.15.27.9(D)(1) NMAC]**V. Anticipated Schedule:** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
MILLER 14 FEDERAL 10H	30-025-	01/13/2025	01/22/2025	02/19/2025	03/11/2025	03/26/2025
MILLER 14 FEDERAL 20H	30-025-	01/22/2025	01/31/2025	02/19/2025	03/11/2025	03/26/2025
MILLER 14 FEDERAL 70H	30-025-	01/31/2025	02/10/2025	02/19/2025	03/11/2025	03/26/2025

VI. Separation Equipment: ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.**VII. Operational Practices:** ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.**VIII. Best Management Practices:** ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

Section 2 – Enhanced Plan

EFFECTIVE APRIL 1, 2022

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☒ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

IX. Anticipated Natural Gas Production:

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

X. Natural Gas Gathering System (NGGS):

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

XI. Map. ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

XII. Line Capacity. The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

XIII. Line Pressure. Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

XIV. Confidentiality: ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

Section 3 - Certifications

Effective May 25, 2021

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system.

If Operator checks this box, Operator will select one of the following:

Well Shut-In. ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

Venting and Flaring Plan. ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- (a) power generation on lease;
- (b) power generation for grid;
- (c) compression on lease;
- (d) liquids removal on lease;
- (e) reinjection for underground storage;
- (f) reinjection for temporary storage;
- (g) reinjection for enhanced oil recovery;
- (h) fuel cell production; and
- (i) other alternative beneficial uses approved by the division.

Section 4 - Notices

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature:	<i>Sarah Chapman</i>
Printed Name:	SARAH CHAPMAN
Title:	REGULATORY DIRECTOR
E-mail Address:	SCHAPMAN@SPUREENERGY.COM
Date:	JULY 6, 2023
Phone:	832-930-8613
OIL CONSERVATION DIVISION (Only applicable when submitted as a standalone form)	
Approved By:	
Title:	
Approval Date:	
Conditions of Approval:	

Spur Energy Partners LLC – Miller 14 Federal Com 10H

1. Geologic Formations

TVD of Target	5,820'
MD at TD	11,660'

Formation	Depth	Lithology	Expected Fluids
Quaternary	0'	Dolomite, other: Caliche	Useable Water
Rustler	1105'	Dolomite, Shale, Anhydrite	Other: Brackish Water
Top Salt	1275'	Anhydrite	Other: Salt
Tansill	2345'	Sandstone, Dolomite	None
Yates	2450'	Dolomite, Limestone, Shale, Siltstone	None
Seven Rivers	2805'	Dolomite, Limestone	Natural Gas, Oil
Queen	3425'	Anhydrite, Dolomite, Sandstone	Natural Gas, Oil
Grayburg	3880'	Anhydrite	Natural Gas, Oil
San Andres	4170'	Dolomite	Natural Gas, Oil
Glorieta	5725'	Dolomite, Siltstone	Natural Gas, Oil
Paddock	5815'	Dolomite, Limestone	Natural Gas, Oil
Blinberry	6210'	Dolomite, Limestone	Natural Gas, Oil
Tubb	7160'	Dolomite, Limestone	Natural Gas, Oil

*H₂S, water flows, loss of circulation, abnormal pressures, etc.

2. Casing Program

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Casing Formation Set Interval	Hole Size (in)	Casing Interval		Csg. Size (in)	Weight (lbs)	Grade	Conn.	SF	SF Burst	Body SF Tension	Joint SF Tension
		From (ft)	To (ft)					Collapse			
Rustler	17.5	0	1175	13.375	54.5	J-55	BTC	1.125	1.2	1.4	1.4
Seven Rivers	12.25	0	3000	9.625	36	J-55	BTC	1.125	1.2	1.4	1.4
N/A	8.75	0	6250	7	32	L-80	BK-HT	1.125	1.2	1.4	1.4
Yeso	8.75	6250	11660	5.5	20	L-80	BK-HT	1.125	1.2	1.4	1.4
SF Values will meet or Exceed											

Spur Energy Partners LLC – Miller 14 Federal Com 10H

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

3. Cementing Program

Casing String	Top (ft)	Bottom (ft)	% Excess
Surface Tail	0	1175	165%
Intermediate (Lead)	0	1175	100%
Intermediate (Tail)	1175	3000	100%
Production (Lead)	0	5250	100%
Production (Tail)	5250	11660	25%

Casing String	# Sks	Wt. (lb/gal)	Yld (ft3/sack)	H2O (gal/sk)	500# Comp. Strength (hours)	Slurry Description
Surface Tail	1143	13.2	1.87	9.92	6:59	Clas C Premium Plus Cement
Intermediate (Lead)	178	12	2.4	13.48	8:12	Clas C Premium Plus Cement
Intermediate (Tail)	622	13.2	1.87	9.92	6:59	Clas C Premium Plus Cement
Production (Lead)	1025	11.4	2.42	15.29	N/A	Clas C Premium Plus Cement
Production (Tail)	1222	13.2	1.56	9.81	N/A	Clas C Premium Plus Cement

Spur Energy Partners LLC – Miller 14 Federal Com 10H

4. Pressure Control Equipment

Spur requests a variance to use a flex line from the BOP to the choke manifold. Documentation will be attached in the APD and be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no bends).

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
12.25" Hole	13-5/8"	5M	Annular	✓	70% of working pressure
		5M	Blind Ram	✓	250 psi / 3000 psi
			Pipe Ram	✓	
			Double Ram		
			Other*		
8.75" Hole	13-5/8"	5M	Annular	✓	70% of working pressure
		5M	Blind Ram	✓	250 psi / 3000 psi
			Pipe Ram	✓	
			Double Ram		
			Other*		

Spur Energy Partners LLC will be utilizing a 5M BOP

Condition	Specify what type and where?
BH Pressure at deepest TVD	2775 psi
Abnormal Temperature	No
BH Temperature at deepest TVD	128°F

*Specify if additional ram is utilized.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.	
Y	Are anchors required by manufacturer?	

Spur Energy Partners LLC – Miller 14 Federal Com 10H

	A conventional wellhead system will be employed. The wellhead and connection to the BOPE will meet all API 6A requirements. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. See attached schematics.
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5. BOP Break Testing Request

Spur Energy Partners LLC requests permission to adjust the BOP break testing requirements as per the verbal agreement reached over the phone between SPUR/BLM on September 7, 2020. A separate sundry will be sent prior to spud that reflects the pad-based break testing plan.

BOP break test under the following conditions:

- After a full BOP test is conducted
- When skidding to drill the production section, where the surface casing point is shallower than the 3 Bone Spring or 10,000 TVD.
- When skidding to drill a production section that does not penetrate the 3rd Bone Spring or deeper.

If the kill line is broken prior to skid, four tests will be performed.

- 1) The void between the wellhead and the spool (this consists of two tests)
- 2) The spool between the kill lines and the choke manifold (this consists of two tests)

If the kill line is not broken prior to skid, two tests will be performed.

- 1) The void between the wellhead and the pipe rams

6. Mud Program

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times. The following is a general list of products: Barite, Bentonite, Gypsum, Lime, Soda Ash, Caustic Soda, Nut Plug, Cedar Fiber, Cotton Seed Hulls, Drilling Paper, Salt Water Clay, CACL2. Spur will use a closed mud system.

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From (ft)	To (ft)				
0	1175	Water-Based Mud	8.6-8.9	32-36	N/C
1175	3000	Brine	10.0-10.5	32-36	N/C
3000	11660	Brine	10.0-10.5	32-36	N/C

What will be used to monitor the loss or gain of fluid?	PVT/PASON/Visual Monitoring
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Spur Energy Partners LLC – Miller 14 Federal Com 10H**7. Logging and Testing Procedures**

Logging, Coring and Testing.		
Yes	Will run GR from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.	
No	Logs are planned based on well control or offset log information.	
No	Drill stem test? If yes, explain	
No	Coring? If yes, explain	
Additional logs planned		Interval
No	Resistivity	
No	Density	
No	CBL	
Yes	Mud log	ICP - TD
No	PEX	

8. Drilling Conditions

Pump high viscosity sweeps as needed for hole cleaning. The mud system will be monitored visually/manually as well as with an electronic PVT. The necessary mud products for additional weight and fluid loss control will be on location at all times. Appropriately weighted mud will be used to isolate potential gas, oil, and water zones until such time as casing can be cemented into place for zonal isolation.

Hydrogen Sulfide (H ₂ S) monitors will be installed prior to drilling out the surface shoe. If H ₂ S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
N	H ₂ S is present
Y	H ₂ S Plan attached

Total estimated cuttings volume: 1129.6 bbls.

Spur Energy Partners LLC – Miller 14 Federal Com 10H**9. Other facets of operation**

	Yes/No
Will more than one drilling rig be used for drilling operations? If yes, describe. Spur Energy Partners LLC. requests the option to contract a Surface Rig to drill, set surface/intermediate casing and cement for this well. If the timing between rigs is such that Spur Energy Partners LLC. would not be able to preset surface/intermediate the Primary Rig will MIRU and drill the well in its entirety per the APD. Please see the attached document for information on the spudder rig.	Yes

Attachments

- ☒ Directional Plan
☒ H2S Contingency Plan
☒ Akita 57 Attachments
☒ BOP Schematics
☒ Transcend Spudder Rig Attachments

10. Company Personnel

Name	Title	Office Phone	Mobile Phone
Christopher Hollis	Drilling Manager	832-930-8629	713-380-7754
Johnny Nabors	Senior Vice President Operations	832-930-8502	281-904-8811



SPUR ENERGY PARTNERS, LLC

**LEA COUNTY, NM (NAD 83 - NME)
MILLER 14 FEDERAL COM
10H**

**Wellbore #1
PERMIT**

Anticollision Report

29 June, 2023



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 10H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Reference	PERMIT
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	MD + Stations Interval 50.00usft
Depth Range:	Unlimited
Results Limited by:	Maximum separation factor of 55.00
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic
Casing Method:	Not applied

Survey Tool Program		Date	06/28/23		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	11,659.94	PERMIT (Wellbore #1)	MWD+IGRF	OWSG MWD + IGRF or WMM	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
MILLER 14 FEDERAL COM						
20H - Wellbore #1 - PERMIT	355.08	355.02	19.87	17.77	9.433	CC
20H - Wellbore #1 - PERMIT	400.00	399.81	20.02	17.60	8.268	ES
20H - Wellbore #1 - PERMIT	11,659.94	11,720.34	957.76	582.83	2.554	SF
70H - Wellbore #1 - PERMIT	342.09	341.98	39.90	37.88	19.795	CC
70H - Wellbore #1 - PERMIT	450.00	449.65	40.10	37.33	14.473	ES
70H - Wellbore #1 - PERMIT	11,659.94	12,107.18	778.56	515.67	2.962	SF
OFFSET: MALMAR UNIT TR-2 #5 - Wellbore #1 - Wellbore	300.00	294.00	262.00	251.38	24.670	CC
OFFSET: MALMAR UNIT TR-2 #5 - Wellbore #1 - Wellbore	450.00	443.93	265.76	248.63	15.515	ES
OFFSET: MALMAR UNIT TR-2 #5 - Wellbore #1 - Wellbore	4,400.00	4,381.77	569.25	380.87	3.022	SF

Offset Design MILLER 14 FEDERAL COM - 20H - Wellbore #1 - PERMIT													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
							+N/-S (usft)	+E/-W (usft)						
150.00	150.00	150.00	150.00	0.32	0.32	89.712	0.10	19.90	19.90	19.26	0.65	30.841		
200.00	200.00	200.00	200.00	0.50	0.50	89.712	0.10	19.90	19.90	18.90	1.00	19.826		
250.00	250.00	250.00	250.00	0.68	0.68	89.712	0.10	19.90	19.90	18.54	1.36	14.609		
300.00	300.00	300.00	300.00	0.86	0.86	89.712	0.10	19.90	19.90	18.18	1.72	11.565		
350.00	350.00	349.95	349.95	1.03	1.04	-80.737	0.53	19.94	19.87	17.80	2.07	9.596		
355.08	355.07	355.02	355.01	1.05	1.06	-81.266	0.63	19.95	19.87	17.77	2.11	9.433	CC	
400.00	399.98	399.81	399.79	1.20	1.22	-88.130	1.83	20.06	20.02	17.60	2.42	8.268	ES	
450.00	449.93	449.50	449.43	1.38	1.40	-99.791	3.98	20.27	20.97	18.20	2.77	7.562		
500.00	499.84	498.92	498.76	1.55	1.58	-113.592	6.97	20.55	23.59	20.45	3.13	7.527		
525.46	525.23	523.96	523.73	1.64	1.67	-120.461	8.81	20.73	25.78	22.45	3.33	7.752		
550.00	549.69	548.00	547.69	1.72	1.76	-126.449	10.78	20.92	28.42	24.92	3.51	8.105		
600.00	599.54	596.80	596.27	1.90	1.94	-136.048	15.39	21.36	35.11	31.24	3.87	9.073		
650.00	649.38	645.77	644.96	2.09	2.13	-142.810	20.66	21.86	43.08	38.85	4.23	10.178		
700.00	699.23	694.91	693.80	2.27	2.32	-147.463	25.98	22.37	51.50	46.92	4.58	11.237		
750.00	749.07	744.05	742.65	2.46	2.51	-150.800	31.30	22.87	60.15	55.22	4.93	12.193		
800.00	798.92	793.20	791.50	2.65	2.70	-153.293	36.63	23.38	68.96	63.68	5.28	13.053		
850.00	848.76	842.34	840.35	2.84	2.89	-155.221	41.95	23.89	77.86	72.23	5.63	13.821		
900.00	898.61	891.48	889.20	3.03	3.09	-156.753	47.27	24.39	86.83	80.85	5.99	14.508		

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 10H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Offset Design MILLER 14 FEDERAL COM - 20H - Wellbore #1 - PERMIT												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF												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)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
950.00	948.45	940.62	938.05	3.22	3.28	-157.997	52.60	24.90	95.85	89.51	6.34	15.126	
1,000.00	998.30	989.76	986.90	3.41	3.48	-159.028	57.92	25.41	104.91	98.22	6.69	15.683	
1,050.00	1,048.14	1,038.90	1,035.75	3.60	3.68	-159.894	63.25	25.92	113.99	106.95	7.04	16.186	
1,100.00	1,097.99	1,088.04	1,084.60	3.79	3.87	-160.633	68.57	26.42	123.09	115.70	7.40	16.644	
1,150.00	1,147.83	1,137.18	1,133.45	3.98	4.07	-161.270	73.89	26.93	132.22	124.47	7.75	17.060	
1,200.00	1,197.68	1,186.32	1,182.30	4.18	4.27	-161.825	79.22	27.44	141.35	133.25	8.10	17.441	
1,250.00	1,247.52	1,235.47	1,231.15	4.37	4.47	-162.312	84.54	27.95	150.50	142.04	8.46	17.791	
1,300.00	1,297.37	1,284.61	1,280.00	4.56	4.67	-162.743	89.86	28.45	159.65	150.84	8.81	18.113	
1,350.00	1,347.22	1,333.75	1,328.84	4.75	4.86	-163.128	95.19	28.96	168.82	159.65	9.17	18.409	
1,400.00	1,397.06	1,382.89	1,377.69	4.95	5.06	-163.473	100.51	29.47	177.99	168.46	9.53	18.685	
1,450.00	1,446.91	1,432.03	1,426.54	5.14	5.26	-163.785	105.84	29.97	187.16	177.28	9.88	18.940	
1,500.00	1,496.75	1,481.17	1,475.39	5.33	5.46	-164.067	111.16	30.48	196.34	186.11	10.24	19.177	
1,550.00	1,546.60	1,530.31	1,524.24	5.53	5.66	-164.324	116.48	30.99	205.53	194.93	10.59	19.399	
1,600.00	1,596.44	1,579.45	1,573.09	5.72	5.86	-164.559	121.81	31.50	214.72	203.77	10.95	19.606	
1,650.00	1,646.29	1,628.59	1,621.94	5.91	6.06	-164.774	127.13	32.00	223.91	212.60	11.31	19.800	
1,700.00	1,696.13	1,677.74	1,670.79	6.11	6.26	-164.973	132.46	32.51	233.11	221.44	11.67	19.982	
1,750.00	1,745.98	1,726.88	1,719.64	6.30	6.46	-165.157	137.78	33.02	242.30	230.28	12.02	20.154	
1,800.00	1,795.82	1,776.02	1,768.49	6.49	6.66	-165.327	143.10	33.52	251.50	239.12	12.38	20.315	
1,850.00	1,845.67	1,825.16	1,817.34	6.69	6.85	-165.485	148.43	34.03	260.70	247.97	12.74	20.467	
1,900.00	1,895.51	1,874.30	1,866.19	6.88	7.05	-165.633	153.75	34.54	269.91	256.81	13.10	20.611	
1,950.00	1,945.36	1,923.44	1,915.04	7.08	7.25	-165.770	159.07	35.05	279.11	265.66	13.45	20.748	
2,000.00	1,995.20	1,972.58	1,963.89	7.27	7.45	-165.899	164.40	35.55	288.32	274.51	13.81	20.877	
2,050.00	2,045.05	2,021.72	2,012.73	7.46	7.65	-166.020	169.72	36.06	297.53	283.36	14.17	20.999	
2,100.00	2,094.89	2,070.86	2,061.58	7.66	7.85	-166.134	175.05	36.57	306.73	292.21	14.53	21.116	
2,150.00	2,144.74	2,120.01	2,110.43	7.85	8.05	-166.241	180.37	37.08	315.94	301.06	14.88	21.227	
2,200.00	2,194.58	2,169.15	2,159.28	8.04	8.25	-166.342	185.69	37.58	325.16	309.91	15.24	21.333	
2,250.00	2,244.43	2,218.29	2,208.13	8.24	8.45	-166.437	191.02	38.09	334.37	318.77	15.60	21.433	
2,300.00	2,294.27	2,267.43	2,256.98	8.43	8.65	-166.527	196.34	38.60	343.58	327.62	15.96	21.530	
2,350.00	2,344.12	2,316.57	2,305.83	8.63	8.85	-166.613	201.67	39.10	352.79	336.48	16.32	21.622	
2,400.00	2,393.96	2,365.71	2,354.68	8.82	9.05	-166.694	206.99	39.61	362.01	345.33	16.67	21.710	
2,450.00	2,443.81	2,414.85	2,403.53	9.02	9.25	-166.771	212.31	40.12	371.22	354.19	17.03	21.794	
2,500.00	2,493.66	2,463.99	2,452.38	9.21	9.45	-166.845	217.64	40.63	380.44	363.05	17.39	21.875	
2,550.00	2,543.50	2,513.13	2,501.23	9.40	9.65	-166.915	222.96	41.13	389.65	371.90	17.75	21.952	
2,600.00	2,593.35	2,562.28	2,550.08	9.60	9.85	-166.982	228.28	41.64	398.87	380.76	18.11	22.027	
2,650.00	2,643.19	2,611.42	2,598.93	9.79	10.05	-167.045	233.61	42.15	408.09	389.62	18.47	22.098	
2,700.00	2,693.04	2,660.56	2,647.77	9.99	10.25	-167.106	238.93	42.65	417.31	398.48	18.83	22.167	
2,750.00	2,742.88	2,709.70	2,696.62	10.18	10.45	-167.165	244.26	43.16	426.52	407.34	19.18	22.233	
2,800.00	2,792.73	2,758.84	2,745.47	10.38	10.65	-167.220	249.58	43.67	435.74	416.20	19.54	22.297	
2,850.00	2,842.57	2,807.98	2,794.32	10.57	10.85	-167.274	254.90	44.18	444.96	425.06	19.90	22.358	
2,900.00	2,892.42	2,857.12	2,843.17	10.76	11.05	-167.325	260.23	44.68	454.18	433.92	20.26	22.417	
2,950.00	2,942.26	2,906.26	2,892.02	10.96	11.25	-167.374	265.55	45.19	463.40	442.78	20.62	22.475	
3,000.00	2,992.11	2,955.40	2,940.87	11.15	11.45	-167.422	270.87	45.70	472.62	451.64	20.98	22.530	
3,050.00	3,041.95	3,004.55	2,989.72	11.35	11.65	-167.467	276.20	46.21	481.84	460.50	21.34	22.583	
3,100.00	3,091.80	3,053.69	3,038.57	11.54	11.85	-167.511	281.52	46.71	491.06	469.37	21.70	22.635	
3,150.00	3,141.64	3,102.83	3,087.42	11.74	12.05	-167.553	286.85	47.22	500.28	478.23	22.05	22.685	
3,200.00	3,191.49	3,151.97	3,136.27	11.93	12.25	-167.594	292.17	47.73	509.50	487.09	22.41	22.733	
3,250.00	3,241.33	3,201.11	3,185.12	12.12	12.46	-167.633	297.49	48.23	518.72	495.95	22.77	22.779	
3,300.00	3,291.18	3,250.25	3,233.97	12.32	12.66	-167.671	302.82	48.74	527.95	504.81	23.13	22.825	
3,350.00	3,341.02	3,299.39	3,282.81	12.51	12.86	-167.708	308.14	49.25	537.17	513.68	23.49	22.869	
3,400.00	3,390.87	3,348.53	3,331.66	12.71	13.06	-167.743	313.47	49.76	546.39	522.54	23.85	22.911	
3,450.00	3,440.71	3,397.67	3,380.51	12.90	13.26	-167.777	318.79	50.26	555.61	531.40	24.21	22.952	
3,500.00	3,490.56	3,446.82	3,429.36	13.10	13.46	-167.810	324.11	50.77	564.83	540.27	24.57	22.992	

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 10H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Offset Design MILLER 14 FEDERAL COM - 20H - Wellbore #1 - PERMIT												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF												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)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
3,550.00	3,540.41	3,495.96	3,478.21	13.29	13.66	-167.842	329.44	51.28	574.06	549.13	24.92	23.031	
3,600.00	3,590.25	3,545.10	3,527.06	13.49	13.86	-167.873	334.76	51.78	583.28	557.99	25.28	23.069	
3,650.00	3,640.10	3,594.24	3,575.91	13.68	14.06	-167.903	340.08	52.29	592.50	566.86	25.64	23.106	
3,700.00	3,689.94	3,643.38	3,624.76	13.87	14.26	-167.932	345.41	52.80	601.72	575.72	26.00	23.141	
3,750.00	3,739.79	3,692.52	3,673.61	14.07	14.46	-167.961	350.73	53.31	610.95	584.59	26.36	23.176	
3,800.00	3,789.63	3,741.66	3,722.46	14.26	14.66	-167.988	356.06	53.81	620.17	593.45	26.72	23.210	
3,850.00	3,839.48	3,790.80	3,771.31	14.46	14.86	-168.015	361.38	54.32	629.39	602.31	27.08	23.243	
3,900.00	3,889.32	3,839.94	3,820.16	14.65	15.06	-168.040	366.70	54.83	638.62	611.18	27.44	23.275	
3,950.00	3,939.17	3,889.09	3,869.01	14.85	15.26	-168.066	372.03	55.34	647.84	620.04	27.80	23.306	
4,000.00	3,989.01	3,938.23	3,917.85	15.04	15.46	-168.090	377.35	55.84	657.06	628.91	28.16	23.336	
4,050.00	4,038.86	3,987.37	3,966.70	15.24	15.66	-168.114	382.67	56.35	666.29	637.77	28.52	23.366	
4,100.00	4,088.70	4,036.51	4,015.55	15.43	15.86	-168.137	388.00	56.86	675.51	646.64	28.87	23.395	
4,150.00	4,138.55	4,086.65	4,064.40	15.63	16.06	-168.159	393.32	57.36	684.74	655.50	29.23	23.423	
4,200.00	4,188.39	4,134.79	4,113.25	15.82	16.26	-168.181	398.65	57.87	693.96	664.37	29.59	23.450	
4,250.00	4,238.24	4,183.93	4,162.10	16.01	16.46	-168.202	403.97	58.38	703.18	673.23	29.95	23.477	
4,300.00	4,288.08	4,233.07	4,210.95	16.21	16.66	-168.223	409.29	58.89	712.41	682.10	30.31	23.503	
4,350.00	4,337.93	4,282.21	4,259.80	16.40	16.86	-168.243	414.62	59.39	721.63	690.96	30.67	23.529	
4,400.00	4,387.77	4,331.36	4,308.65	16.60	17.06	-168.263	419.94	59.90	730.86	699.83	31.03	23.554	
4,450.00	4,437.62	4,380.50	4,357.50	16.79	17.26	-168.282	425.27	60.41	740.08	708.69	31.39	23.578	
4,500.00	4,487.46	4,429.64	4,406.35	16.99	17.46	-168.301	430.59	60.92	749.31	717.56	31.75	23.602	
4,550.00	4,537.31	4,478.78	4,455.20	17.18	17.67	-168.319	435.91	61.42	758.53	726.42	32.11	23.625	
4,600.00	4,587.16	4,527.92	4,504.05	17.38	17.87	-168.337	441.24	61.93	767.76	735.29	32.47	23.648	
4,650.00	4,637.00	4,577.06	4,552.90	17.57	18.07	-168.354	446.56	62.44	776.98	744.16	32.83	23.670	
4,700.00	4,686.85	4,626.20	4,601.74	17.77	18.27	-168.371	451.88	62.94	786.21	753.02	33.18	23.692	
4,750.00	4,736.69	4,675.34	4,650.59	17.96	18.47	-168.388	457.21	63.45	795.43	761.89	33.54	23.713	
4,800.00	4,786.54	4,724.49	4,699.44	18.15	18.67	-168.404	462.53	63.96	804.66	770.75	33.90	23.734	
4,850.00	4,836.38	4,773.63	4,748.29	18.35	18.87	-168.420	467.86	64.47	813.88	779.62	34.26	23.754	
4,900.00	4,886.23	4,822.77	4,797.14	18.54	19.07	-168.435	473.18	64.97	823.11	788.48	34.62	23.774	
4,950.00	4,936.07	4,871.91	4,845.99	18.74	19.27	-168.450	478.50	65.48	832.33	797.35	34.98	23.794	
4,990.28	4,976.23	4,911.50	4,885.35	18.89	19.43	-168.462	482.79	65.89	839.76	804.49	35.27	23.809	
5,000.00	4,985.92	4,921.05	4,894.84	18.93	19.47	-175.929	483.83	65.99	841.55	806.21	35.34	23.812	
5,050.00	5,035.76	4,970.18	4,943.68	19.12	19.67	147.285	489.15	66.49	850.69	814.98	35.71	23.825	
5,100.00	5,085.49	5,019.18	4,992.39	19.30	19.87	125.141	494.46	67.00	859.68	823.62	36.07	23.837	
5,150.00	5,134.97	5,068.56	5,041.48	19.48	20.07	113.749	499.81	67.46	868.55	832.13	36.42	23.849	
5,200.00	5,184.07	5,120.76	5,093.36	19.65	20.28	107.343	505.33	66.01	877.19	840.41	36.78	23.852	
5,250.00	5,232.64	5,173.51	5,145.65	19.81	20.49	103.331	510.70	61.67	885.51	848.38	37.13	23.851	
5,300.00	5,280.57	5,226.83	5,198.19	19.97	20.69	100.620	515.91	54.34	893.49	856.02	37.47	23.843	
5,350.00	5,327.71	5,280.71	5,250.82	20.13	20.88	98.686	520.92	43.96	901.10	863.28	37.82	23.825	
5,400.00	5,373.94	5,335.16	5,303.35	20.28	21.08	97.251	525.72	30.47	908.32	870.15	38.17	23.794	
5,450.00	5,419.13	5,390.18	5,355.57	20.43	21.27	96.156	530.27	13.81	915.12	876.58	38.54	23.746	
5,500.00	5,463.16	5,445.76	5,407.30	20.59	21.46	95.304	534.56	-6.05	921.46	882.54	38.92	23.677	
5,550.00	5,505.91	5,501.88	5,458.29	20.74	21.66	94.630	538.55	-29.13	927.34	888.01	39.33	23.580	
5,600.00	5,547.25	5,558.54	5,508.34	20.90	21.85	94.093	542.23	-55.42	932.71	892.94	39.78	23.448	
5,650.00	5,587.08	5,615.71	5,557.19	21.08	22.05	93.664	545.57	-84.92	937.57	897.29	40.28	23.277	
5,700.00	5,625.28	5,673.37	5,604.61	21.27	22.27	93.320	548.55	-117.56	941.88	901.04	40.85	23.060	
5,750.00	5,661.76	5,731.48	5,650.35	21.50	22.51	93.047	551.14	-153.30	945.64	904.14	41.49	22.790	
5,800.00	5,696.41	5,790.01	5,694.16	21.78	22.78	92.831	553.32	-192.03	948.81	906.57	42.24	22.463	
5,850.00	5,729.14	5,848.92	5,735.81	22.12	23.10	92.665	555.08	-233.65	951.39	908.29	43.10	22.075	
5,900.00	5,759.85	5,908.16	5,775.05	22.54	23.49	92.540	556.39	-277.99	953.35	909.26	44.09	21.621	
5,950.00	5,788.46	5,967.68	5,811.66	23.03	23.96	92.452	557.25	-324.91	954.70	909.47	45.23	21.107	
6,000.00	5,814.91	6,027.44	5,845.43	23.59	24.53	92.395	557.65	-374.19	955.42	908.90	46.52	20.536	
6,007.28	5,818.57	6,036.16	5,850.10	23.68	24.62	92.389	557.67	-381.55	955.47	908.75	46.72	20.449	

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 10H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Offset Design MILLER 14 FEDERAL COM - 20H - Wellbore #1 - PERMIT												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Warning							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
6,050.00	5,839.93	6,084.78	5,874.98	24.24	25.17	92.428	557.60	-423.32	955.57	907.62	47.95	19.930	
6,100.00	5,864.93	6,134.78	5,899.98	24.92	25.81	92.428	557.44	-466.62	955.57	906.21	49.36	19.359	
6,150.00	5,889.93	6,184.78	5,924.98	25.67	26.49	92.428	557.28	-509.92	955.57	904.69	50.88	18.782	
6,200.00	5,914.93	6,234.78	5,949.98	26.44	27.22	92.428	557.12	-553.23	955.57	903.13	52.44	18.222	
6,207.28	5,918.57	6,242.06	5,953.62	26.55	27.33	92.428	557.10	-559.53	955.57	902.90	52.67	18.142	
6,250.00	5,938.53	6,285.76	5,975.32	27.27	28.00	92.511	556.96	-597.46	955.63	901.52	54.11	17.662	
6,300.00	5,958.24	6,339.77	5,998.91	28.18	28.92	92.651	556.78	-646.03	955.74	899.75	55.99	17.071	
6,350.00	5,973.88	6,394.02	6,017.89	29.17	29.93	92.770	556.60	-696.82	955.83	897.81	58.02	16.474	
6,400.00	5,985.32	6,448.46	6,032.02	30.22	31.02	92.866	556.41	-749.38	955.91	895.71	60.20	15.878	
6,450.00	5,992.47	6,503.06	6,041.13	31.32	32.19	92.938	556.21	-803.19	955.97	893.47	62.50	15.294	
6,500.00	5,995.29	6,557.78	6,045.07	32.47	33.41	92.986	556.01	-857.74	956.01	891.12	64.90	14.731	
6,526.82	5,995.00	6,587.16	6,045.04	33.10	34.08	93.001	555.91	-887.12	956.03	889.82	66.21	14.440	
6,550.00	5,994.21	6,610.46	6,044.36	33.65	34.63	93.008	555.82	-910.41	956.03	888.71	67.32	14.201	
6,600.00	5,992.51	6,660.46	6,042.90	34.86	35.82	93.023	555.64	-960.39	956.05	886.31	69.74	13.708	
6,650.00	5,990.80	6,710.46	6,041.44	36.10	37.02	93.037	555.46	-1,010.37	956.06	883.84	72.22	13.238	
6,700.00	5,989.10	6,760.46	6,039.98	37.36	38.27	93.052	555.27	-1,060.34	956.08	881.34	74.74	12.792	
6,750.00	5,987.39	6,810.45	6,038.51	38.65	39.52	93.066	555.09	-1,110.32	956.09	878.78	77.31	12.366	
6,800.00	5,985.69	6,860.45	6,037.05	39.95	40.81	93.081	554.91	-1,160.30	956.10	876.18	79.92	11.963	
6,850.00	5,983.98	6,910.45	6,035.59	41.28	42.11	93.095	554.73	-1,210.28	956.12	873.54	82.57	11.579	
6,900.00	5,982.28	6,960.45	6,034.13	42.62	43.44	93.110	554.54	-1,260.26	956.13	870.88	85.25	11.215	
6,950.00	5,980.57	7,010.45	6,032.67	43.98	44.78	93.125	554.36	-1,310.23	956.15	868.18	87.97	10.869	
7,000.00	5,978.87	7,060.45	6,031.21	45.35	46.14	93.139	554.18	-1,360.21	956.16	865.45	90.71	10.541	
7,050.00	5,977.16	7,110.45	6,029.75	46.74	47.50	93.154	554.00	-1,410.19	956.17	862.70	93.48	10.229	
7,100.00	5,975.46	7,160.45	6,028.28	48.13	48.89	93.168	553.82	-1,460.17	956.19	859.92	96.27	9.933	
7,150.00	5,973.75	7,210.45	6,026.82	49.54	50.28	93.183	553.63	-1,510.14	956.20	857.12	99.08	9.651	
7,200.00	5,972.05	7,260.45	6,025.36	50.96	51.68	93.197	553.45	-1,560.12	956.22	854.31	101.91	9.383	
7,250.00	5,970.35	7,310.45	6,023.90	52.39	53.09	93.212	553.27	-1,610.10	956.23	851.47	104.76	9.128	
7,300.00	5,968.64	7,360.45	6,022.44	53.82	54.52	93.226	553.09	-1,660.08	956.25	848.62	107.63	8.885	
7,350.00	5,966.94	7,410.45	6,020.98	55.27	55.95	93.241	552.91	-1,710.05	956.26	845.75	110.51	8.653	
7,400.00	5,965.23	7,460.45	6,019.52	56.71	57.39	93.256	552.72	-1,760.03	956.28	842.87	113.40	8.432	
7,450.00	5,963.53	7,510.45	6,018.05	58.17	58.83	93.270	552.54	-1,810.01	956.29	839.98	116.31	8.222	
7,500.00	5,961.82	7,560.45	6,016.59	59.63	60.29	93.285	552.36	-1,859.99	956.31	837.07	119.23	8.020	
7,550.00	5,960.12	7,610.45	6,015.13	61.10	61.74	93.299	552.18	-1,909.97	956.32	834.15	122.17	7.828	
7,600.00	5,958.41	7,660.44	6,013.67	62.57	63.21	93.314	551.99	-1,959.94	956.34	831.23	125.11	7.644	
7,650.00	5,956.71	7,710.44	6,012.21	64.06	64.68	93.328	551.81	-2,009.92	956.35	828.29	128.06	7.468	
7,700.00	5,955.00	7,760.44	6,010.75	65.54	66.15	93.343	551.63	-2,059.90	956.37	825.35	131.02	7.299	
7,750.00	5,953.30	7,810.44	6,009.29	67.03	67.63	93.357	551.45	-2,109.88	956.38	822.39	133.99	7.138	
7,800.00	5,951.59	7,860.44	6,007.83	68.52	69.12	93.372	551.27	-2,159.85	956.40	819.43	136.97	6.983	
7,850.00	5,949.89	7,910.44	6,006.36	70.01	70.60	93.387	551.08	-2,209.83	956.41	816.46	139.95	6.834	
7,900.00	5,948.19	7,960.44	6,004.90	71.51	72.09	93.401	550.90	-2,259.81	956.43	813.48	142.94	6.691	
7,950.00	5,946.48	8,010.44	6,003.44	73.01	73.59	93.416	550.72	-2,309.79	956.44	810.50	145.94	6.554	
8,000.00	5,944.78	8,060.44	6,001.98	74.52	75.09	93.430	550.54	-2,359.76	956.46	807.51	148.95	6.422	
8,050.00	5,943.07	8,110.44	6,000.52	76.03	76.59	93.445	550.35	-2,409.74	956.47	804.52	151.96	6.294	
8,100.00	5,941.37	8,160.44	5,999.06	77.54	78.09	93.459	550.17	-2,459.72	956.49	801.52	154.97	6.172	
8,150.00	5,939.66	8,210.44	5,997.60	79.05	79.60	93.474	549.99	-2,509.70	956.51	798.51	157.99	6.054	
8,200.00	5,937.96	8,260.44	5,996.13	80.57	81.11	93.488	549.81	-2,559.68	956.52	795.51	161.01	5.941	
8,250.00	5,936.25	8,310.44	5,994.67	82.09	82.62	93.503	549.63	-2,609.65	956.54	792.49	164.04	5.831	
8,300.00	5,934.55	8,360.44	5,993.21	83.61	84.14	93.517	549.44	-2,659.63	956.55	789.48	167.08	5.725	
8,350.00	5,932.84	8,410.44	5,991.75	85.13	85.66	93.532	549.26	-2,709.61	956.57	786.45	170.12	5.623	
8,400.00	5,931.14	8,460.44	5,990.29	86.65	87.18	93.547	549.08	-2,759.59	956.58	783.43	173.16	5.524	
8,450.00	5,929.43	8,510.43	5,988.83	88.18	88.70	93.561	548.90	-2,809.56	956.60	780.40	176.20	5.429	
8,500.00	5,927.73	8,560.43	5,987.37	89.71	90.22	93.576	548.71	-2,859.54	956.62	777.37	179.25	5.337	

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 10H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Offset Design MILLER 14 FEDERAL COM - 20H - Wellbore #1 - PERMIT												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance								Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
8,550.00	5,926.03	8,610.43	5,985.90	91.24	91.74	93.590	548.53	-2,909.52	956.63	774.33	182.30	5.248	
8,600.00	5,924.32	8,660.43	5,984.44	92.77	93.27	93.605	548.35	-2,959.50	956.65	771.29	185.36	5.161	
8,650.00	5,922.62	8,710.43	5,982.98	94.30	94.80	93.619	548.17	-3,009.48	956.67	768.25	188.41	5.077	
8,700.00	5,920.91	8,760.43	5,981.52	95.83	96.33	93.634	547.99	-3,059.45	956.68	765.21	191.47	4.996	
8,750.00	5,919.21	8,810.43	5,980.06	97.37	97.86	93.648	547.80	-3,109.43	956.70	762.16	194.54	4.918	
8,800.00	5,917.50	8,860.43	5,978.60	98.91	99.40	93.663	547.62	-3,159.41	956.71	759.11	197.60	4.842	
8,850.00	5,915.80	8,910.43	5,977.14	100.45	100.93	93.677	547.44	-3,209.39	956.73	756.06	200.67	4.768	
8,900.00	5,914.09	8,960.43	5,975.68	101.98	102.47	93.692	547.26	-3,259.36	956.75	753.01	203.74	4.696	
8,950.00	5,912.39	9,010.43	5,974.21	103.53	104.00	93.707	547.08	-3,309.34	956.76	749.95	206.81	4.626	
9,000.00	5,910.68	9,060.43	5,972.75	105.07	105.54	93.721	546.89	-3,359.32	956.78	746.90	209.88	4.559	
9,050.00	5,908.98	9,110.43	5,971.29	106.61	107.08	93.736	546.71	-3,409.30	956.80	743.84	212.96	4.493	
9,100.00	5,907.27	9,160.43	5,969.83	108.15	108.62	93.750	546.53	-3,459.27	956.81	740.78	216.04	4.429	
9,150.00	5,905.57	9,210.43	5,968.37	109.70	110.16	93.765	546.35	-3,509.25	956.83	737.71	219.12	4.367	
9,200.00	5,903.87	9,260.43	5,966.91	111.24	111.70	93.779	546.16	-3,559.23	956.85	734.65	222.20	4.306	
9,250.00	5,902.16	9,310.43	5,965.45	112.79	113.25	93.794	545.98	-3,609.21	956.87	731.58	225.28	4.247	
9,300.00	5,900.46	9,360.42	5,963.98	114.34	114.79	93.808	545.80	-3,659.19	956.88	728.52	228.37	4.190	
9,350.00	5,898.75	9,410.42	5,962.52	115.88	116.34	93.823	545.62	-3,709.16	956.90	725.45	231.45	4.134	
9,400.00	5,897.05	9,460.42	5,961.06	117.43	117.88	93.837	545.44	-3,759.14	956.92	722.38	234.54	4.080	
9,450.00	5,895.34	9,510.42	5,959.60	118.98	119.43	93.852	545.25	-3,809.12	956.93	719.31	237.63	4.027	
9,500.00	5,893.64	9,560.42	5,958.14	120.53	120.98	93.866	545.07	-3,859.10	956.95	716.23	240.72	3.975	
9,550.00	5,891.93	9,610.42	5,956.68	122.08	122.53	93.881	544.89	-3,909.07	956.97	713.16	243.81	3.925	
9,600.00	5,890.23	9,660.42	5,955.22	123.64	124.08	93.895	544.71	-3,959.05	956.99	710.09	246.90	3.876	
9,650.00	5,888.52	9,710.42	5,953.75	125.19	125.63	93.910	544.52	-4,009.03	957.00	707.01	250.00	3.828	
9,700.00	5,886.82	9,760.42	5,952.29	126.74	127.18	93.925	544.34	-4,059.01	957.02	703.93	253.09	3.781	
9,750.00	5,885.11	9,810.42	5,950.83	128.29	128.73	93.939	544.16	-4,108.99	957.04	700.85	256.19	3.736	
9,800.00	5,883.41	9,860.42	5,949.37	129.85	130.28	93.954	543.98	-4,158.96	957.06	697.77	259.28	3.691	
9,850.00	5,881.71	9,910.42	5,947.91	131.40	131.83	93.968	543.80	-4,208.94	957.08	694.69	262.38	3.648	
9,900.00	5,880.00	9,960.42	5,946.45	132.96	133.38	93.983	543.61	-4,258.92	957.09	691.61	265.48	3.605	
9,950.00	5,878.30	10,010.42	5,944.99	134.51	134.94	93.997	543.43	-4,308.90	957.11	688.53	268.58	3.564	
10,000.00	5,876.59	10,060.42	5,943.53	136.07	136.49	94.012	543.25	-4,358.87	957.13	685.45	271.68	3.523	
10,050.00	5,874.89	10,110.42	5,942.06	137.63	138.05	94.026	543.07	-4,408.85	957.15	682.37	274.78	3.483	
10,100.00	5,873.18	10,160.42	5,940.60	139.18	139.60	94.041	542.89	-4,458.83	957.16	679.28	277.88	3.444	
10,150.00	5,871.48	10,210.41	5,939.14	140.74	141.16	94.055	542.70	-4,508.81	957.18	676.20	280.99	3.407	
10,200.00	5,869.77	10,260.41	5,937.68	142.30	142.71	94.070	542.52	-4,558.78	957.20	673.11	284.09	3.369	
10,250.00	5,868.07	10,310.41	5,936.22	143.86	144.27	94.084	542.34	-4,608.76	957.22	670.03	287.19	3.333	
10,300.00	5,866.36	10,360.41	5,934.76	145.41	145.83	94.099	542.16	-4,658.74	957.24	666.94	290.30	3.297	
10,350.00	5,864.66	10,410.41	5,933.30	146.97	147.38	94.113	541.97	-4,708.72	957.26	663.85	293.40	3.263	
10,400.00	5,862.95	10,460.41	5,931.83	148.53	148.94	94.128	541.79	-4,758.70	957.27	660.76	296.51	3.228	
10,450.00	5,861.25	10,510.41	5,930.37	150.09	150.50	94.142	541.61	-4,808.67	957.29	657.68	299.62	3.195	
10,500.00	5,859.55	10,560.41	5,928.91	151.65	152.06	94.157	541.43	-4,858.65	957.31	654.59	302.72	3.162	
10,550.00	5,857.84	10,610.41	5,927.45	153.21	153.62	94.171	541.25	-4,908.63	957.33	651.50	305.83	3.130	
10,600.00	5,856.14	10,660.41	5,925.99	154.77	155.18	94.186	541.06	-4,958.61	957.35	648.41	308.94	3.099	
10,650.00	5,854.43	10,710.41	5,924.53	156.34	156.74	94.201	540.88	-5,008.58	957.37	645.32	312.05	3.068	
10,700.00	5,852.73	10,760.41	5,923.07	157.90	158.30	94.215	540.70	-5,058.56	957.39	642.23	315.16	3.038	
10,750.00	5,851.02	10,810.41	5,921.60	159.46	159.86	94.230	540.52	-5,108.54	957.41	639.14	318.27	3.008	
10,800.00	5,849.32	10,860.41	5,920.14	161.02	161.42	94.244	540.33	-5,158.52	957.42	636.04	321.38	2.979	
10,850.00	5,847.61	10,910.41	5,918.68	162.58	162.98	94.259	540.15	-5,208.49	957.44	632.95	324.49	2.951	
10,900.00	5,845.91	10,960.41	5,917.22	164.15	164.54	94.273	539.97	-5,258.47	957.46	629.86	327.60	2.923	
10,950.00	5,844.20	11,010.40	5,915.76	165.71	166.10	94.288	539.79	-5,308.45	957.48	626.77	330.71	2.895	
11,000.00	5,842.50	11,060.40	5,914.30	167.27	167.67	94.302	539.61	-5,358.43	957.50	623.67	333.83	2.868	
11,050.00	5,840.79	11,110.40	5,912.84	168.84	169.23	94.317	539.42	-5,408.41	957.52	620.58	336.94	2.842	
11,100.00	5,839.09	11,160.40	5,911.38	170.40	170.79	94.331	539.24	-5,458.38	957.54	617.49	340.05	2.816	

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 10H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Offset Design MILLER 14 FEDERAL COM - 20H - Wellbore #1 - PERMIT												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF												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)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
11,150.00	5,837.39	11,210.40	5,909.91	171.96	172.35	94.346	539.06	-5,508.36	957.56	614.39	343.17	2.790	
11,200.00	5,835.68	11,260.40	5,908.45	173.53	173.92	94.360	538.88	-5,558.34	957.58	611.30	346.28	2.765	
11,250.00	5,833.98	11,310.40	5,906.99	175.09	175.48	94.375	538.69	-5,608.32	957.60	608.21	349.39	2.741	
11,300.00	5,832.27	11,360.40	5,905.53	176.66	177.04	94.389	538.51	-5,658.29	957.62	605.11	352.51	2.717	
11,350.00	5,830.57	11,410.40	5,904.07	178.22	178.61	94.404	538.33	-5,708.27	957.64	602.02	355.62	2.693	
11,400.00	5,828.86	11,460.40	5,902.61	179.79	180.17	94.418	538.15	-5,758.25	957.66	598.92	358.74	2.670	
11,450.00	5,827.16	11,510.40	5,901.15	181.35	181.74	94.433	537.97	-5,808.23	957.68	595.83	361.85	2.647	
11,500.00	5,825.45	11,560.40	5,899.68	182.92	183.30	94.447	537.78	-5,858.21	957.70	592.73	364.97	2.624	
11,550.00	5,823.75	11,610.40	5,898.22	184.48	184.87	94.462	537.60	-5,908.18	957.72	589.63	368.08	2.602	
11,600.00	5,822.04	11,660.40	5,896.76	186.05	186.43	94.476	537.42	-5,958.16	957.74	586.54	371.20	2.580	
11,609.91	5,821.71	11,670.31	5,896.47	186.36	186.74	94.479	537.38	-5,968.07	957.74	585.92	371.82	2.576	
11,650.00	5,820.34	11,710.40	5,895.30	187.61	188.00	94.491	537.24	-6,008.14	957.76	583.44	374.31	2.559	
11,659.94	5,820.00	11,720.34	5,895.01	187.93	188.31	94.494	537.20	-6,018.07	957.76	582.83	374.93	2.554 SF	

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 10H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Offset Design MILLER 14 FEDERAL COM - 70H - Wellbore #1 - PERMIT												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF												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)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
200.00	200.00	200.00	200.00	0.50	0.50	89.713	0.20	39.90	39.90	38.90	1.00	39.753	
250.00	250.00	250.00	250.00	0.68	0.68	89.713	0.20	39.90	39.90	38.54	1.36	29.291	
300.00	300.00	300.00	300.00	0.86	0.86	89.713	0.20	39.90	39.90	38.18	1.72	23.189	
342.09	342.09	341.98	341.98	1.00	1.01	-79.124	0.50	39.95	39.90	37.88	2.02	19.795 CC	
350.00	350.00	349.86	349.86	1.03	1.04	-79.481	0.63	39.97	39.90	37.83	2.07	19.267	
400.00	399.98	399.76	399.75	1.20	1.22	-82.878	1.72	40.16	39.94	37.52	2.42	16.500	
450.00	449.93	449.65	449.62	1.38	1.40	-87.554	2.85	40.36	40.10	37.33	2.77	14.473 ES	
500.00	499.84	499.48	499.44	1.55	1.58	-93.376	3.98	40.55	40.56	37.44	3.12	12.998	
525.46	525.23	524.83	524.78	1.64	1.67	-96.731	4.56	40.65	41.00	37.69	3.30	12.413	
550.00	549.69	549.24	549.18	1.72	1.75	-100.040	5.12	40.74	41.57	38.09	3.48	11.944	
600.00	599.54	598.99	598.92	1.90	1.93	-106.463	6.25	40.94	43.14	39.30	3.84	11.231	
650.00	649.38	648.73	648.65	2.09	2.11	-112.370	7.38	41.13	45.21	41.01	4.20	10.754	
700.00	699.23	698.48	698.39	2.27	2.29	-117.711	8.51	41.33	47.73	43.16	4.57	10.453	
750.00	749.07	748.23	748.12	2.46	2.47	-122.484	9.64	41.52	50.62	45.69	4.93	10.271	
800.00	798.92	797.98	797.86	2.65	2.65	-126.720	10.77	41.72	53.82	48.53	5.29	10.177	
850.00	848.76	847.73	847.59	2.84	2.83	-130.464	11.90	41.91	57.28	51.64	5.65	10.143	
900.00	898.61	897.47	897.33	3.03	3.01	-133.771	13.03	42.10	60.96	54.96	6.01	10.150	
950.00	948.45	947.22	947.06	3.22	3.19	-136.695	14.16	42.30	64.82	58.46	6.36	10.185	
1,000.00	998.30	996.97	996.80	3.41	3.37	-139.286	15.30	42.49	68.83	62.11	6.72	10.240	
1,050.00	1,048.14	1,046.72	1,046.53	3.60	3.54	-141.588	16.43	42.69	72.96	65.88	7.08	10.307	
1,100.00	1,097.99	1,096.46	1,096.26	3.79	3.72	-143.641	17.56	42.88	77.20	69.77	7.44	10.383	
1,150.00	1,147.83	1,146.21	1,146.00	3.98	3.90	-145.479	18.69	43.08	81.53	73.73	7.79	10.462	
1,200.00	1,197.68	1,195.96	1,195.73	4.18	4.08	-147.131	19.82	43.27	85.93	77.78	8.15	10.545	
1,250.00	1,247.52	1,245.71	1,245.47	4.37	4.26	-148.621	20.95	43.46	90.39	81.89	8.51	10.627	
1,300.00	1,297.37	1,295.46	1,295.20	4.56	4.44	-149.971	22.08	43.66	94.91	86.05	8.86	10.710	
1,350.00	1,347.22	1,345.20	1,344.94	4.75	4.62	-151.197	23.21	43.85	99.48	90.26	9.22	10.791	
1,400.00	1,397.06	1,394.95	1,394.67	4.95	4.80	-152.315	24.34	44.05	104.09	94.52	9.58	10.870	
1,450.00	1,446.91	1,444.70	1,444.41	5.14	4.98	-153.338	25.48	44.24	108.74	98.80	9.93	10.947	
1,500.00	1,496.75	1,494.45	1,494.14	5.33	5.16	-154.277	26.61	44.44	113.41	103.12	10.29	11.022	
1,550.00	1,546.60	1,544.19	1,543.87	5.53	5.34	-155.142	27.74	44.63	118.12	107.47	10.65	11.094	
1,600.00	1,596.44	1,593.94	1,593.61	5.72	5.51	-155.940	28.87	44.82	122.85	111.84	11.00	11.164	
1,650.00	1,646.29	1,643.69	1,643.34	5.91	5.69	-156.680	30.00	45.02	127.60	116.24	11.36	11.231	
1,700.00	1,696.13	1,693.44	1,693.08	6.11	5.87	-157.366	31.13	45.21	132.37	120.65	11.72	11.296	
1,750.00	1,745.98	1,743.19	1,742.81	6.30	6.05	-158.004	32.26	45.41	137.16	125.08	12.08	11.358	
1,800.00	1,795.82	1,792.93	1,792.55	6.49	6.23	-158.599	33.39	45.60	141.96	129.53	12.43	11.418	
1,850.00	1,845.67	1,842.68	1,842.28	6.69	6.41	-159.155	34.52	45.80	146.78	133.99	12.79	11.476	
1,900.00	1,895.51	1,892.43	1,892.02	6.88	6.59	-159.676	35.66	45.99	151.61	138.46	13.15	11.531	
1,950.00	1,945.36	1,942.18	1,941.75	7.08	6.77	-160.164	36.79	46.18	156.45	142.95	13.51	11.584	
2,000.00	1,995.20	1,991.92	1,991.49	7.27	6.95	-160.624	37.92	46.38	161.31	147.44	13.86	11.635	
2,050.00	2,045.05	2,041.67	2,041.22	7.46	7.13	-161.056	39.05	46.57	166.17	151.95	14.22	11.684	
2,100.00	2,094.89	2,091.42	2,090.95	7.66	7.31	-161.464	40.18	46.77	171.04	156.46	14.58	11.732	
2,150.00	2,144.74	2,141.17	2,140.69	7.85	7.49	-161.849	41.31	46.96	175.92	160.98	14.94	11.777	
2,200.00	2,194.58	2,190.91	2,190.42	8.04	7.67	-162.213	42.44	47.16	180.81	165.51	15.30	11.821	
2,250.00	2,244.43	2,240.66	2,240.16	8.24	7.84	-162.559	43.57	47.35	185.70	170.05	15.65	11.864	
2,300.00	2,294.27	2,290.41	2,289.89	8.43	8.02	-162.886	44.70	47.54	190.60	174.59	16.01	11.904	
2,350.00	2,344.12	2,340.16	2,339.63	8.63	8.20	-163.197	45.84	47.74	195.51	179.14	16.37	11.944	
2,400.00	2,393.96	2,389.91	2,389.36	8.82	8.38	-163.493	46.97	47.93	200.42	183.69	16.73	11.982	
2,450.00	2,443.81	2,439.65	2,439.10	9.02	8.56	-163.775	48.10	48.13	205.34	188.25	17.09	12.018	
2,500.00	2,493.66	2,489.40	2,488.83	9.21	8.74	-164.043	49.23	48.32	210.26	192.82	17.44	12.054	
2,550.00	2,543.50	2,539.15	2,538.56	9.40	8.92	-164.300	50.36	48.52	215.19	197.38	17.80	12.088	
2,600.00	2,593.35	2,588.90	2,588.30	9.60	9.10	-164.544	51.49	48.71	220.12	201.96	18.16	12.121	
2,650.00	2,643.19	2,638.64	2,638.03	9.79	9.28	-164.778	52.62	48.90	225.05	206.53	18.52	12.153	

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 10H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Offset Design MILLER 14 FEDERAL COM - 70H - Wellbore #1 - PERMIT												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Warning							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Tooface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
2,700.00	2,693.04	2,688.39	2,687.77	9.99	9.46	-165.002	53.75	49.10	229.99	211.11	18.88	12.183	
2,750.00	2,742.88	2,738.14	2,737.50	10.18	9.64	-165.217	54.88	49.29	234.93	215.69	19.24	12.213	
2,800.00	2,792.73	2,787.89	2,787.24	10.38	9.82	-165.423	56.02	49.49	239.87	220.28	19.59	12.242	
2,850.00	2,842.57	2,837.64	2,836.97	10.57	10.00	-165.620	57.15	49.68	244.82	224.87	19.95	12.270	
2,900.00	2,892.42	2,887.38	2,886.71	10.76	10.17	-165.810	58.28	49.88	249.77	229.46	20.31	12.297	
2,950.00	2,942.26	2,937.13	2,936.44	10.96	10.35	-165.992	59.41	50.07	254.72	234.05	20.67	12.324	
3,000.00	2,992.11	2,986.88	2,986.18	11.15	10.53	-166.167	60.54	50.26	259.68	238.65	21.03	12.349	
3,050.00	3,041.95	3,036.63	3,035.91	11.35	10.71	-166.336	61.67	50.46	264.63	243.25	21.39	12.374	
3,100.00	3,091.80	3,086.37	3,085.64	11.54	10.89	-166.498	62.80	50.65	269.59	247.85	21.74	12.398	
3,150.00	3,141.64	3,136.12	3,135.38	11.74	11.07	-166.655	63.93	50.85	274.55	252.45	22.10	12.421	
3,200.00	3,191.49	3,185.87	3,185.11	11.93	11.25	-166.806	65.06	51.04	279.52	257.05	22.46	12.444	
3,250.00	3,241.33	3,235.62	3,234.85	12.12	11.43	-166.952	66.20	51.24	284.48	261.66	22.82	12.466	
3,300.00	3,291.18	3,285.37	3,284.58	12.32	11.61	-167.093	67.33	51.43	289.45	266.27	23.18	12.487	
3,350.00	3,341.02	3,335.11	3,334.32	12.51	11.79	-167.229	68.46	51.62	294.42	270.88	23.54	12.508	
3,400.00	3,390.87	3,384.86	3,384.05	12.71	11.97	-167.360	69.59	51.82	299.39	275.49	23.90	12.528	
3,450.00	3,440.71	3,434.61	3,433.79	12.90	12.15	-167.488	70.72	52.01	304.36	280.10	24.26	12.548	
3,500.00	3,490.56	3,484.36	3,483.52	13.10	12.32	-167.611	71.85	52.21	309.33	284.72	24.61	12.567	
3,550.00	3,540.41	3,534.10	3,533.26	13.29	12.50	-167.730	72.98	52.40	314.31	289.33	24.97	12.586	
3,600.00	3,590.25	3,583.85	3,582.99	13.49	12.68	-167.846	74.11	52.60	319.28	293.95	25.33	12.604	
3,650.00	3,640.10	3,633.60	3,632.72	13.68	12.86	-167.958	75.24	52.79	324.26	298.57	25.69	12.622	
3,700.00	3,689.94	3,683.35	3,682.46	13.87	13.04	-168.066	76.38	52.98	329.24	303.19	26.05	12.639	
3,750.00	3,739.79	3,733.10	3,732.19	14.07	13.22	-168.172	77.51	53.18	334.22	307.81	26.41	12.656	
3,800.00	3,789.63	3,782.84	3,781.93	14.26	13.40	-168.274	78.64	53.37	339.20	312.43	26.77	12.672	
3,850.00	3,839.48	3,832.59	3,831.66	14.46	13.58	-168.373	79.77	53.57	344.18	317.05	27.13	12.688	
3,900.00	3,889.32	3,882.34	3,881.40	14.65	13.76	-168.470	80.90	53.76	349.16	321.68	27.48	12.704	
3,950.00	3,939.17	3,932.09	3,931.13	14.85	13.94	-168.564	82.03	53.96	354.14	326.30	27.84	12.719	
4,000.00	3,989.01	3,981.83	3,980.87	15.04	14.12	-168.655	83.16	54.15	359.13	330.92	28.20	12.734	
4,050.00	4,038.86	4,031.58	4,030.60	15.24	14.30	-168.743	84.29	54.34	364.11	335.55	28.56	12.749	
4,100.00	4,088.70	4,081.33	4,080.33	15.43	14.48	-168.830	85.42	54.54	369.10	340.18	28.92	12.763	
4,150.00	4,138.55	4,131.08	4,130.07	15.63	14.65	-168.914	86.56	54.73	374.08	344.81	29.28	12.777	
4,200.00	4,188.39	4,180.82	4,179.80	15.82	14.83	-168.995	87.69	54.93	379.07	349.43	29.64	12.790	
4,250.00	4,238.24	4,230.57	4,229.54	16.01	15.01	-169.075	88.82	55.12	384.06	354.06	30.00	12.804	
4,300.00	4,288.08	4,280.32	4,279.27	16.21	15.19	-169.153	89.95	55.32	389.05	358.69	30.36	12.817	
4,350.00	4,337.93	4,330.07	4,329.01	16.40	15.37	-169.228	91.08	55.51	394.04	363.33	30.71	12.829	
4,400.00	4,387.77	4,379.82	4,378.74	16.60	15.55	-169.302	92.21	55.70	399.03	367.96	31.07	12.842	
4,450.00	4,437.62	4,429.56	4,428.48	16.79	15.73	-169.374	93.34	55.90	404.02	372.59	31.43	12.854	
4,500.00	4,487.46	4,479.31	4,478.21	16.99	15.91	-169.444	94.47	56.09	409.01	377.22	31.79	12.866	
4,550.00	4,537.31	4,529.06	4,527.95	17.18	16.09	-169.513	95.60	56.29	414.00	381.85	32.15	12.877	
4,600.00	4,587.16	4,578.81	4,577.68	17.38	16.27	-169.580	96.74	56.48	419.00	386.49	32.51	12.889	
4,650.00	4,637.00	4,628.55	4,627.41	17.57	16.45	-169.645	97.87	56.68	423.99	391.12	32.87	12.900	
4,700.00	4,686.85	4,678.30	4,677.15	17.77	16.63	-169.709	99.00	56.87	428.98	395.76	33.23	12.911	
4,750.00	4,736.69	4,728.05	4,726.88	17.96	16.81	-169.771	100.13	57.06	433.98	400.39	33.59	12.922	
4,800.00	4,786.54	4,777.80	4,776.62	18.15	16.98	-169.832	101.26	57.26	438.97	405.03	33.94	12.932	
4,850.00	4,836.38	4,827.55	4,826.35	18.35	17.16	-169.891	102.39	57.45	443.97	409.67	34.30	12.942	
4,900.00	4,886.23	4,877.29	4,876.09	18.54	17.34	-169.949	103.52	57.65	448.96	414.30	34.66	12.952	
4,950.00	4,936.07	4,927.04	4,925.82	18.74	17.52	-170.006	104.65	57.84	453.96	418.94	35.02	12.962	
4,990.28	4,976.23	4,967.12	4,965.89	18.89	17.67	-170.051	105.57	58.00	457.99	422.68	35.31	12.970	
5,000.00	4,985.92	4,976.79	4,975.56	18.93	17.70	-177.472	105.78	58.04	458.95	423.57	35.38	12.972	
5,050.00	5,035.76	5,026.53	5,025.28	19.12	17.88	146.067	106.92	58.23	463.81	428.07	35.74	12.976	
5,100.00	5,085.49	5,076.15	5,074.89	19.30	18.06	124.393	108.04	58.42	468.48	432.38	36.10	12.977	
5,150.00	5,134.97	5,125.51	5,124.24	19.48	18.24	113.602	109.17	58.62	473.02	436.57	36.45	12.978	
5,200.00	5,184.07	5,174.48	5,173.20	19.65	18.41	108.001	110.28	58.81	477.51	440.72	36.79	12.980	

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 10H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Offset Design MILLER 14 FEDERAL COM - 70H - Wellbore #1 - PERMIT												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF												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)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,250.00	5,232.64	5,222.93	5,221.63	19.81	18.59	105.045	111.38	59.00	482.08	444.96	37.12	12.986	
5,300.00	5,280.57	5,270.72	5,269.41	19.97	18.76	103.612	112.47	59.18	486.90	449.46	37.44	13.003	
5,350.00	5,327.71	5,317.72	5,316.39	20.13	18.93	103.143	113.54	59.37	492.16	454.41	37.76	13.035	
5,400.00	5,373.94	5,363.80	5,362.46	20.28	19.10	103.318	114.58	59.55	498.07	460.02	38.05	13.089	
5,450.00	5,419.13	5,408.84	5,407.49	20.43	19.26	103.936	115.61	59.72	504.86	466.53	38.33	13.170	
5,500.00	5,463.16	5,452.70	5,451.34	20.59	19.42	104.852	116.61	59.89	512.77	474.18	38.59	13.286	
5,550.00	5,505.91	5,500.85	5,499.47	20.74	19.59	106.212	117.69	59.37	521.87	483.03	38.84	13.437	
5,600.00	5,547.25	5,552.19	5,550.70	20.90	19.76	107.757	118.80	56.20	531.81	492.75	39.06	13.616	
5,650.00	5,587.08	5,605.32	5,603.44	21.08	19.94	109.363	119.89	50.03	542.48	503.23	39.25	13.819	
5,700.00	5,625.28	5,660.40	5,657.69	21.27	20.13	111.008	120.96	40.55	553.79	514.37	39.43	14.046	
5,750.00	5,661.76	5,717.62	5,713.36	21.50	20.32	112.675	122.00	27.40	565.63	526.05	39.58	14.291	
5,800.00	5,696.41	5,777.20	5,770.38	21.78	20.52	114.352	123.01	10.20	577.87	538.16	39.71	14.551	
5,850.00	5,729.14	5,839.32	5,828.57	22.12	20.74	116.029	123.97	-11.49	590.37	550.53	39.84	14.819	
5,900.00	5,759.85	5,904.22	5,887.73	22.54	20.99	117.697	124.86	-38.14	602.99	563.03	39.96	15.090	
5,950.00	5,788.46	5,972.13	5,947.54	23.03	21.27	119.349	125.68	-70.25	615.57	575.48	40.09	15.355	
6,000.00	5,814.91	6,043.24	6,007.57	23.59	21.60	120.974	126.40	-108.35	627.92	587.68	40.24	15.603	
6,007.28	5,818.57	6,053.89	6,016.30	23.68	21.65	121.208	126.50	-114.43	629.70	589.43	40.27	15.638	
6,050.00	5,839.93	6,118.36	6,067.71	24.24	22.01	123.144	127.01	-153.32	639.45	598.94	40.50	15.787	
6,100.00	5,864.93	6,198.27	6,127.59	24.92	22.52	125.019	127.49	-206.18	649.05	608.14	40.91	15.864	
6,150.00	5,889.93	6,282.23	6,185.53	25.67	23.18	126.419	127.79	-266.92	656.34	614.72	41.61	15.772	
6,200.00	5,914.93	6,369.21	6,239.68	26.44	24.01	127.303	127.87	-334.94	660.98	618.39	42.59	15.520	
6,207.28	5,918.57	6,382.05	6,247.14	26.55	24.15	127.386	127.87	-345.40	661.42	618.66	42.76	15.469	
6,250.00	5,938.53	6,457.75	6,288.22	27.27	25.03	127.651	127.74	-408.95	663.74	620.25	43.49	15.261	
6,300.00	5,958.24	6,511.81	6,315.30	28.18	25.76	127.788	127.57	-455.75	667.38	623.11	44.28	15.073	
6,350.00	5,973.88	6,560.74	6,339.76	29.17	26.46	127.961	127.41	-498.12	673.73	628.57	45.17	14.916	
6,400.00	5,985.32	6,608.60	6,363.69	30.22	27.17	128.163	127.26	-539.57	682.87	636.69	46.18	14.788	
6,450.00	5,992.47	6,655.02	6,386.90	31.32	27.89	128.349	127.12	-579.77	694.88	647.52	47.36	14.673	
6,500.00	5,995.29	6,653.07	6,458.61	32.47	31.58	131.511	126.45	-763.35	706.36	657.30	49.06	14.398	
6,526.82	5,995.00	6,981.64	6,469.92	33.10	34.43	132.141	125.98	-891.16	707.83	656.56	51.27	13.806	
6,550.00	5,994.21	7,004.82	6,469.58	33.65	34.96	132.168	125.90	-914.33	708.13	656.05	52.09	13.596	
6,600.00	5,992.51	7,054.81	6,468.85	34.86	36.16	132.226	125.71	-964.31	708.79	654.92	53.87	13.157	
6,650.00	5,990.80	7,104.80	6,468.12	36.10	37.35	132.284	125.53	-1,014.30	709.44	653.75	55.69	12.739	
6,700.00	5,989.10	7,154.79	6,467.39	37.36	38.60	132.342	125.35	-1,064.28	710.10	652.55	57.54	12.340	
6,750.00	5,987.39	7,204.78	6,466.66	38.65	39.85	132.400	125.17	-1,114.27	710.76	651.32	59.43	11.959	
6,800.00	5,985.69	7,254.77	6,465.93	39.95	41.14	132.458	124.98	-1,164.25	711.41	650.07	61.35	11.596	
6,850.00	5,983.98	7,304.76	6,465.20	41.28	42.44	132.516	124.80	-1,214.24	712.07	648.78	63.29	11.251	
6,900.00	5,982.28	7,354.75	6,464.47	42.62	43.76	132.574	124.62	-1,264.22	712.73	647.48	65.26	10.922	
6,950.00	5,980.57	7,404.74	6,463.74	43.98	45.09	132.631	124.44	-1,314.21	713.39	646.15	67.24	10.610	
7,000.00	5,978.87	7,454.73	6,463.00	45.35	46.45	132.689	124.26	-1,364.19	714.05	644.81	69.24	10.312	
7,050.00	5,977.16	7,504.72	6,462.27	46.74	47.81	132.746	124.07	-1,414.18	714.71	643.45	71.26	10.029	
7,100.00	5,975.46	7,554.71	6,461.54	48.13	49.19	132.803	123.89	-1,464.16	715.38	642.08	73.30	9.760	
7,150.00	5,973.75	7,604.70	6,460.81	49.54	50.58	132.860	123.71	-1,514.15	716.04	640.69	75.35	9.503	
7,200.00	5,972.05	7,654.69	6,460.08	50.96	51.98	132.917	123.53	-1,564.13	716.70	639.30	77.41	9.259	
7,250.00	5,970.35	7,704.69	6,459.35	52.39	53.39	132.974	123.34	-1,614.12	717.37	637.89	79.48	9.026	
7,300.00	5,968.64	7,754.68	6,458.62	53.82	54.81	133.031	123.16	-1,664.10	718.03	636.48	81.56	8.804	
7,350.00	5,966.94	7,804.67	6,457.89	55.27	56.24	133.088	122.98	-1,714.08	718.70	635.05	83.64	8.592	
7,400.00	5,965.23	7,854.66	6,457.16	56.71	57.68	133.144	122.80	-1,764.07	719.37	633.63	85.74	8.390	
7,450.00	5,963.53	7,904.65	6,456.43	58.17	59.12	133.201	122.62	-1,814.05	720.03	632.19	87.84	8.197	
7,500.00	5,961.82	7,954.64	6,455.70	59.63	60.57	133.257	122.43	-1,864.04	720.70	630.75	89.95	8.012	
7,550.00	5,960.12	8,004.63	6,454.97	61.10	62.02	133.313	122.25	-1,914.02	721.37	629.31	92.06	7.836	
7,600.00	5,958.41	8,054.62	6,454.24	62.57	63.49	133.370	122.07	-1,964.01	722.04	627.86	94.18	7.667	
7,650.00	5,956.71	8,104.61	6,453.50	64.06	64.95	133.426	121.89	-2,013.99	722.71	626.41	96.30	7.505	

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 10H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Offset Design MILLER 14 FEDERAL COM - 70H - Wellbore #1 - PERMIT												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF												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 Toelface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,700.00	5,955.00	8,154.60	6,452.77	65.54	66.43	133.482	121.70	-2,063.98	723.38	624.95	98.43	7.349	
7,750.00	5,953.30	8,204.59	6,452.04	67.03	67.90	133.538	121.52	-2,113.96	724.05	623.49	100.56	7.200	
7,800.00	5,951.59	8,254.58	6,451.31	68.52	69.39	133.593	121.34	-2,163.95	724.72	622.04	102.69	7.058	
7,850.00	5,949.89	8,304.57	6,450.58	70.01	70.87	133.649	121.16	-2,213.93	725.39	620.58	104.82	6.920	
7,900.00	5,948.19	8,354.56	6,449.85	71.51	72.36	133.705	120.98	-2,263.92	726.07	619.11	106.95	6.789	
7,950.00	5,946.48	8,404.55	6,449.12	73.01	73.85	133.760	120.79	-2,313.90	726.74	617.65	109.09	6.662	
8,000.00	5,944.78	8,454.54	6,448.39	74.52	75.35	133.815	120.61	-2,363.89	727.42	616.19	111.23	6.540	
8,050.00	5,943.07	8,504.53	6,447.66	76.03	76.85	133.871	120.43	-2,413.87	728.09	614.73	113.37	6.423	
8,100.00	5,941.37	8,554.52	6,446.93	77.54	78.36	133.926	120.25	-2,463.86	728.77	613.26	115.50	6.309	
8,150.00	5,939.66	8,604.51	6,446.20	79.05	79.86	133.981	120.07	-2,513.84	729.44	611.80	117.64	6.200	
8,200.00	5,937.96	8,654.51	6,445.47	80.57	81.37	134.036	119.88	-2,563.83	730.12	610.34	119.78	6.095	
8,250.00	5,936.25	8,704.50	6,444.74	82.09	82.88	134.091	119.70	-2,613.81	730.80	608.88	121.92	5.994	
8,300.00	5,934.55	8,754.49	6,444.00	83.61	84.40	134.145	119.52	-2,663.80	731.48	607.42	124.06	5.896	
8,350.00	5,932.84	8,804.48	6,443.27	85.13	85.91	134.200	119.34	-2,713.78	732.16	605.96	126.20	5.802	
8,400.00	5,931.14	8,854.47	6,442.54	86.65	87.43	134.254	119.15	-2,763.77	732.84	604.50	128.34	5.710	
8,450.00	5,929.43	8,904.46	6,441.81	88.18	88.95	134.309	118.97	-2,813.75	733.52	603.04	130.48	5.622	
8,500.00	5,927.73	8,954.45	6,441.08	89.71	90.47	134.363	118.79	-2,863.74	734.20	601.59	132.61	5.536	
8,550.00	5,926.03	9,004.44	6,440.35	91.24	92.00	134.417	118.61	-2,913.72	734.88	600.14	134.75	5.454	
8,600.00	5,924.32	9,054.43	6,439.62	92.77	93.52	134.472	118.43	-2,963.71	735.57	598.68	136.88	5.374	
8,650.00	5,922.62	9,104.42	6,438.89	94.30	95.05	134.526	118.24	-3,013.69	736.25	597.24	139.01	5.296	
8,700.00	5,920.91	9,154.41	6,438.16	95.83	96.58	134.580	118.06	-3,063.68	736.93	595.79	141.15	5.221	
8,750.00	5,919.21	9,204.40	6,437.43	97.37	98.11	134.633	117.88	-3,113.66	737.62	594.34	143.28	5.148	
8,800.00	5,917.50	9,254.39	6,436.70	98.91	99.64	134.687	117.70	-3,163.65	738.30	592.90	145.40	5.078	
8,850.00	5,915.80	9,304.38	6,435.97	100.45	101.18	134.741	117.51	-3,213.63	738.99	591.46	147.53	5.009	
8,900.00	5,914.09	9,354.37	6,435.24	101.98	102.71	134.794	117.33	-3,263.61	739.68	590.02	149.66	4.943	
8,950.00	5,912.39	9,404.36	6,434.50	103.53	104.25	134.848	117.15	-3,313.60	740.36	588.58	151.78	4.878	
9,000.00	5,910.68	9,454.35	6,433.77	105.07	105.78	134.901	116.97	-3,363.58	741.05	587.15	153.90	4.815	
9,050.00	5,908.98	9,504.34	6,433.04	106.61	107.32	134.954	116.79	-3,413.57	741.74	585.72	156.02	4.754	
9,100.00	5,907.27	9,554.33	6,432.31	108.15	108.86	135.007	116.60	-3,463.55	742.43	584.29	158.14	4.695	
9,150.00	5,905.57	9,604.32	6,431.58	109.70	110.40	135.060	116.42	-3,513.54	743.12	582.87	160.25	4.637	
9,200.00	5,903.87	9,654.32	6,430.85	111.24	111.95	135.113	116.24	-3,563.52	743.81	581.45	162.36	4.581	
9,250.00	5,902.16	9,704.31	6,430.12	112.79	113.49	135.166	116.06	-3,613.51	744.50	580.03	164.47	4.527	
9,300.00	5,900.46	9,754.30	6,429.39	114.34	115.03	135.219	115.87	-3,663.49	745.19	578.61	166.58	4.473	
9,350.00	5,898.75	9,804.29	6,428.66	115.88	116.58	135.272	115.69	-3,713.48	745.88	577.20	168.69	4.422	
9,400.00	5,897.05	9,854.28	6,427.93	117.43	118.12	135.324	115.51	-3,763.46	746.58	575.78	170.79	4.371	
9,450.00	5,895.34	9,904.27	6,427.20	118.98	119.67	135.377	115.33	-3,813.45	747.27	574.38	172.89	4.322	
9,500.00	5,893.64	9,954.26	6,426.47	120.53	121.22	135.429	115.15	-3,863.43	747.97	572.97	174.99	4.274	
9,550.00	5,891.93	10,004.25	6,425.74	122.08	122.76	135.481	114.96	-3,913.42	748.66	571.57	177.09	4.228	
9,600.00	5,890.23	10,054.24	6,425.00	123.64	124.31	135.533	114.78	-3,963.40	749.36	570.17	179.18	4.182	
9,650.00	5,888.52	10,104.23	6,424.27	125.19	125.86	135.585	114.60	-4,013.39	750.05	568.78	181.27	4.138	
9,700.00	5,886.82	10,154.22	6,423.54	126.74	127.41	135.637	114.42	-4,063.37	750.75	567.39	183.36	4.094	
9,750.00	5,885.11	10,204.21	6,422.81	128.29	128.96	135.689	114.23	-4,113.36	751.45	566.00	185.45	4.052	
9,800.00	5,883.41	10,254.20	6,422.08	129.85	130.51	135.741	114.05	-4,163.34	752.14	564.61	187.53	4.011	
9,850.00	5,881.71	10,304.19	6,421.35	131.40	132.07	135.793	113.87	-4,213.33	752.84	563.23	189.61	3.970	
9,900.00	5,880.00	10,354.18	6,420.62	132.96	133.62	135.844	113.69	-4,263.31	753.54	561.85	191.69	3.931	
9,950.00	5,878.30	10,404.17	6,419.89	134.51	135.17	135.896	113.51	-4,313.30	754.24	560.47	193.77	3.893	
10,000.00	5,876.59	10,454.16	6,419.16	136.07	136.73	135.947	113.32	-4,363.28	754.94	559.10	195.84	3.855	
10,050.00	5,874.89	10,504.15	6,418.43	137.63	138.28	135.998	113.14	-4,413.27	755.64	557.73	197.91	3.818	
10,100.00	5,873.18	10,554.14	6,417.70	139.18	139.84	136.050	112.96	-4,463.25	756.34	556.37	199.98	3.782	
10,150.00	5,871.48	10,604.14	6,416.97	140.74	141.39	136.101	112.78	-4,513.24	757.05	555.01	202.04	3.747	
10,200.00	5,869.77	10,654.13	6,416.24	142.30	142.95	136.152	112.59	-4,563.22	757.75	553.65	204.10	3.713	
10,250.00	5,868.07	10,704.12	6,415.50	143.86	144.50	136.203	112.41	-4,613.21	758.45	552.29	206.16	3.679	

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 10H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Offset Design MILLER 14 FEDERAL COM - 70H - Wellbore #1 - PERMIT												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IGRF												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)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,300.00	5,866.36	10,754.11	6,414.77	145.41	146.06	136.253	112.23	-4,663.19	759.16	550.94	208.22	3.646	
10,350.00	5,864.66	10,804.10	6,414.04	146.97	147.62	136.304	112.05	-4,713.18	759.86	549.59	210.27	3.614	
10,400.00	5,862.95	10,854.09	6,413.31	148.53	149.18	136.355	111.87	-4,763.16	760.57	548.25	212.32	3.582	
10,450.00	5,861.25	10,904.08	6,412.58	150.09	150.73	136.405	111.68	-4,813.15	761.27	546.90	214.37	3.551	
10,500.00	5,859.55	10,954.07	6,411.85	151.65	152.29	136.456	111.50	-4,863.13	761.98	545.57	216.41	3.521	
10,550.00	5,857.84	11,004.06	6,411.12	153.21	153.85	136.506	111.32	-4,913.11	762.69	544.23	218.45	3.491	
10,600.00	5,856.14	11,054.05	6,410.39	154.77	155.41	136.556	111.14	-4,963.10	763.39	542.90	220.49	3.462	
10,650.00	5,854.43	11,104.04	6,409.66	156.34	156.97	136.606	110.95	-5,013.08	764.10	541.57	222.53	3.434	
10,700.00	5,852.73	11,154.03	6,408.93	157.90	158.53	136.657	110.77	-5,063.07	764.81	540.25	224.56	3.406	
10,750.00	5,851.02	11,204.02	6,408.20	159.46	160.09	136.707	110.59	-5,113.05	765.52	538.93	226.59	3.378	
10,800.00	5,849.32	11,254.01	6,407.47	161.02	161.65	136.756	110.41	-5,163.04	766.23	537.61	228.62	3.352	
10,850.00	5,847.61	11,304.00	6,406.74	162.58	163.21	136.806	110.23	-5,213.02	766.94	536.30	230.64	3.325	
10,900.00	5,845.91	11,353.99	6,406.00	164.15	164.77	136.856	110.04	-5,263.01	767.65	534.99	232.66	3.299	
10,950.00	5,844.20	11,403.98	6,405.27	165.71	166.34	136.906	109.86	-5,312.99	768.36	533.68	234.68	3.274	
11,000.00	5,842.50	11,453.97	6,404.54	167.27	167.90	136.955	109.68	-5,362.98	769.07	532.38	236.70	3.249	
11,050.00	5,840.79	11,503.96	6,403.81	168.84	169.46	137.004	109.50	-5,412.96	769.79	531.08	238.71	3.225	
11,100.00	5,839.09	11,553.96	6,403.08	170.40	171.02	137.054	109.31	-5,462.95	770.50	529.78	240.72	3.201	
11,150.00	5,837.39	11,603.95	6,402.35	171.96	172.59	137.103	109.13	-5,512.93	771.22	528.49	242.72	3.177	
11,200.00	5,835.68	11,653.94	6,401.62	173.53	174.15	137.152	108.95	-5,562.92	771.93	527.20	244.73	3.154	
11,250.00	5,833.98	11,703.93	6,400.89	175.09	175.71	137.201	108.77	-5,612.90	772.64	525.92	246.73	3.132	
11,300.00	5,832.27	11,753.92	6,400.16	176.66	177.28	137.250	108.59	-5,662.89	773.36	524.64	248.72	3.109	
11,350.00	5,830.57	11,803.91	6,399.43	178.22	178.84	137.299	108.40	-5,712.87	774.08	523.36	250.72	3.087	
11,400.00	5,828.86	11,853.90	6,398.70	179.79	180.40	137.348	108.22	-5,762.86	774.79	522.09	252.71	3.066	
11,450.00	5,827.16	11,903.89	6,397.97	181.35	181.97	137.397	108.04	-5,812.84	775.51	520.82	254.70	3.045	
11,500.00	5,825.45	11,953.88	6,397.24	182.92	183.53	137.445	107.86	-5,862.83	776.23	519.55	256.68	3.024	
11,550.00	5,823.75	12,003.87	6,396.50	184.48	185.10	137.494	107.68	-5,912.81	776.95	518.28	258.66	3.004	
11,600.00	5,822.04	12,053.86	6,395.77	186.05	186.66	137.542	107.49	-5,962.80	777.67	517.02	260.64	2.984	
11,609.91	5,821.71	12,063.77	6,395.63	186.36	186.97	137.552	107.46	-5,972.70	777.81	516.77	261.03	2.980	
11,650.00	5,820.34	12,103.85	6,395.04	187.61	188.23	137.590	107.31	-6,012.78	778.39	515.77	262.62	2.964	
11,659.94	5,820.00	12,107.18	6,394.99	187.93	188.33	137.594	107.30	-6,016.11	778.56	515.67	262.89	2.962 SF	

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 10H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Offset Design MILLER 14 FEDERAL COM - OFFSET: MALMAR UNIT TR-2 #5 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 100-UNKNOWN												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	
200.00	200.00	194.00	200.00	0.50	5.76	-28.992	229.17	-126.99	262.00	255.74	6.26	41.841	
250.00	250.00	244.00	250.00	0.68	7.76	-28.992	229.17	-126.99	262.00	253.56	8.44	31.039	
300.00	300.00	294.00	300.00	0.86	9.76	-28.992	229.17	-126.99	262.00	251.38	10.62	24.670 CC	
350.00	350.00	344.00	350.00	1.03	11.76	163.065	229.17	-126.99	262.42	249.63	12.79	20.512	
400.00	399.98	393.98	399.98	1.20	13.76	163.140	229.17	-126.99	263.67	248.71	14.96	17.620	
450.00	449.93	443.93	449.93	1.38	15.76	163.265	229.17	-126.99	265.76	248.63	17.13	15.515 ES	
500.00	499.84	493.84	499.84	1.55	17.75	163.435	229.17	-126.99	268.69	249.40	19.28	13.934	
525.46	525.23	519.23	525.23	1.64	18.77	163.539	229.17	-126.99	270.50	250.12	20.38	13.274	
550.00	549.69	543.69	549.69	1.72	19.75	163.654	229.17	-126.99	272.35	250.91	21.44	12.704	
600.00	599.54	593.54	599.54	1.90	21.74	163.884	229.17	-126.99	276.12	252.53	23.60	11.702	
650.00	649.38	643.38	649.38	2.09	23.74	164.107	229.17	-126.99	279.90	254.14	25.76	10.866	
700.00	699.23	693.23	699.23	2.27	25.73	164.324	229.17	-126.99	283.69	255.77	27.92	10.160	
750.00	749.07	743.07	749.07	2.46	27.72	164.536	229.17	-126.99	287.47	257.39	30.09	9.555	
800.00	798.92	792.92	798.92	2.65	29.72	164.742	229.17	-126.99	291.27	259.02	32.25	9.032	
850.00	848.76	842.76	848.76	2.84	31.71	164.943	229.17	-126.99	295.06	260.65	34.41	8.574	
900.00	898.61	892.61	898.61	3.03	33.70	165.139	229.17	-126.99	298.86	262.28	36.58	8.170	
950.00	948.45	942.45	948.45	3.22	35.70	165.329	229.17	-126.99	302.66	263.91	38.75	7.811	
1,000.00	998.30	992.30	998.30	3.41	37.69	165.516	229.17	-126.99	306.47	265.55	40.91	7.491	
1,050.00	1,048.14	1,042.14	1,048.14	3.60	39.69	165.697	229.17	-126.99	310.27	267.19	43.08	7.202	
1,100.00	1,097.99	1,091.99	1,097.99	3.79	41.68	165.874	229.17	-126.99	314.09	268.84	45.25	6.941	
1,150.00	1,147.83	1,141.83	1,147.83	3.98	43.67	166.047	229.17	-126.99	317.90	270.49	47.42	6.705	
1,200.00	1,197.68	1,191.68	1,197.68	4.18	45.67	166.216	229.17	-126.99	321.72	272.13	49.58	6.488	
1,250.00	1,247.52	1,241.52	1,247.52	4.37	47.66	166.381	229.17	-126.99	325.54	273.79	51.75	6.290	
1,300.00	1,297.37	1,291.37	1,297.37	4.56	49.65	166.542	229.17	-126.99	329.36	275.44	53.92	6.108	
1,350.00	1,347.22	1,341.22	1,347.22	4.75	51.65	166.699	229.17	-126.99	333.18	277.10	56.09	5.941	
1,400.00	1,397.06	1,391.06	1,397.06	4.95	53.64	166.853	229.17	-126.99	337.01	278.76	58.25	5.785	
1,450.00	1,446.91	1,440.91	1,446.91	5.14	55.64	167.003	229.17	-126.99	340.84	280.42	60.42	5.641	
1,500.00	1,496.75	1,490.75	1,496.75	5.33	57.63	167.150	229.17	-126.99	344.67	282.08	62.59	5.507	
1,550.00	1,546.60	1,540.60	1,546.60	5.53	59.62	167.294	229.17	-126.99	348.51	283.75	64.76	5.382	
1,600.00	1,596.44	1,590.44	1,596.44	5.72	61.62	167.434	229.17	-126.99	352.34	285.42	66.93	5.265	
1,650.00	1,646.29	1,640.29	1,646.29	5.91	63.61	167.572	229.17	-126.99	356.18	287.09	69.10	5.155	
1,700.00	1,696.13	1,690.13	1,696.13	6.11	65.61	167.706	229.17	-126.99	360.02	288.76	71.26	5.052	
1,750.00	1,745.98	1,739.98	1,745.98	6.30	67.60	167.838	229.17	-126.99	363.87	290.43	73.43	4.955	
1,800.00	1,795.82	1,789.82	1,795.82	6.49	69.59	167.967	229.17	-126.99	367.71	292.11	75.60	4.864	
1,850.00	1,845.67	1,839.67	1,845.67	6.69	71.59	168.094	229.17	-126.99	371.56	293.79	77.77	4.778	
1,900.00	1,895.51	1,889.51	1,895.51	6.88	73.58	168.217	229.17	-126.99	375.40	295.46	79.94	4.696	
1,950.00	1,945.36	1,939.36	1,945.36	7.08	75.57	168.339	229.17	-126.99	379.25	297.15	82.11	4.619	
2,000.00	1,995.20	1,989.20	1,995.20	7.27	77.57	168.457	229.17	-126.99	383.10	298.83	84.28	4.546	
2,050.00	2,045.05	2,039.05	2,045.05	7.46	79.56	168.574	229.17	-126.99	386.96	300.51	86.45	4.476	
2,100.00	2,094.89	2,088.89	2,094.89	7.66	81.56	168.688	229.17	-126.99	390.81	302.20	88.61	4.410	
2,150.00	2,144.74	2,138.74	2,144.74	7.85	83.55	168.800	229.17	-126.99	394.67	303.88	90.78	4.347	
2,200.00	2,194.58	2,188.58	2,194.58	8.04	85.54	168.910	229.17	-126.99	398.53	305.57	92.95	4.287	
2,250.00	2,244.43	2,238.43	2,244.43	8.24	87.54	169.017	229.17	-126.99	402.38	307.26	95.12	4.230	
2,300.00	2,294.27	2,288.27	2,294.27	8.43	89.53	169.123	229.17	-126.99	406.24	308.95	97.29	4.176	
2,350.00	2,344.12	2,338.12	2,344.12	8.63	91.52	169.227	229.17	-126.99	410.11	310.65	99.46	4.123	
2,400.00	2,393.96	2,387.96	2,393.96	8.82	93.52	169.328	229.17	-126.99	413.97	312.34	101.63	4.073	
2,450.00	2,443.81	2,437.81	2,443.81	9.02	95.51	169.428	229.17	-126.99	417.83	314.04	103.80	4.026	
2,500.00	2,493.66	2,487.66	2,493.66	9.21	97.51	169.526	229.17	-126.99	421.70	315.73	105.96	3.980	
2,550.00	2,543.50	2,537.50	2,543.50	9.40	99.50	169.622	229.17	-126.99	425.56	317.43	108.13	3.936	
2,600.00	2,593.35	2,587.35	2,593.35	9.60	101.49	169.717	229.17	-126.99	429.43	319.13	110.30	3.893	
2,650.00	2,643.19	2,637.19	2,643.19	9.79	103.49	169.810	229.17	-126.99	433.30	320.83	112.47	3.853	
2,700.00	2,693.04	2,687.04	2,693.04	9.99	105.48	169.901	229.17	-126.99	437.17	322.53	114.64	3.813	

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 10H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Offset Design MILLER 14 FEDERAL COM - OFFSET: MALMAR UNIT TR-2 #5 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 100-UNKNOWN												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
2,750.00	2,742.88	2,736.88	2,742.88	10.18	107.48	169.990	229.17	-126.99	441.04	324.23	116.81	3.776	
2,800.00	2,792.73	2,786.73	2,792.73	10.38	109.47	170.078	229.17	-126.99	444.91	325.94	118.98	3.739	
2,850.00	2,842.57	2,836.57	2,842.57	10.57	111.46	170.165	229.17	-126.99	448.79	327.64	121.15	3.705	
2,900.00	2,892.42	2,886.42	2,892.42	10.76	113.46	170.250	229.17	-126.99	452.66	329.35	123.31	3.671	
2,950.00	2,942.26	2,936.26	2,942.26	10.96	115.45	170.333	229.17	-126.99	456.54	331.05	125.48	3.638	
3,000.00	2,992.11	2,986.11	2,992.11	11.15	117.44	170.415	229.17	-126.99	460.41	332.76	127.65	3.607	
3,050.00	3,041.95	3,035.95	3,041.95	11.35	119.44	170.496	229.17	-126.99	464.29	334.47	129.82	3.576	
3,100.00	3,091.80	3,085.80	3,091.80	11.54	121.43	170.576	229.17	-126.99	468.17	336.18	131.99	3.547	
3,150.00	3,141.64	3,135.64	3,141.64	11.74	123.43	170.654	229.17	-126.99	472.05	337.89	134.16	3.519	
3,200.00	3,191.49	3,185.49	3,191.49	11.93	125.42	170.731	229.17	-126.99	475.93	339.60	136.33	3.491	
3,250.00	3,241.33	3,235.33	3,241.33	12.12	127.41	170.806	229.17	-126.99	479.81	341.31	138.50	3.464	
3,300.00	3,291.18	3,285.18	3,291.18	12.32	129.41	170.881	229.17	-126.99	483.69	343.02	140.67	3.439	
3,350.00	3,341.02	3,335.02	3,341.02	12.51	131.40	170.954	229.17	-126.99	487.57	344.73	142.83	3.414	
3,400.00	3,390.87	3,384.87	3,390.87	12.71	133.39	171.026	229.17	-126.99	491.45	346.45	145.00	3.389	
3,450.00	3,440.71	3,434.71	3,440.71	12.90	135.39	171.097	229.17	-126.99	495.34	348.16	147.17	3.366	
3,500.00	3,490.56	3,484.56	3,490.56	13.10	137.38	171.167	229.17	-126.99	499.22	349.88	149.34	3.343	
3,550.00	3,540.41	3,534.41	3,540.41	13.29	139.38	171.235	229.17	-126.99	503.10	351.59	151.51	3.321	
3,600.00	3,590.25	3,584.25	3,590.25	13.49	141.37	171.303	229.17	-126.99	506.99	353.31	153.68	3.299	
3,650.00	3,640.10	3,634.10	3,640.10	13.68	143.36	171.370	229.17	-126.99	510.88	355.03	155.85	3.278	
3,700.00	3,689.94	3,683.94	3,689.94	13.87	145.36	171.435	229.17	-126.99	514.76	356.75	158.02	3.258	
3,750.00	3,739.79	3,733.79	3,739.79	14.07	147.35	171.500	229.17	-126.99	518.65	358.47	160.19	3.238	
3,800.00	3,789.63	3,783.63	3,789.63	14.26	149.35	171.564	229.17	-126.99	522.54	360.19	162.35	3.219	
3,850.00	3,839.48	3,833.48	3,839.48	14.46	151.34	171.626	229.17	-126.99	526.43	361.91	164.52	3.200	
3,900.00	3,889.32	3,883.32	3,889.32	14.65	153.33	171.688	229.17	-126.99	530.32	363.63	166.69	3.181	
3,950.00	3,939.17	3,933.17	3,939.17	14.85	155.33	171.749	229.17	-126.99	534.21	365.35	168.86	3.164	
4,000.00	3,989.01	3,983.01	3,989.01	15.04	157.32	171.809	229.17	-126.99	538.10	367.07	171.03	3.146	
4,050.00	4,038.86	4,032.86	4,038.86	15.24	159.31	171.868	229.17	-126.99	541.99	368.79	173.20	3.129	
4,100.00	4,088.70	4,082.70	4,088.70	15.43	161.31	171.927	229.17	-126.99	545.88	370.52	175.37	3.113	
4,150.00	4,138.55	4,132.55	4,138.55	15.63	163.30	171.984	229.17	-126.99	549.78	372.24	177.54	3.097	
4,200.00	4,188.39	4,182.39	4,188.39	15.82	165.30	172.041	229.17	-126.99	553.67	373.96	179.71	3.081	
4,250.00	4,238.24	4,232.24	4,238.24	16.01	167.29	172.097	229.17	-126.99	557.56	375.69	181.87	3.066	
4,300.00	4,288.08	4,282.08	4,288.08	16.21	169.28	172.152	229.17	-126.99	561.46	377.41	184.04	3.051	
4,350.00	4,337.93	4,331.93	4,337.93	16.40	171.28	172.207	229.17	-126.99	565.35	379.14	186.21	3.036	
4,400.00	4,387.77	4,381.77	4,387.77	16.60	173.27	172.260	229.17	-126.99	569.25	380.87	188.38	3.022 SF	
4,450.00	4,437.62	4,400.00	4,406.00	16.79	174.00	172.280	229.17	-126.99	574.01	384.72	189.29	3.032	
4,500.00	4,487.46	4,400.00	4,406.00	16.99	174.00	172.280	229.17	-126.99	582.76	393.29	189.47	3.076	
4,550.00	4,537.31	4,400.00	4,406.00	17.18	174.00	172.280	229.17	-126.99	595.59	405.94	189.65	3.140	
4,600.00	4,587.16	4,400.00	4,406.00	17.38	174.00	172.280	229.17	-126.99	612.25	422.41	189.83	3.225	
4,650.00	4,637.00	4,400.00	4,406.00	17.57	174.00	172.280	229.17	-126.99	632.43	442.41	190.02	3.328	
4,700.00	4,686.85	4,400.00	4,406.00	17.77	174.00	172.280	229.17	-126.99	655.81	465.61	190.20	3.448	
4,750.00	4,736.69	4,400.00	4,406.00	17.96	174.00	172.280	229.17	-126.99	682.06	491.68	190.38	3.583	
4,800.00	4,786.54	4,400.00	4,406.00	18.15	174.00	172.280	229.17	-126.99	710.86	520.30	190.56	3.730	
4,850.00	4,836.38	4,400.00	4,406.00	18.35	174.00	172.280	229.17	-126.99	741.91	551.17	190.74	3.890	
4,900.00	4,886.23	4,400.00	4,406.00	18.54	174.00	172.280	229.17	-126.99	774.95	584.03	190.92	4.059	
4,950.00	4,936.07	4,400.00	4,406.00	18.74	174.00	172.280	229.17	-126.99	809.74	618.63	191.11	4.237	
4,990.28	4,976.23	4,400.00	4,406.00	18.89	174.00	172.280	229.17	-126.99	838.88	647.63	191.25	4.386	
5,000.00	4,985.92	4,400.00	4,406.00	18.93	174.00	164.334	229.17	-126.99	846.03	654.69	191.34	4.422	
5,050.00	5,035.76	4,400.00	4,406.00	19.12	174.00	124.951	229.17	-126.99	883.21	691.41	191.80	4.605	
5,100.00	5,085.49	4,400.00	4,406.00	19.30	174.00	100.014	229.17	-126.99	920.88	728.71	192.17	4.792	
5,150.00	5,134.97	4,400.00	4,406.00	19.48	174.00	85.678	229.17	-126.99	958.90	766.52	192.38	4.984	
5,200.00	5,184.07	4,400.00	4,406.00	19.65	174.00	76.302	229.17	-126.99	997.11	804.78	192.32	5.184	
5,250.00	5,232.64	4,400.00	4,406.00	19.81	174.00	69.400	229.17	-126.99	1,035.40	843.46	191.94	5.394	

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 10H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Offset Design MILLER 14 FEDERAL COM - OFFSET: MALMAR UNIT TR-2 #5 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 100-UNKNOWN												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 Toelface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,300.00	5,280.57	4,400.00	4,406.00	19.97	174.00	63.904	229.17	-126.99	1,073.66	882.52	191.15	5.617	
5,350.00	5,327.71	4,400.00	4,406.00	20.13	174.00	59.307	229.17	-126.99	1,111.80	921.90	189.90	5.855	
5,400.00	5,373.94	4,400.00	4,406.00	20.28	174.00	55.342	229.17	-126.99	1,149.73	961.58	188.15	6.111	
5,450.00	5,419.13	4,400.00	4,406.00	20.43	174.00	51.856	229.17	-126.99	1,187.37	1,001.49	185.88	6.388	
5,500.00	5,463.16	4,400.00	4,406.00	20.59	174.00	48.755	229.17	-126.99	1,224.64	1,041.56	183.09	6.689	
5,550.00	5,505.91	4,400.00	4,406.00	20.74	174.00	45.973	229.17	-126.99	1,261.49	1,081.72	179.77	7.017	
5,600.00	5,547.25	4,400.00	4,406.00	20.90	174.00	43.465	229.17	-126.99	1,297.85	1,121.90	175.95	7.376	
5,650.00	5,587.08	4,400.00	4,406.00	21.08	174.00	41.196	229.17	-126.99	1,333.67	1,162.02	171.65	7.770	
5,700.00	5,625.28	4,400.00	4,406.00	21.27	174.00	39.138	229.17	-126.99	1,368.89	1,201.99	166.90	8.202	
5,750.00	5,661.76	4,400.00	4,406.00	21.50	174.00	37.268	229.17	-126.99	1,403.47	1,241.73	161.74	8.677	
5,800.00	5,696.41	4,400.00	4,406.00	21.78	174.00	35.566	229.17	-126.99	1,437.35	1,281.14	156.21	9.201	
5,850.00	5,729.14	4,400.00	4,406.00	22.12	174.00	34.015	229.17	-126.99	1,470.51	1,320.15	150.37	9.780	
5,900.00	5,759.85	4,400.00	4,406.00	22.54	174.00	32.601	229.17	-126.99	1,502.90	1,358.65	144.25	10.419	
5,950.00	5,788.46	4,400.00	4,406.00	23.03	174.00	31.311	229.17	-126.99	1,534.48	1,396.56	137.92	11.126	
6,000.00	5,814.91	4,400.00	4,406.00	23.59	174.00	30.134	229.17	-126.99	1,565.22	1,433.77	131.45	11.907	
6,007.28	5,818.57	4,400.00	4,406.00	23.68	174.00	29.971	229.17	-126.99	1,569.63	1,439.13	130.50	12.028	
6,050.00	5,839.93	4,400.00	4,406.00	24.24	174.00	29.971	229.17	-126.99	1,595.77	1,464.92	130.85	12.195	
6,100.00	5,864.93	4,400.00	4,406.00	24.92	174.00	29.971	229.17	-126.99	1,627.27	1,496.00	131.27	12.397	
6,150.00	5,889.93	4,400.00	4,406.00	25.67	174.00	29.971	229.17	-126.99	1,659.67	1,527.96	131.72	12.600	
6,200.00	5,914.93	4,400.00	4,406.00	26.44	174.00	29.971	229.17	-126.99	1,692.93	1,560.76	132.17	12.809	
6,207.28	5,918.57	4,400.00	4,406.00	26.55	174.00	29.971	229.17	-126.99	1,697.85	1,565.61	132.23	12.840	
6,250.00	5,938.53	4,400.00	4,406.00	27.27	174.00	28.155	229.17	-126.99	1,725.97	1,603.95	122.03	14.144	
6,300.00	5,958.24	4,400.00	4,406.00	28.18	174.00	26.348	229.17	-126.99	1,756.95	1,646.73	110.22	15.941	
6,350.00	5,973.88	4,400.00	4,406.00	29.17	174.00	24.830	229.17	-126.99	1,785.70	1,686.67	99.03	18.032	
6,400.00	5,985.32	4,400.00	4,406.00	30.22	174.00	23.554	229.17	-126.99	1,812.13	1,723.02	89.10	20.337	
6,450.00	5,992.47	4,400.00	4,406.00	31.32	174.00	22.484	229.17	-126.99	1,836.13	1,754.88	81.25	22.598	
6,500.00	5,995.29	4,400.00	4,406.00	32.47	174.00	21.590	229.17	-126.99	1,857.62	1,781.25	76.37	24.323	
6,526.82	5,995.00	4,400.00	4,406.00	33.10	174.00	21.175	229.17	-126.99	1,868.09	1,792.84	75.25	24.826	
6,550.00	5,994.21	4,400.00	4,406.00	33.65	174.00	21.175	229.17	-126.99	1,876.94	1,801.43	75.51	24.858	
6,600.00	5,992.51	4,400.00	4,406.00	34.86	174.00	21.175	229.17	-126.99	1,896.84	1,820.78	76.06	24.937	
6,650.00	5,990.80	4,400.00	4,406.00	36.10	174.00	21.175	229.17	-126.99	1,917.84	1,841.20	76.64	25.023	
6,700.00	5,989.10	4,400.00	4,406.00	37.36	174.00	21.175	229.17	-126.99	1,939.91	1,862.69	77.22	25.123	
6,750.00	5,987.39	4,400.00	4,406.00	38.65	174.00	21.175	229.17	-126.99	1,963.00	1,885.19	77.81	25.228	
6,800.00	5,985.69	4,400.00	4,406.00	39.95	174.00	21.175	229.17	-126.99	1,987.08	1,908.67	78.40	25.344	
6,850.00	5,983.98	4,400.00	4,406.00	41.28	174.00	21.175	229.17	-126.99	2,012.11	1,933.10	79.01	25.466	
6,900.00	5,982.28	4,400.00	4,406.00	42.62	174.00	21.175	229.17	-126.99	2,038.06	1,958.45	79.62	25.599	
6,950.00	5,980.57	4,400.00	4,406.00	43.98	174.00	21.175	229.17	-126.99	2,064.90	1,984.67	80.23	25.736	
7,000.00	5,978.87	4,400.00	4,406.00	45.35	174.00	21.175	229.17	-126.99	2,092.59	2,011.74	80.85	25.882	
7,050.00	5,977.16	4,400.00	4,406.00	46.74	174.00	21.175	229.17	-126.99	2,121.10	2,039.62	81.48	26.033	
7,100.00	5,975.46	4,400.00	4,406.00	48.13	174.00	21.175	229.17	-126.99	2,150.39	2,068.29	82.10	26.192	
7,150.00	5,973.75	4,400.00	4,406.00	49.54	174.00	21.175	229.17	-126.99	2,180.43	2,097.70	82.73	26.355	
7,200.00	5,972.05	4,400.00	4,406.00	50.96	174.00	21.175	229.17	-126.99	2,211.20	2,127.84	83.36	26.524	
7,250.00	5,970.35	4,400.00	4,406.00	52.39	174.00	21.175	229.17	-126.99	2,242.66	2,158.66	84.00	26.697	
7,300.00	5,968.64	4,400.00	4,406.00	53.82	174.00	21.175	229.17	-126.99	2,274.78	2,190.14	84.64	26.876	
7,350.00	5,966.94	4,400.00	4,406.00	55.27	174.00	21.175	229.17	-126.99	2,307.54	2,222.26	85.28	27.058	
7,400.00	5,965.23	4,400.00	4,406.00	56.71	174.00	21.175	229.17	-126.99	2,340.91	2,254.99	85.92	27.244	
7,450.00	5,963.53	4,400.00	4,406.00	58.17	174.00	21.175	229.17	-126.99	2,374.87	2,288.30	86.57	27.432	
7,500.00	5,961.82	4,400.00	4,406.00	59.63	174.00	21.175	229.17	-126.99	2,409.38	2,322.16	87.22	27.625	
7,550.00	5,960.12	4,400.00	4,406.00	61.10	174.00	21.175	229.17	-126.99	2,444.43	2,356.56	87.87	27.819	
7,600.00	5,958.41	4,400.00	4,406.00	62.57	174.00	21.175	229.17	-126.99	2,479.99	2,391.47	88.52	28.017	
7,650.00	5,956.71	4,400.00	4,406.00	64.06	174.00	21.175	229.17	-126.99	2,516.04	2,426.87	89.17	28.216	
7,700.00	5,955.00	4,400.00	4,406.00	65.54	174.00	21.175	229.17	-126.99	2,552.56	2,462.74	89.82	28.418	

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 10H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Offset Design MILLER 14 FEDERAL COM - OFFSET: MALMAR UNIT TR-2 #5 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 100-UNKNOWN												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	
7,750.00	5,953.30	4,400.00	4,406.00	67.03	174.00	21.175	229.17	-126.99	2,589.54	2,499.06	90.48	28.621	
7,800.00	5,951.59	4,400.00	4,406.00	68.52	174.00	21.175	229.17	-126.99	2,626.94	2,535.81	91.13	28.826	
7,850.00	5,949.89	4,400.00	4,406.00	70.01	174.00	21.175	229.17	-126.99	2,664.76	2,572.97	91.79	29.031	
7,900.00	5,948.19	4,400.00	4,406.00	71.51	174.00	21.175	229.17	-126.99	2,702.97	2,610.52	92.45	29.238	
7,950.00	5,946.48	4,400.00	4,406.00	73.01	174.00	21.175	229.17	-126.99	2,741.56	2,648.46	93.11	29.446	
8,000.00	5,944.78	4,400.00	4,406.00	74.52	174.00	21.175	229.17	-126.99	2,780.52	2,686.75	93.76	29.654	
8,050.00	5,943.07	4,400.00	4,406.00	76.03	174.00	21.175	229.17	-126.99	2,819.82	2,725.40	94.43	29.863	
8,100.00	5,941.37	4,400.00	4,406.00	77.54	174.00	21.175	229.17	-126.99	2,859.46	2,764.38	95.09	30.072	
8,150.00	5,939.66	4,400.00	4,406.00	79.05	174.00	21.175	229.17	-126.99	2,899.42	2,803.67	95.75	30.282	
8,200.00	5,937.96	4,400.00	4,406.00	80.57	174.00	21.175	229.17	-126.99	2,939.69	2,843.28	96.41	30.492	
8,250.00	5,936.25	4,400.00	4,406.00	82.09	174.00	21.175	229.17	-126.99	2,980.25	2,883.17	97.07	30.701	
8,300.00	5,934.55	4,400.00	4,406.00	83.61	174.00	21.175	229.17	-126.99	3,021.09	2,923.35	97.74	30.911	
8,350.00	5,932.84	4,400.00	4,406.00	85.13	174.00	21.175	229.17	-126.99	3,062.21	2,963.80	98.40	31.120	
8,400.00	5,931.14	4,400.00	4,406.00	86.65	174.00	21.175	229.17	-126.99	3,103.58	3,004.52	99.07	31.329	
8,450.00	5,929.43	4,400.00	4,406.00	88.18	174.00	21.175	229.17	-126.99	3,145.21	3,045.48	99.73	31.537	
8,500.00	5,927.73	4,400.00	4,406.00	89.71	174.00	21.175	229.17	-126.99	3,187.08	3,086.68	100.40	31.745	
8,550.00	5,926.03	4,400.00	4,406.00	91.24	174.00	21.175	229.17	-126.99	3,229.18	3,128.11	101.06	31.952	
8,600.00	5,924.32	4,400.00	4,406.00	92.77	174.00	21.175	229.17	-126.99	3,271.50	3,169.77	101.73	32.159	
8,650.00	5,922.62	4,400.00	4,406.00	94.30	174.00	21.175	229.17	-126.99	3,314.03	3,211.64	102.40	32.365	
8,700.00	5,920.91	4,400.00	4,406.00	95.83	174.00	21.175	229.17	-126.99	3,356.77	3,253.71	103.06	32.570	
8,750.00	5,919.21	4,400.00	4,406.00	97.37	174.00	21.175	229.17	-126.99	3,399.71	3,295.98	103.73	32.774	
8,800.00	5,917.50	4,400.00	4,406.00	98.91	174.00	21.175	229.17	-126.99	3,442.84	3,338.44	104.40	32.978	
8,850.00	5,915.80	4,400.00	4,406.00	100.45	174.00	21.175	229.17	-126.99	3,486.15	3,381.09	105.07	33.180	
8,900.00	5,914.09	4,400.00	4,406.00	101.98	174.00	21.175	229.17	-126.99	3,529.64	3,423.91	105.74	33.382	
8,950.00	5,912.39	4,400.00	4,406.00	103.53	174.00	21.175	229.17	-126.99	3,573.31	3,466.90	106.41	33.582	
9,000.00	5,910.68	4,400.00	4,406.00	105.07	174.00	21.175	229.17	-126.99	3,617.13	3,510.05	107.07	33.781	
9,050.00	5,908.98	4,400.00	4,406.00	106.61	174.00	21.175	229.17	-126.99	3,661.11	3,553.37	107.74	33.980	
9,100.00	5,907.27	4,400.00	4,406.00	108.15	174.00	21.175	229.17	-126.99	3,705.25	3,596.83	108.41	34.177	
9,150.00	5,905.57	4,400.00	4,406.00	109.70	174.00	21.175	229.17	-126.99	3,749.53	3,640.45	109.08	34.373	
9,200.00	5,903.87	4,400.00	4,406.00	111.24	174.00	21.175	229.17	-126.99	3,793.95	3,684.20	109.75	34.568	
9,250.00	5,902.16	4,400.00	4,406.00	112.79	174.00	21.175	229.17	-126.99	3,838.52	3,728.09	110.43	34.761	
9,300.00	5,900.46	4,400.00	4,406.00	114.34	174.00	21.175	229.17	-126.99	3,883.21	3,772.12	111.10	34.954	
9,350.00	5,898.75	4,400.00	4,406.00	115.88	174.00	21.175	229.17	-126.99	3,928.03	3,816.27	111.77	35.145	
9,400.00	5,897.05	4,400.00	4,406.00	117.43	174.00	21.175	229.17	-126.99	3,972.98	3,860.54	112.44	35.335	
9,450.00	5,895.34	4,400.00	4,406.00	118.98	174.00	21.175	229.17	-126.99	4,018.04	3,904.93	113.11	35.523	
9,500.00	5,893.64	4,400.00	4,406.00	120.53	174.00	21.175	229.17	-126.99	4,063.22	3,949.44	113.78	35.711	
9,550.00	5,891.93	4,400.00	4,406.00	122.08	174.00	21.175	229.17	-126.99	4,108.52	3,994.06	114.45	35.897	
9,600.00	5,890.23	4,400.00	4,406.00	123.64	174.00	21.175	229.17	-126.99	4,153.92	4,038.79	115.12	36.082	
9,650.00	5,888.52	4,400.00	4,406.00	125.19	174.00	21.175	229.17	-126.99	4,199.42	4,083.63	115.80	36.265	
9,700.00	5,886.82	4,400.00	4,406.00	126.74	174.00	21.175	229.17	-126.99	4,245.03	4,128.56	116.47	36.448	
9,750.00	5,885.11	4,400.00	4,406.00	128.29	174.00	21.175	229.17	-126.99	4,290.73	4,173.59	117.14	36.629	
9,800.00	5,883.41	4,400.00	4,406.00	129.85	174.00	21.175	229.17	-126.99	4,336.53	4,218.72	117.81	36.808	
9,850.00	5,881.71	4,400.00	4,406.00	131.40	174.00	21.175	229.17	-126.99	4,382.42	4,263.93	118.49	36.987	
9,900.00	5,880.00	4,400.00	4,406.00	132.96	174.00	21.175	229.17	-126.99	4,428.40	4,309.24	119.16	37.164	
9,950.00	5,878.30	4,400.00	4,406.00	134.51	174.00	21.175	229.17	-126.99	4,474.47	4,354.63	119.83	37.339	
10,000.00	5,876.59	4,400.00	4,406.00	136.07	174.00	21.175	229.17	-126.99	4,520.62	4,400.11	120.51	37.514	
10,050.00	5,874.89	4,400.00	4,406.00	137.63	174.00	21.175	229.17	-126.99	4,566.85	4,445.67	121.18	37.687	
10,100.00	5,873.18	4,400.00	4,406.00	139.18	174.00	21.175	229.17	-126.99	4,613.16	4,491.30	121.85	37.859	
10,150.00	5,871.48	4,400.00	4,406.00	140.74	174.00	21.175	229.17	-126.99	4,659.54	4,537.01	122.53	38.029	
10,200.00	5,869.77	4,400.00	4,406.00	142.30	174.00	21.175	229.17	-126.99	4,706.00	4,582.80	123.20	38.198	
10,250.00	5,868.07	4,400.00	4,406.00	143.86	174.00	21.175	229.17	-126.99	4,752.53	4,628.66	123.87	38.366	
10,300.00	5,866.36	4,400.00	4,406.00	145.41	174.00	21.175	229.17	-126.99	4,799.13	4,674.59	124.55	38.533	

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



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 10H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Offset Design MILLER 14 FEDERAL COM - OFFSET: MALMAR UNIT TR-2 #5 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 100-UNKNOWN												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)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,350.00	5,864.66	4,400.00	4,406.00	146.97	174.00	21.175	229.17	-126.99	4,845.80	4,720.58	125.22	38.698	
10,400.00	5,862.95	4,400.00	4,406.00	148.53	174.00	21.175	229.17	-126.99	4,892.54	4,766.64	125.89	38.862	
10,450.00	5,861.25	4,400.00	4,406.00	150.09	174.00	21.175	229.17	-126.99	4,939.33	4,812.77	126.57	39.025	
10,500.00	5,859.55	4,400.00	4,406.00	151.65	174.00	21.175	229.17	-126.99	4,986.19	4,858.95	127.24	39.186	
10,550.00	5,857.84	4,400.00	4,406.00	153.21	174.00	21.175	229.17	-126.99	5,033.12	4,905.20	127.92	39.347	
10,600.00	5,856.14	4,400.00	4,406.00	154.77	174.00	21.175	229.17	-126.99	5,080.10	4,951.50	128.59	39.506	
10,650.00	5,854.43	4,400.00	4,406.00	156.34	174.00	21.175	229.17	-126.99	5,127.13	4,997.87	129.27	39.663	
10,700.00	5,852.73	4,400.00	4,406.00	157.90	174.00	21.175	229.17	-126.99	5,174.23	5,044.28	129.94	39.820	
10,750.00	5,851.02	4,400.00	4,406.00	159.46	174.00	21.175	229.17	-126.99	5,221.37	5,090.76	130.62	39.975	
10,800.00	5,849.32	4,400.00	4,406.00	161.02	174.00	21.175	229.17	-126.99	5,268.57	5,137.28	131.29	40.129	
10,850.00	5,847.61	4,400.00	4,406.00	162.58	174.00	21.175	229.17	-126.99	5,315.82	5,183.86	131.96	40.282	
10,900.00	5,845.91	4,400.00	4,406.00	164.15	174.00	21.175	229.17	-126.99	5,363.12	5,230.48	132.64	40.434	
10,950.00	5,844.20	4,400.00	4,406.00	165.71	174.00	21.175	229.17	-126.99	5,410.47	5,277.16	133.31	40.584	
11,000.00	5,842.50	4,400.00	4,406.00	167.27	174.00	21.175	229.17	-126.99	5,457.87	5,323.88	133.99	40.734	
11,050.00	5,840.79	4,400.00	4,406.00	168.84	174.00	21.175	229.17	-126.99	5,505.31	5,370.64	134.66	40.882	
11,100.00	5,839.09	4,400.00	4,406.00	170.40	174.00	21.175	229.17	-126.99	5,552.80	5,417.46	135.34	41.029	
11,150.00	5,837.39	4,400.00	4,406.00	171.96	174.00	21.175	229.17	-126.99	5,600.33	5,464.31	136.01	41.175	
11,200.00	5,835.68	4,400.00	4,406.00	173.53	174.00	21.175	229.17	-126.99	5,647.90	5,511.21	136.69	41.319	
11,250.00	5,833.98	4,400.00	4,406.00	175.09	174.00	21.175	229.17	-126.99	5,695.52	5,558.15	137.36	41.463	
11,300.00	5,832.27	4,400.00	4,406.00	176.66	174.00	21.175	229.17	-126.99	5,743.17	5,605.13	138.04	41.605	
11,350.00	5,830.57	4,400.00	4,406.00	178.22	174.00	21.175	229.17	-126.99	5,790.87	5,652.15	138.72	41.746	
11,400.00	5,828.86	4,400.00	4,406.00	179.79	174.00	21.175	229.17	-126.99	5,838.60	5,699.21	139.39	41.887	
11,450.00	5,827.16	4,400.00	4,406.00	181.35	174.00	21.175	229.17	-126.99	5,886.37	5,746.30	140.07	42.026	
11,500.00	5,825.45	4,400.00	4,406.00	182.92	174.00	21.175	229.17	-126.99	5,934.18	5,793.44	140.74	42.164	
11,550.00	5,823.75	4,400.00	4,406.00	184.48	174.00	21.175	229.17	-126.99	5,982.02	5,840.61	141.42	42.300	
11,600.00	5,822.04	4,400.00	4,406.00	186.05	174.00	21.175	229.17	-126.99	6,029.90	5,887.81	142.09	42.436	
11,609.91	5,821.71	4,400.00	4,406.00	186.36	174.00	21.175	229.17	-126.99	6,039.40	5,897.17	142.23	42.463	
11,650.00	5,820.34	4,400.00	4,406.00	187.61	174.00	21.175	229.17	-126.99	6,077.81	5,935.05	142.77	42.571	
11,659.94	5,820.00	4,400.00	4,406.00	187.93	174.00	21.175	229.17	-126.99	6,087.34	5,944.44	142.90	42.598	

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



Anticollision Report

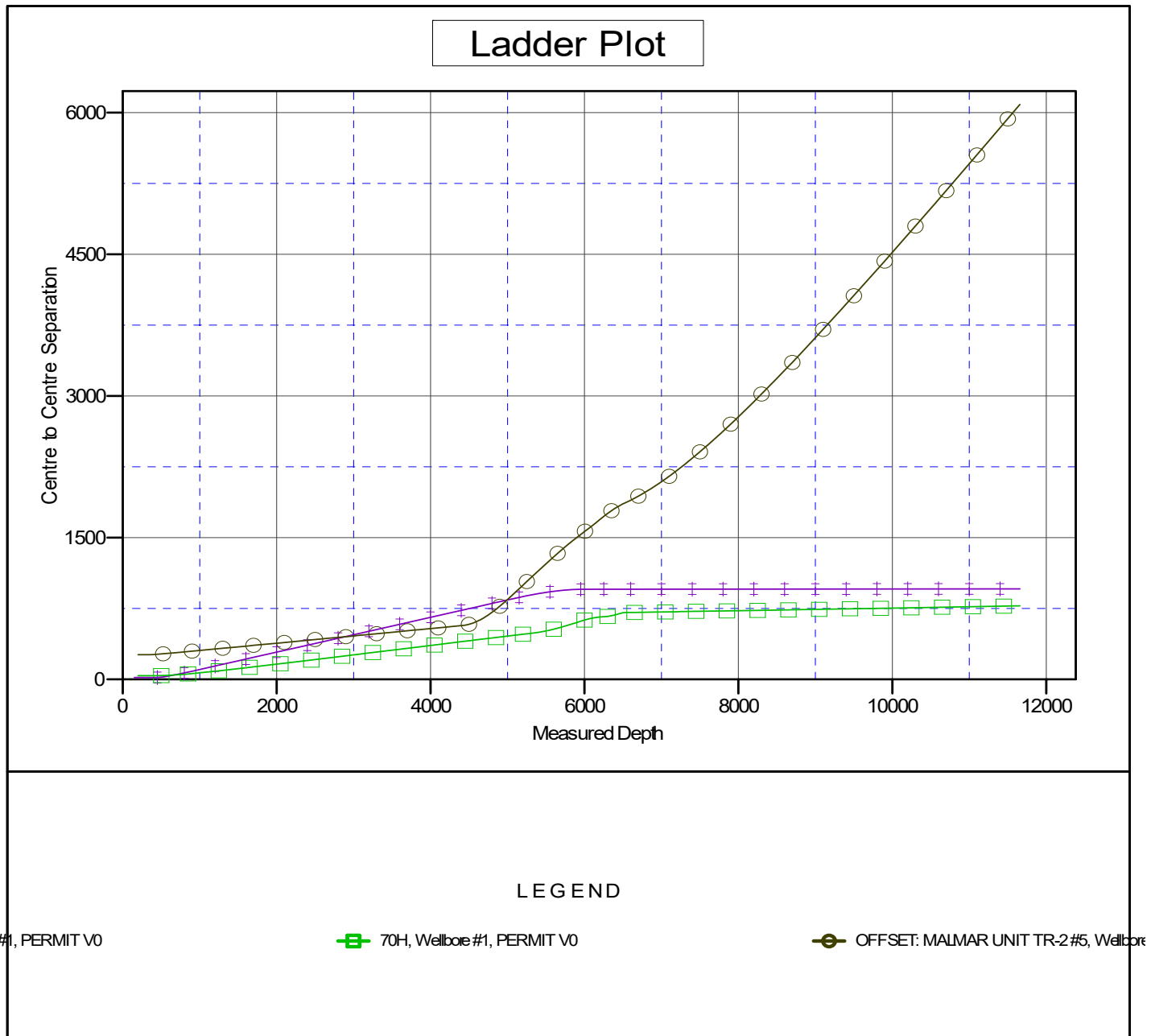
Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 10H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Reference Depths are relative to RKB = 20' @ 4127.00usft (AKITA 57) Coordinates are relative to: 10H

Offset Depths are relative to Offset Datum

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.329°



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

06/29/23 2:42:00PM

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COMPASS 5000.1 Build 74



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 10H
Project:	LEA COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Reference Site:	MILLER 14 FEDERAL COM	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1.13 Single User Db
Reference Design:	PERMIT	Offset TVD Reference:	Reference Datum

Reference Depths are relative to RKB = 20' @ 4127.00usft (AKITA 57) Coordinates are relative to: 10H

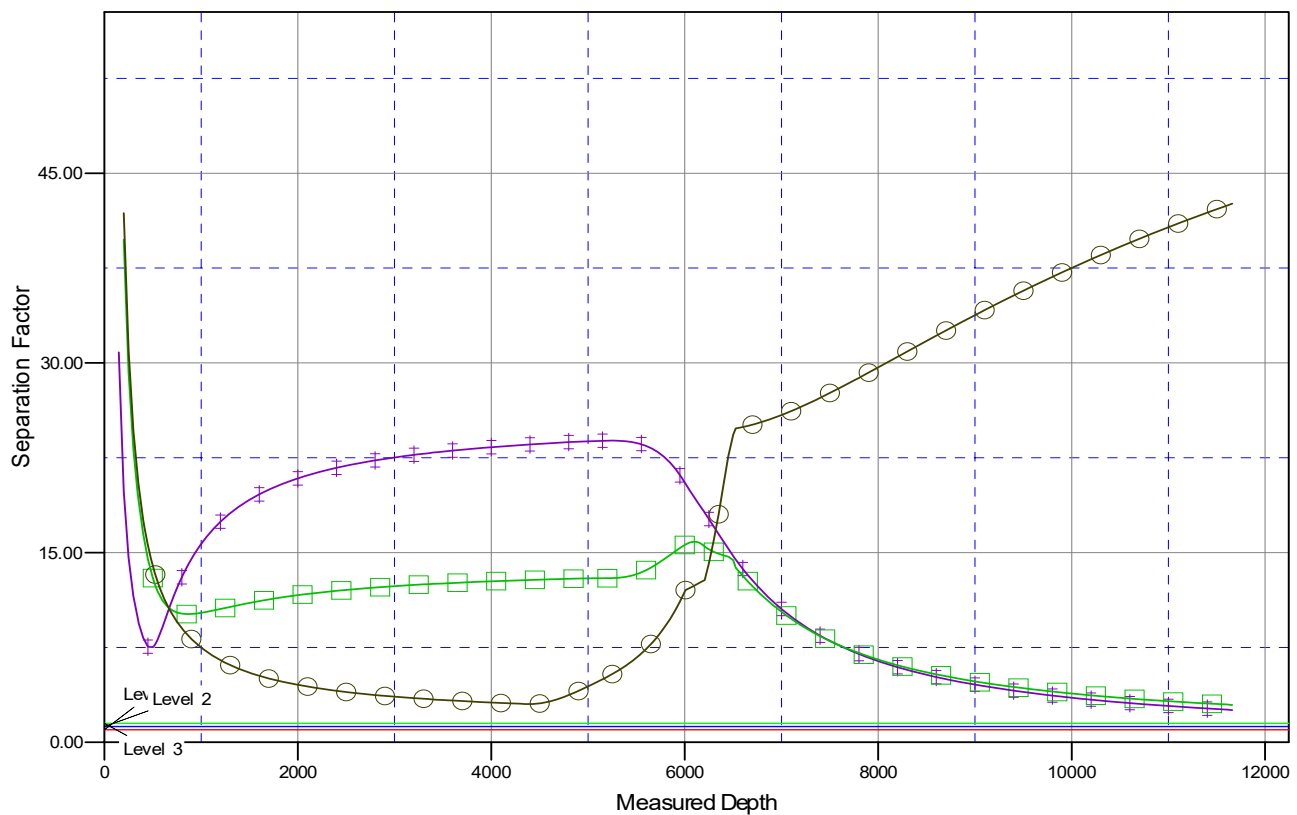
Offset Depths are relative to Offset Datum

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Central Meridian is -104.3333333

Grid Convergence at Surface is: 0.329°

Separation Factor Plot



LEGEND

70H, Wellbore #1, PERMIT V0

70H, Wellbore #1, PERMIT V0

OFFSET: MALMAR UNIT TR-2#5, Wellbore



SPUR ENERGY PARTNERS, LLC

LEA COUNTY, NM (NAD 83 - NME)

MILLER 14 FEDERAL COM

10H

Wellbore #1

Plan: PERMIT

Standard Planning Report

29 June, 2023



Planning Report

Database:	EDM 5000.1.13 Single User Db	Local Co-ordinate Reference:	Well 10H
Company:	SPUR ENERGY PARTNERS, LLC	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Project:	LEA COUNTY, NM (NAD 83 - NME)	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site:	MILLER 14 FEDERAL COM	North Reference:	Grid
Well:	10H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PERMIT		

Project	LEA COUNTY, NM (NAD 83 - NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		MILLER 14 FEDERAL COM			
Site Position:		Northing:	668,311.00 usft	Latitude:	32.8357389
From:	Map	Easting:	727,895.50 usft	Longitude:	-103.7259409
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.329 °

Well	10H					
Well Position	+N/-S	0.00 usft	Northing:	668,311.00 usft	Latitude:	32.8357389
	+E/-W	0.00 usft	Easting:	727,895.50 usft	Longitude:	-103.7259409
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,107.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	06/27/23	6.427	60.363	47,622

Design	PERMIT				
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	269.79	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.000	
525.46	4.51	167.97	525.23	-8.67	1.85	2.00	2.00	0.00	167.968	
4,990.28	4.51	167.97	4,976.23	-351.99	75.02	0.00	0.00	0.00	0.000	
6,007.28	60.00	269.79	5,818.57	-397.04	-403.09	6.00	5.46	10.01	104.307	
6,207.28	60.00	269.79	5,918.57	-397.68	-576.29	0.00	0.00	0.00	0.000	
6,526.82	91.95	269.79	5,995.00	-398.80	-882.30	10.00	10.00	0.00	0.000	MILLER 14 FEDER
11,609.91	91.95	269.79	5,821.71	-417.42	-5,962.40	0.00	0.00	0.00	0.000	MILLER 14 FEDER
11,659.94	91.95	269.79	5,820.00	-417.60	-6,012.40	0.00	0.00	0.00	0.000	MILLER 14 FEDER



Planning Report

Database:	EDM 5000.1.13 Single User Db	Local Co-ordinate Reference:	Well 10H
Company:	SPUR ENERGY PARTNERS, LLC	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Project:	LEA COUNTY, NM (NAD 83 - NME)	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site:	MILLER 14 FEDERAL COM	North Reference:	Grid
Well:	10H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PERMIT		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MILLER 14 FEDERAL COM 10H SHL: 2210' FNL, 785' FWL									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	2.00	167.97	399.98	-1.71	0.36	-0.36	2.00	2.00	0.00
500.00	4.00	167.97	499.84	-6.83	1.45	-1.43	2.00	2.00	0.00
525.46	4.51	167.97	525.23	-8.67	1.85	-1.82	2.00	2.00	0.00
600.00	4.51	167.97	599.54	-14.40	3.07	-3.02	0.00	0.00	0.00
700.00	4.51	167.97	699.23	-22.09	4.71	-4.63	0.00	0.00	0.00
800.00	4.51	167.97	798.92	-29.78	6.35	-6.24	0.00	0.00	0.00
900.00	4.51	167.97	898.61	-37.47	7.99	-7.85	0.00	0.00	0.00
1,000.00	4.51	167.97	998.30	-45.16	9.63	-9.46	0.00	0.00	0.00
1,100.00	4.51	167.97	1,097.99	-52.85	11.26	-11.07	0.00	0.00	0.00
1,200.00	4.51	167.97	1,197.68	-60.54	12.90	-12.68	0.00	0.00	0.00
1,300.00	4.51	167.97	1,297.37	-68.23	14.54	-14.29	0.00	0.00	0.00
1,400.00	4.51	167.97	1,397.06	-75.92	16.18	-15.90	0.00	0.00	0.00
1,500.00	4.51	167.97	1,496.75	-83.61	17.82	-17.51	0.00	0.00	0.00
1,600.00	4.51	167.97	1,596.44	-91.30	19.46	-19.12	0.00	0.00	0.00
1,700.00	4.51	167.97	1,696.13	-98.99	21.10	-20.73	0.00	0.00	0.00
1,800.00	4.51	167.97	1,795.82	-106.68	22.74	-22.35	0.00	0.00	0.00
1,900.00	4.51	167.97	1,895.51	-114.37	24.37	-23.96	0.00	0.00	0.00
2,000.00	4.51	167.97	1,995.20	-122.06	26.01	-25.57	0.00	0.00	0.00
2,100.00	4.51	167.97	2,094.89	-129.74	27.65	-27.18	0.00	0.00	0.00
2,200.00	4.51	167.97	2,194.58	-137.43	29.29	-28.79	0.00	0.00	0.00
2,300.00	4.51	167.97	2,294.27	-145.12	30.93	-30.40	0.00	0.00	0.00
2,400.00	4.51	167.97	2,393.96	-152.81	32.57	-32.01	0.00	0.00	0.00
2,500.00	4.51	167.97	2,493.66	-160.50	34.21	-33.62	0.00	0.00	0.00
2,600.00	4.51	167.97	2,593.35	-168.19	35.85	-35.23	0.00	0.00	0.00
2,700.00	4.51	167.97	2,693.04	-175.88	37.49	-36.84	0.00	0.00	0.00
2,800.00	4.51	167.97	2,792.73	-183.57	39.12	-38.45	0.00	0.00	0.00
2,900.00	4.51	167.97	2,892.42	-191.26	40.76	-40.06	0.00	0.00	0.00
3,000.00	4.51	167.97	2,992.11	-198.95	42.40	-41.67	0.00	0.00	0.00
3,100.00	4.51	167.97	3,091.80	-206.64	44.04	-43.28	0.00	0.00	0.00
3,200.00	4.51	167.97	3,191.49	-214.33	45.68	-44.89	0.00	0.00	0.00
3,300.00	4.51	167.97	3,291.18	-222.02	47.32	-46.50	0.00	0.00	0.00
3,400.00	4.51	167.97	3,390.87	-229.71	48.96	-48.12	0.00	0.00	0.00
3,500.00	4.51	167.97	3,490.56	-237.40	50.60	-49.73	0.00	0.00	0.00
3,600.00	4.51	167.97	3,590.25	-245.08	52.24	-51.34	0.00	0.00	0.00
3,700.00	4.51	167.97	3,689.94	-252.77	53.87	-52.95	0.00	0.00	0.00
3,800.00	4.51	167.97	3,789.63	-260.46	55.51	-54.56	0.00	0.00	0.00
3,900.00	4.51	167.97	3,889.32	-268.15	57.15	-56.17	0.00	0.00	0.00
4,000.00	4.51	167.97	3,989.01	-275.84	58.79	-57.78	0.00	0.00	0.00
4,100.00	4.51	167.97	4,088.70	-283.53	60.43	-59.39	0.00	0.00	0.00
4,200.00	4.51	167.97	4,188.39	-291.22	62.07	-61.00	0.00	0.00	0.00
4,300.00	4.51	167.97	4,288.08	-298.91	63.71	-62.61	0.00	0.00	0.00
4,400.00	4.51	167.97	4,387.77	-306.60	65.35	-64.22	0.00	0.00	0.00
4,500.00	4.51	167.97	4,487.46	-314.29	66.98	-65.83	0.00	0.00	0.00
4,600.00	4.51	167.97	4,587.16	-321.98	68.62	-67.44	0.00	0.00	0.00
4,700.00	4.51	167.97	4,686.85	-329.67	70.26	-69.05	0.00	0.00	0.00
4,800.00	4.51	167.97	4,786.54	-337.36	71.90	-70.66	0.00	0.00	0.00
4,900.00	4.51	167.97	4,886.23	-345.05	73.54	-72.28	0.00	0.00	0.00
4,990.28	4.51	167.97	4,976.23	-351.99	75.02	-73.73	0.00	0.00	0.00
5,000.00	4.40	175.35	4,985.92	-352.73	75.13	-73.84	6.00	-1.11	75.96



Planning Report

Database:	EDM 5000.1.13 Single User Db	Local Co-ordinate Reference:	Well 10H
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Project:	LEA COUNTY, NM (NAD 83 - NME)	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site:	MILLER 14 FEDERAL COM	North Reference:	Grid
Well:	10H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PERMIT		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,050.00	5.02	211.80	5,035.76	-356.50	74.13	-72.83	6.00	1.23	72.91
5,100.00	6.99	233.80	5,085.49	-360.16	70.52	-69.20	6.00	3.96	43.99
5,150.00	9.52	245.22	5,134.97	-363.69	64.31	-62.98	6.00	5.05	22.84
5,200.00	12.26	251.73	5,184.07	-367.09	55.52	-54.17	6.00	5.48	13.04
5,250.00	15.10	255.87	5,232.64	-370.35	44.16	-42.80	6.00	5.68	8.27
5,300.00	17.99	258.71	5,280.57	-373.45	30.27	-28.90	6.00	5.78	5.68
5,350.00	20.91	260.78	5,327.71	-376.39	13.89	-12.51	6.00	5.84	4.15
5,400.00	23.85	262.36	5,373.94	-379.16	-4.94	6.33	6.00	5.88	3.17
5,450.00	26.80	263.62	5,419.13	-381.76	-26.17	27.57	6.00	5.90	2.51
5,500.00	29.76	264.64	5,463.16	-384.17	-49.73	51.14	6.00	5.92	2.04
5,550.00	32.73	265.49	5,505.91	-386.39	-75.56	76.98	6.00	5.93	1.70
5,600.00	35.70	266.21	5,547.25	-388.42	-103.60	105.02	6.00	5.94	1.45
5,650.00	38.68	266.84	5,587.08	-390.25	-133.76	135.19	6.00	5.95	1.25
5,700.00	41.65	267.39	5,625.28	-391.86	-165.97	167.40	6.00	5.96	1.10
5,750.00	44.64	267.88	5,661.76	-393.27	-200.13	201.57	6.00	5.96	0.98
5,800.00	47.62	268.32	5,696.41	-394.46	-236.15	237.59	6.00	5.97	0.88
5,850.00	50.60	268.72	5,729.14	-395.43	-273.93	275.38	6.00	5.97	0.80
5,900.00	53.59	269.09	5,759.85	-396.19	-313.37	314.82	6.00	5.97	0.73
5,950.00	56.58	269.43	5,788.46	-396.71	-354.36	355.81	6.00	5.97	0.68
6,000.00	59.56	269.75	5,814.91	-397.02	-396.79	398.24	6.00	5.98	0.63
6,007.28	60.00	269.79	5,818.57	-397.04	-403.09	404.54	6.00	5.98	0.61
6,100.00	60.00	269.79	5,864.93	-397.34	-483.38	484.83	0.00	0.00	0.00
6,207.28	60.00	269.79	5,918.57	-397.68	-576.29	577.74	0.00	0.00	0.00
6,250.00	64.27	269.79	5,938.53	-397.82	-614.04	615.50	10.00	10.00	0.00
6,300.00	69.27	269.79	5,958.24	-397.99	-659.98	661.43	10.00	10.00	0.00
6,350.00	74.27	269.79	5,973.88	-398.16	-707.45	708.91	10.00	10.00	0.00
6,400.00	79.27	269.79	5,985.32	-398.34	-756.11	757.56	10.00	10.00	0.00
6,450.00	84.27	269.79	5,992.47	-398.52	-805.58	807.03	10.00	10.00	0.00
6,500.00	89.27	269.79	5,995.29	-398.70	-855.48	856.94	10.00	10.00	0.00
6,526.82	91.95	269.79	5,995.00	-398.80	-882.30	883.76	10.00	10.00	0.00
MILLER 14 FEDERAL COM 10H FTP: 100' FEL									
6,600.00	91.95	269.79	5,992.51	-399.07	-955.44	956.89	0.00	0.00	0.00
6,700.00	91.95	269.79	5,989.10	-399.43	-1,055.38	1,056.83	0.00	0.00	0.00
6,800.00	91.95	269.79	5,985.69	-399.80	-1,155.32	1,156.78	0.00	0.00	0.00
6,900.00	91.95	269.79	5,982.28	-400.17	-1,255.26	1,256.72	0.00	0.00	0.00
7,000.00	91.95	269.79	5,978.87	-400.53	-1,355.20	1,356.66	0.00	0.00	0.00
7,100.00	91.95	269.79	5,975.46	-400.90	-1,455.14	1,456.60	0.00	0.00	0.00
7,200.00	91.95	269.79	5,972.05	-401.27	-1,555.08	1,556.54	0.00	0.00	0.00
7,300.00	91.95	269.79	5,968.64	-401.63	-1,655.02	1,656.48	0.00	0.00	0.00
7,400.00	91.95	269.79	5,965.23	-402.00	-1,754.96	1,756.43	0.00	0.00	0.00
7,500.00	91.95	269.79	5,961.82	-402.36	-1,854.91	1,856.37	0.00	0.00	0.00
7,600.00	91.95	269.79	5,958.41	-402.73	-1,954.85	1,956.31	0.00	0.00	0.00
7,700.00	91.95	269.79	5,955.00	-403.10	-2,054.79	2,056.25	0.00	0.00	0.00
7,800.00	91.95	269.79	5,951.59	-403.46	-2,154.73	2,156.19	0.00	0.00	0.00
7,900.00	91.95	269.79	5,948.19	-403.83	-2,254.67	2,256.14	0.00	0.00	0.00
8,000.00	91.95	269.79	5,944.78	-404.20	-2,354.61	2,356.08	0.00	0.00	0.00
8,100.00	91.95	269.79	5,941.37	-404.56	-2,454.55	2,456.02	0.00	0.00	0.00
8,200.00	91.95	269.79	5,937.96	-404.93	-2,554.49	2,555.96	0.00	0.00	0.00
8,300.00	91.95	269.79	5,934.55	-405.29	-2,654.44	2,655.90	0.00	0.00	0.00
8,400.00	91.95	269.79	5,931.14	-405.66	-2,754.38	2,755.85	0.00	0.00	0.00
8,500.00	91.95	269.79	5,927.73	-406.03	-2,854.32	2,855.79	0.00	0.00	0.00
8,600.00	91.95	269.79	5,924.32	-406.39	-2,954.26	2,955.73	0.00	0.00	0.00
8,700.00	91.95	269.79	5,920.91	-406.76	-3,054.20	3,055.67	0.00	0.00	0.00



Planning Report

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Project:	LEA COUNTY, NM (NAD 83 - NME)	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site:	MILLER 14 FEDERAL COM	North Reference:	Grid
Well:	10H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PERMIT		

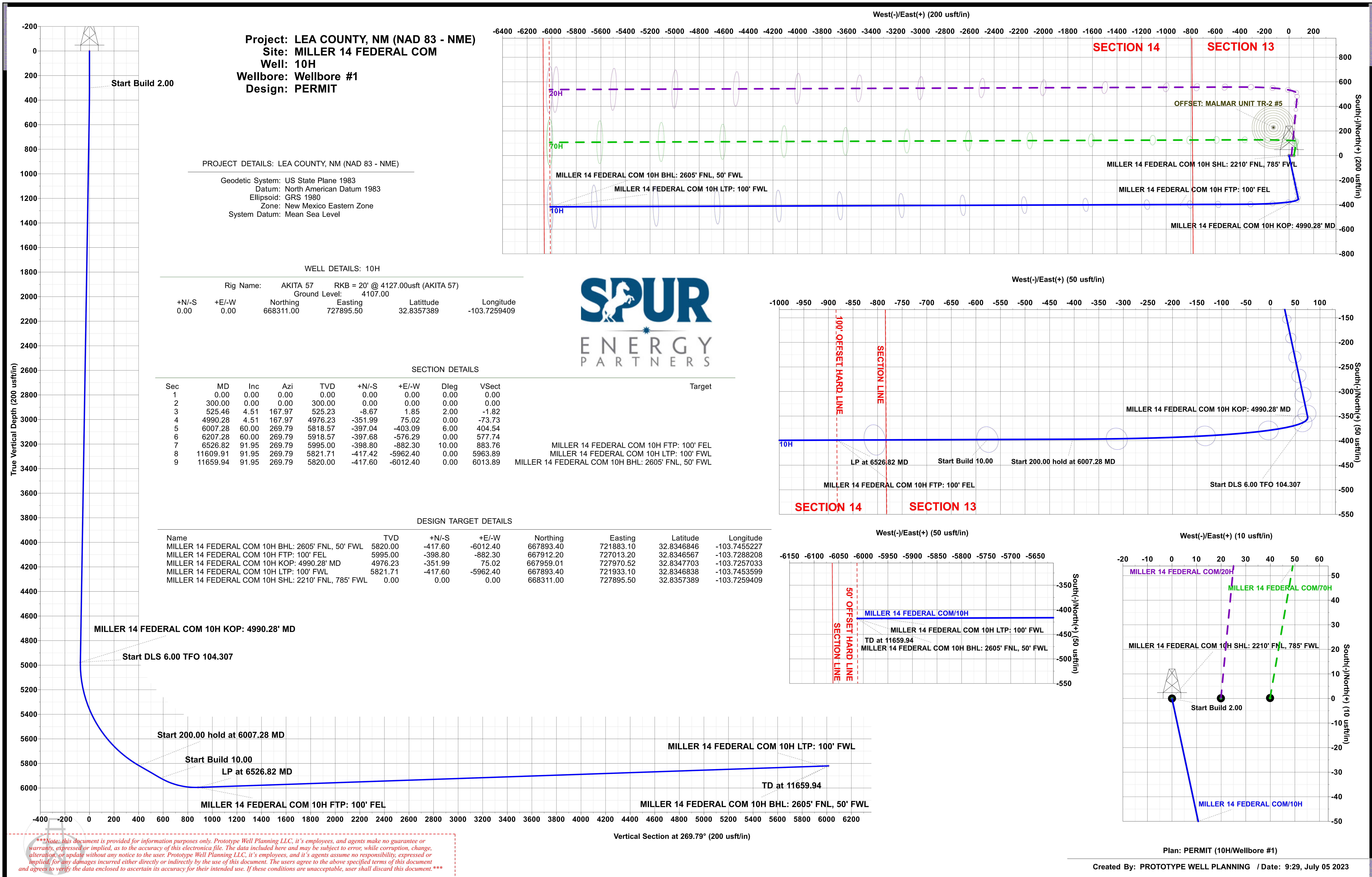
Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,800.00	91.95	269.79	5,917.50	-407.13	-3,154.14	3,155.61	0.00	0.00	0.00
8,900.00	91.95	269.79	5,914.09	-407.49	-3,254.08	3,255.55	0.00	0.00	0.00
9,000.00	91.95	269.79	5,910.68	-407.86	-3,354.02	3,355.50	0.00	0.00	0.00
9,100.00	91.95	269.79	5,907.27	-408.22	-3,453.97	3,455.44	0.00	0.00	0.00
9,200.00	91.95	269.79	5,903.87	-408.59	-3,553.91	3,555.38	0.00	0.00	0.00
9,300.00	91.95	269.79	5,900.46	-408.96	-3,653.85	3,655.32	0.00	0.00	0.00
9,400.00	91.95	269.79	5,897.05	-409.32	-3,753.79	3,755.26	0.00	0.00	0.00
9,500.00	91.95	269.79	5,893.64	-409.69	-3,853.73	3,855.21	0.00	0.00	0.00
9,600.00	91.95	269.79	5,890.23	-410.06	-3,953.67	3,955.15	0.00	0.00	0.00
9,700.00	91.95	269.79	5,886.82	-410.42	-4,053.61	4,055.09	0.00	0.00	0.00
9,800.00	91.95	269.79	5,883.41	-410.79	-4,153.55	4,155.03	0.00	0.00	0.00
9,900.00	91.95	269.79	5,880.00	-411.15	-4,253.49	4,254.97	0.00	0.00	0.00
10,000.00	91.95	269.79	5,876.59	-411.52	-4,353.44	4,354.92	0.00	0.00	0.00
10,100.00	91.95	269.79	5,873.18	-411.89	-4,453.38	4,454.86	0.00	0.00	0.00
10,200.00	91.95	269.79	5,869.77	-412.25	-4,553.32	4,554.80	0.00	0.00	0.00
10,300.00	91.95	269.79	5,866.36	-412.62	-4,653.26	4,654.74	0.00	0.00	0.00
10,400.00	91.95	269.79	5,862.95	-412.99	-4,753.20	4,754.68	0.00	0.00	0.00
10,500.00	91.95	269.79	5,859.55	-413.35	-4,853.14	4,854.62	0.00	0.00	0.00
10,600.00	91.95	269.79	5,856.14	-413.72	-4,953.08	4,954.57	0.00	0.00	0.00
10,700.00	91.95	269.79	5,852.73	-414.08	-5,053.02	5,054.51	0.00	0.00	0.00
10,800.00	91.95	269.79	5,849.32	-414.45	-5,152.97	5,154.45	0.00	0.00	0.00
10,900.00	91.95	269.79	5,845.91	-414.82	-5,252.91	5,254.39	0.00	0.00	0.00
11,000.00	91.95	269.79	5,842.50	-415.18	-5,352.85	5,354.33	0.00	0.00	0.00
11,100.00	91.95	269.79	5,839.09	-415.55	-5,452.79	5,454.28	0.00	0.00	0.00
11,200.00	91.95	269.79	5,835.68	-415.92	-5,552.73	5,554.22	0.00	0.00	0.00
11,300.00	91.95	269.79	5,832.27	-416.28	-5,652.67	5,654.16	0.00	0.00	0.00
11,400.00	91.95	269.79	5,828.86	-416.65	-5,752.61	5,754.10	0.00	0.00	0.00
11,500.00	91.95	269.79	5,825.45	-417.01	-5,852.55	5,854.04	0.00	0.00	0.00
11,609.91	91.95	269.79	5,821.71	-417.42	-5,962.40	5,963.89	0.00	0.00	0.00
MILLER 14 FEDERAL COM 10H LTP: 100' FWL									
11,659.94	91.95	269.79	5,820.00	-417.60	-6,012.40	6,013.89	0.00	0.00	0.00
MILLER 14 FEDERAL COM 10H BHL: 2605' FNL, 50' FWL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
MILLER 14 FEDERAL - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	668,311.00	727,895.50	32.8357389	-103.7259409
MILLER 14 FEDERAL - plan hits target center - Point	0.00	0.00	5,820.00	-417.60	-6,012.40	667,893.40	721,883.10	32.8346846	-103.7455227
MILLER 14 FEDERAL - plan misses target center by 0.18usft at 11609.91usft MD (5821.71 TVD, -417.42 N, -5962.40 E) - Point	0.00	0.00	5,821.71	-417.60	-5,962.40	667,893.40	721,933.10	32.8346838	-103.7453599
MILLER 14 FEDERAL - plan hits target center - Point	0.00	0.00	5,995.00	-398.80	-882.30	667,912.20	727,013.20	32.8346567	-103.7288208



Planning Report

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Company:	SPUR ENERGY PARTNERS, LLC	TVD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Project:	LEA COUNTY, NM (NAD 83 - NME)	MD Reference:	RKB = 20' @ 4127.00usft (AKITA 57)
Site:	MILLER 14 FEDERAL COM	North Reference:	Grid
Well:	10H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PERMIT		



Pecos District

Application for Permit to Drill

Conditions of Approval

Geology Concerns

Potash	☒ None	☐ Secretary	☐ R-111-P
Cave/Karst	☐ Medium	☐ High	☐ Critical
H2S	☐ None	☐ Below 100 PPM	☒ Above 100 PPM
Other	☐ 4 String Area	☐ Capitan Reef	☐ SWD Well

Note: The geology of the area where the well is being drilled determines the COAs that apply, not the above table.

Additional Engineering Requirements

Surface casing must be set at: 1,175 feet

Intermediate casing must be set at: 2,992 feet

General Requirements

1. Changes to the approved APD casing program need prior approval.
2. The Bureau of Land Management (BLM) will be notified in advance for a representative to witness:
 - a. Well spudding (minimum of 24 hours notice)
 - b. Setting and/or cementing of all casing strings (minimum of 4 hours notice)
 - c. BOPE tests (minimum of 4 hours notice)

Eddy County

620 East Greene Street, Carlsbad, NM 88220

(575) 361-2822

BLM_NM_CFO_DrillingNotifications@BLM.GOV

Lea County

414 West Taylor, Hobbs, NM 88240

(575) 689-5981

3. The initial wellhead installed on the well will remain on the well with spools used as needed.
4. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

- a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig:
 - i. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with a Spudder Rig:
 - i. Notify the BLM when moving in and removing the Spudder Rig.
 - ii. Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - iii. BOP/BOPE test to be conducted per 43 CFR 3172.6 as soon as 2nd Rig is rigged up on well.
5. Floor controls are required for 3M or greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller, and will always be operational during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table or the area immediately above the substructure on which the draw works are located (this does not include the doghouse or stairway area).
6. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

Pressure Control

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in 43 CFR 3172.6 and API STD 53 Sec. 5.3.
2. 5M or higher systems require an HCR valve, remote kill line, and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
3. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE, and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
 - b. The results of the test shall be reported to the appropriate BLM office.
 - c. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

- d. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
 - e. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per 43 CFR 3172.6(b)(9).
 - f. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - g. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, no tests shall commence until the cement has had a minimum of 24 hours setup time.
 - h. The tests shall be done by an independent service company utilizing a test plug, not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to 43 CFR 3172 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
4. If the operator has proposed using a 5,000 (5M) Annular on a 10M BOP:
- a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 10,000 (10M) psi.
5. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
- a. Wellhead shall be installed by manufacturer's representatives (submit documentation with subsequent sundry).

- b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172 must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed, and another wellhead installed.
6. If a variance is approved for break testing the BOPE, the following requirements apply:
- a. BOPE break testing is only approved for a BOP rated at 5M or less.
 - b. Approval is only for the intermediate hole sections, so long as those sections do not go deeper than the Bone Springs formation.
 - c. The Annular Preventer must be tested to a minimum of 70% of BOPE working pressure and shall be higher than the MASP.
 - d. A full BOP test shall be performed every 21 days (at a minimum).
 - e. A full BOP test is required prior to drilling the first intermediate hole section (if applicable). If any subsequent intermediate hole interval is deeper than the first, a full BOP test shall be required (a maximum 200 foot difference in true vertical depth (TVD) is allowed).
 - f. BOPE break testing is not permitted for drilling the production hole section.
 - g. While in transfer, the BOP shall be secured by the hydraulic carrier or cradle.
 - h. If any repairs or replacements of the BOPE is required, the BOPE shall be tested as required by 43 CFR 3172.
 - i. Pressure tests shall be performed on any BOPE components that have been disconnected. A low pressure (250-300 psi) and a high pressure (BOP max pressure rating) test are required.
 - j. If a testing plug is used, pressure shall be maintained for at least 10 minutes. If there is any bleed off in pressure, the test shall be considered to have failed.
 - k. If no testing plug is used, pressure shall be maintained for at least 30 minutes. If there is a decline in pressure of more than 10 percent, the test shall be considered to have failed.
 - l. The appropriate Bureau of Land Management (BLM) office shall be notified a minimum of 4 hours before testing occurs.
 - m. Any well control event while drilling require notification to the BLM Petroleum Engineer (575-706-2779) prior to the commencement of any BOPE Break Testing operations.
 - n. If break testing is not used, then a full BOPE test shall be conducted.
7. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply:
- a. The flex line must meet the requirements of API 16C.

- b. Check condition of flexible line from BOP to choke manifold (replace if exterior is damaged or if line fails test).
- c. Line is to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements.
- d. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating.
- e. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, shall be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

Casing and Cement

1. Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.).
2. On any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. The formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
3. Provide compressive strengths (including hours to reach required 500 pounds compressive strength) prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
4. The surface casing shall be set at a minimum of 25 feet into the Rustler Anhydrite and 80 feet above the salt and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of 8 hours (or 24 hours in the Potash Area) or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.

5. Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.
6. Intermediate casing must be cemented to surface. For medium/high cave/karst, potash, and Capitan Reef, wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.
7. The production cement should tie-back at least 200 feet (500 feet in Secretary Potash, surface in R-111-P potash) into previous casing string. Operator shall provide method of verification.
8. Production liner cement should tie-back at least 100 feet into previous casing string. Operator shall provide verification of cement top.
9. In WIPP Areas, cement must come to surface on the first three casing strings.
10. If cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
11. No pea gravel permitted for remedial cement or fall back remedial cement without prior authorization from a BLM petroleum engineer.
12. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
13. DV tools:
 - a. First stage to DV tool (The DV tool may be cancelled if cement circulates to surface on the first stage):
 - i. Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
 - b. Second stage above DV tool:
 - i. For intermediate casing, cement to surface.
 - ii. For production casing, cement should tie-back at least 200 feet (500 feet in Secretary Potash, surface in R-111-P potash) into previous casing string. Operator shall provide method of verification.
 - iii. If cement does not circulate, contact the appropriate BLM office.

14. Potash Areas:

- a. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.
- b. After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met:
 - i. Cement reaches a minimum compressive strength of 500 psi for all cement blends
 - ii. Until cement has been in place at least 24 hours.
- c. WOC time will be recorded in the driller's log.
- d. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.
- e. In R111 Potash Areas, if cement does not circulate to surface on the first two salt protection casing strings, the cement on the 3rd casing salt string must come to surface.
- f. In Secretary Potash Areas, if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

15. Wait on cement (WOC) for Water Basin:

- a. After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met:
 - i. Cement reaches a minimum compressive strength of 500 psi at the shoe
 - ii. Until cement has been in place at least 8 hours.
- b. WOC time will be recorded in the driller's log.

16. Medium/High/Critical Cave/Karst Areas:

- a. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.
- b. In Critical Cave/Karst Areas cement must come to surface on the first three casing strings.
- c. In Medium and High Cave/Karst Areas, if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
- d. In Critical Cave/Karst Areas, if cement does not circulate to surface on the first three casing strings, the cement on the 4th casing string must come to surface.

Drilling Mud

1. Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation and shall be used until production casing is run and cemented.

Waste Material and Fluids

1. All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and

disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

2. Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

Special Requirements

1. Communitization Agreement
 - a. The operator will submit a Communitization Agreement to the Santa Fe Office (301 Dinosaur Trail, Santa Fe, NM 87508), at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division.
 - b. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
 - i. The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in 43 CFR 3171 and 3172.
 - ii. If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
 - c. In addition, the well sign shall include the surface and bottom hole lease numbers.
 - i. When the Communitization Agreement number is known, it shall also be on the sign.
2. Unit Wells
 - a. The well sign for a unit well shall include the unit number in addition to the surface and bottom hole lease numbers. This also applies to participating area numbers.
 - i. If a participating area has not been established, the operator can use the general unit designation, but will replace the unit number with the participating area number when the sign is replaced.
 - b. Commercial Well Determination
 - i. A commercial well determination shall be submitted after production has been established for at least six months (this is not necessary for secondary recovery unit wells).
3. Hydrogen Sulfide (H₂S)
 - a. If H₂S is encountered, provide measured values and formations to the BLM.
 - b. An H₂S area must meet 43 CFR 3176 requirements, which includes equipment and personnel/public protection items.

- c. An H2S Drilling Plan shall be activated 500 feet prior to drilling into any formation designated as having H2S.
 - d. Hydrogen Sulfide monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet 43 CFR 3176 requirements, which includes equipment and personnel/public protection items.
4. Capitan Reef
- a. If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following (Use this for 3 string wells in the Capitan Reef, if it is a 4 string well ensure fresh water based mud is used across the Capitan interval):
 - i. Switch to fresh water mud to protect the Capitan Reef and use fresh water mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.
 - ii. Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by 0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports.
 - iii. The daily drilling report should show mud volume per shift/tour.
 - iv. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval.
 - v. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.
5. Salt Water Disposal Wells
- a. The operator shall supply the BLM with a copy of a mudlog over the permitted disposal interval and estimated in situ water salinity based on open-hole logs.
 - b. If hydrocarbons are encountered while drilling, the operator shall notify the BLM.
 - c. The operator shall provide to the BLM a summary of formation depth picks based on mudlog and geophysical logs along with a copy of the mudlog and open-hole logs from total depth to top of Devonian.
 - d. An NOI sundry with the completion procedure for this well shall be submitted and approved prior to commencing completion work. The procedure will be reviewed to verify that the completion proposal will allow the operator to:
 - i. Properly evaluate the injection zone utilizing open-hole logs, swab testing and/or any other method to confirm that hydrocarbons cannot be produced in paying quantities. This evaluation shall be reviewed by the BLM prior to injection commencing.
 - ii. Restrict the injection fluid to the approved formation.
 - iii. If a step rate test will be run, an NOI sundry shall be submitted to the BLM for approval.

- e. If off-lease water will be disposed in this well, the operator shall provide proof of right-of-way approval.
6. WIPP Requirements
- a. If the proposed surface well or bottom hole is located within 330 feet of the WIPP Land Withdrawal Area boundary:
 - i. Daily drilling reports, logs, and deviation survey information are required to be submitted to the Bureau of Land Management Engineering Department and the U.S. Department of Energy (per requirements of the Joint Powers Agreement) until a total vertical depth of 7,000 feet is reached. These reports will have at a minimum the rate of penetration and a clearly marked section showing the deviation for each 500-foot interval. Operator may be required to do more frequent deviation surveys based on the daily information submitted and may be required to take other corrective measures.
 - ii. Information will also be provided to the New Mexico Oil Conservation Division after drilling activities have been completed.
 - iii. Upon completion of the well, the operator shall submit a complete directional survey.
 - iv. Any future entry into the well for purposes of completing additional drilling will require supplemental information.
 - b. Required information shall be emailed to OilGasReports@wipp.ws.
 - i. Attached files must not be greater than 20 MB.
 - ii. Call WIPP Tech Support at 575-234-7422, during the hours of 7:00am to 4:30pm, if there are any issues sending to this address.

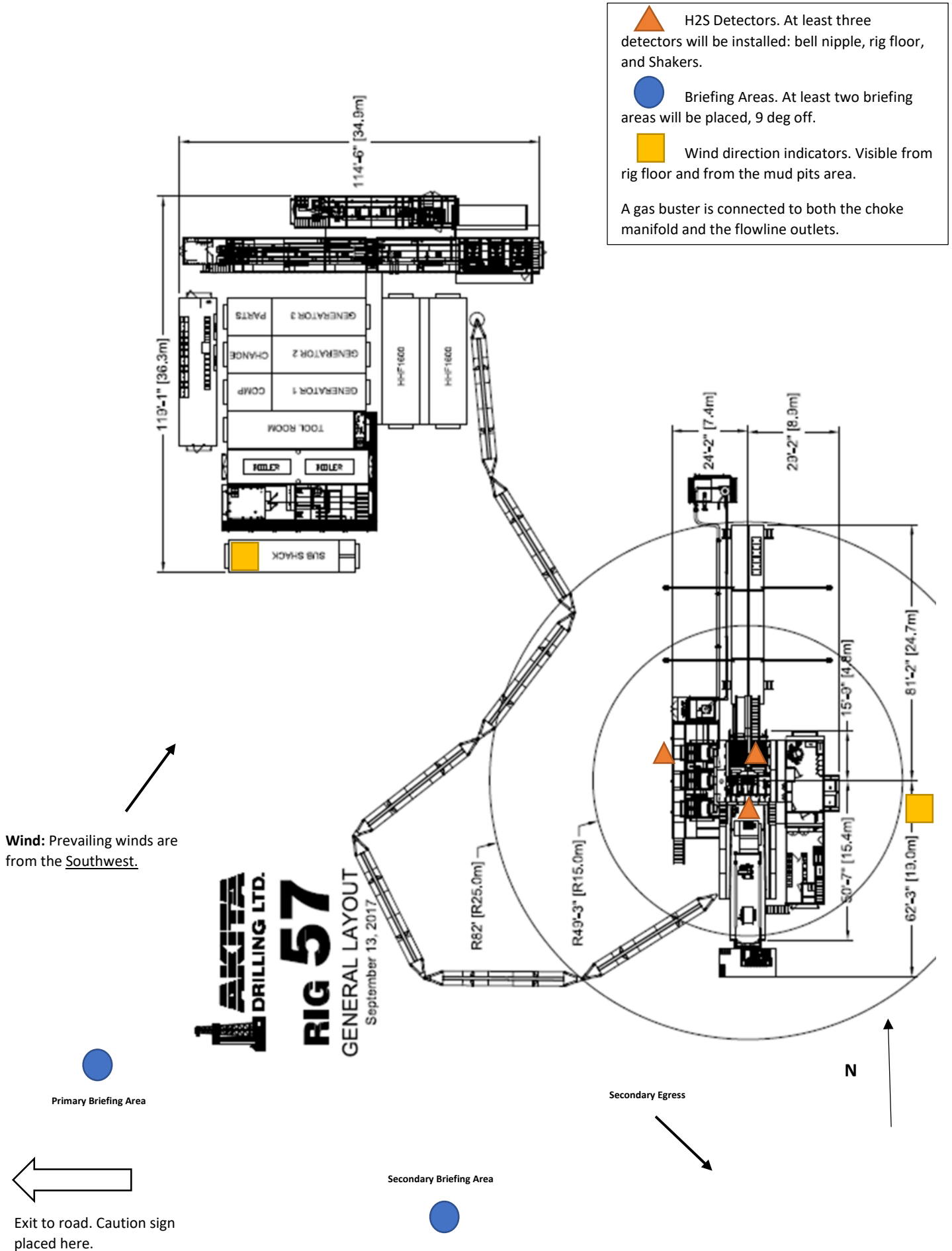


Permian Drilling Hydrogen Sulfide Drilling Operations Plan Miller 14 Federal Com

Open drill site. No homes or buildings are near the proposed location.

1. Escape

Personnel shall escape upwind of wellbore in the event of an emergency gas release. Escape can take place through the lease road on the Southeast side of the location. Personnel need to move to a safe distance and block the entrance to location. If the primary route is not an option due to the wind direction, then a secondary egress route should be taken.





RIG # 57_{1,150 HP Double Mast Drilling Rig}

SUBSTRUCTURE

One Piece Step Down

Floor Height: 18' 9" (on 4' pony sub moving system)

Clear Height (beneath rotary beams): 15' 5"

Rotary Capacity: 400,000 lbf

Max Pipe Setback: 400,000 lbf

Note: All floor heights above are based on the substructure sitting on 6" mats & 4' pony sub moving system

MAST

106' telescoping, Drill Line: 1-1/8"

Static Hook Load: 440,000 lbf

Racking Capacity: 18,000' of 4" DP, 12,500' of 5" DP

DRAWWORKS

TSM 850 425,000lbs w/ 10 Lines

Input Power: 1,150 hp AC traction motor

Main Brake: 1,150 hp AC traction motor (Dynamic)

Aux Parking Brake: Eaton brake & drum / band brake system

TOP DRIVE

Tesco EXI 600 AC 350 Ton: Max speed 220 rpm,

Continuous Drill Torque: 30,000 ft-lbs

Max Torque (Make / Break): 45,000 ft-lbs

600 hp AC induction motor & drive system with PLC

250 Ton 5 x 36" Becket Block Assembly

IRON ROUGHNECK

NOV ST-90C Conn Range: 4 1/4" to 8 1/2"

Spin Speed: 75 rpm nominal on 5" drill pipe

Spin Torque: 1,750 ft-lbs

Maximum Make-up torque: 60,000 ft-lbs

Maximum Break-out torque: 80,000 ft-lbs

ROTARY TABLE

National 27 1/2" 500 Ton with hydraulic drive to position tools only

27 1/2" Diameter opening

POWER SYSTEM

VFD, MCC, Eaton Drives, Current Power Systems Controls, three Caterpillar C32 gen sets, 1220 BHP.

MUD PUMP #1

HHF1600 Triplex Rated Power: 1600 hp

Stroke: 12"

Input Power: 1500 hp AC traction motor

Pressure Rating: 5000 psi

MUD PUMP #2

HHF1600 Triplex Rated Power: 1600 hp

Stroke: 12"

Input Power: 1500 hp AC traction motor

Pressure Rating: 5000 psi

MUD TANKS

Two Tank system w/ 1200 bbls total capacity

Shakers: Three MI Swaco Mongoose 4 panel dual motion

Mud Gas Separator: MI Swaco 4' OD x 12' tall

Pill Tank: 54 bbls

MUD SYSTEM

5000 psi Max Pressure

5" Main plumbing and standpipe

SCALPING TANK

Main Tank: 186 bbls capacity

Trip Tank: 24 bbls capacity

Shakers: Three NOV Venom shakers dual motion

BOP (NACE)

11" x 5000 psi WP Spherical Annular

11" x 5000 psi WP Double Ram

11" x 5000 psi WP Single Ram (Optional)

MANIFOLD

3-1/8" 5,000 psi c/w two 3 1/8" manual chokes

ACCUMULATOR

CTI: 160 gal 6 station 3000 psi, c/w N2 Backup & electric triplex pump

CATWALK

Ja-co Power Catwalk, tubular max length 47' 6", max OD 13 5/8", max weight 10,000lbs

TUBULARS

Drill Pipe: Supplied as needed, per availability

Drill Collars & heavywate: Supplied as needed, per availability

MISC.

Water Tank: 409 bbls; Fuel Tank 189 bbls; Screw Compressor

Boiler: 125 hp with Full Winterization

MOVING SYSTEM:

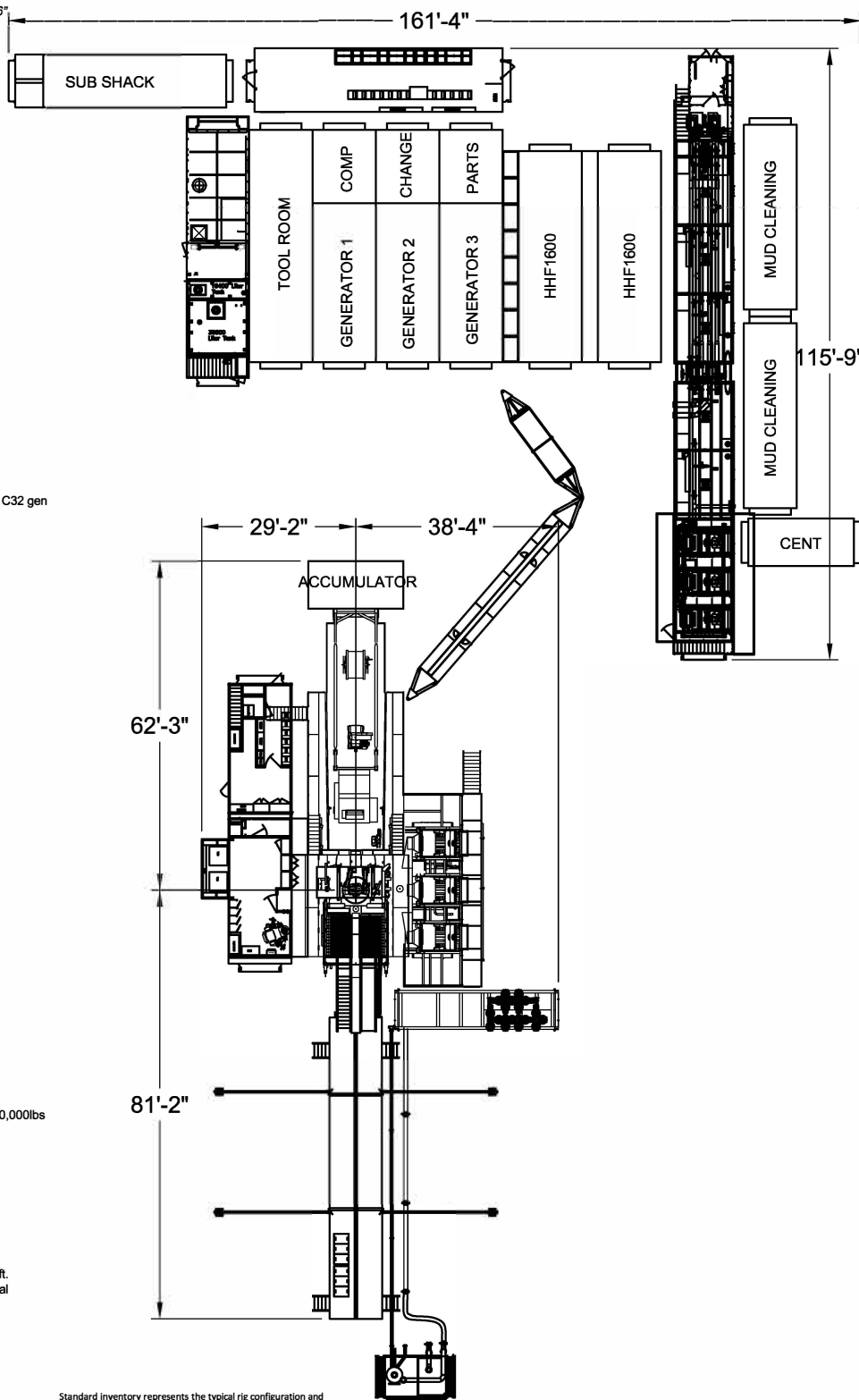
Walking beam hydraulic pony sub moving system for linear motion & side shift.

350' of Utility Suitcase style [50' lengths] connection for hydraulic and electrical supply.

TOOL/ STORAGE/ CAMP

Parts Storage Room and Tool House Room

Rig Manage Trailer: 14' x 44' skid mounted



Standard inventory represents the typical rig configuration and inventory available, but specifications are subject to slight modifications from time to time due to customer requirements.

All ratings quoted herein are manufacturer specifications. AKITA's normal operating parameters are 90% of manufacturer mast ratings and 80% of mud pump manufacturer pressure rating. Operation of rig equipment beyond these parameters requires approval from AKITA field office management.

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TRANSCEND RIG 4	Contractor Specification
Make	Schram
Model	TXD 130
Year of Manufacture	2006
Truck Mounted	YES
Rated Drilling Depth	130,000# hook load
Rated Depth with Tubing	
Derrick Height	69' 9"
Derrick Type	Telescoping Hydraulic
Derrick Capacity	130,000#
Elevators	N/A
Drawworks	760 HP Detroit
Wire Diameter	Hydraulic
Workfloor Max Height	8'
Tongs	Hydraulic Iron Roughneck
Slips	Manual Slips
Included Tubing Handling Tools	• 13 3/8" handling tools
Included Rod Handling Tools	85jts of 4.5" drill pipe
BOP Class Compatibility	
Weight Indicator	Hydraulic
Rig Safety Equipment	Eye wash station, fire extengushers, wind sock
Pad Size Requirements/Limitations	60' x 60'
Guy Line Spacing	N/A
Other Supplied Rig Equipment	Standard Rig Hand Tools: • (2) 36" pipe wrenches • (2) 24" pipe wrenches • (2) 18" pipe wrenches • (1) 24" crescent wrench • (2) 12" crescent wrenches • (1) 4 lb shop hammer • (1) 12 lb sledge hammer • (1) 4 foot pry bar • Vehicles for Contractor personnel • Air Impact Wrench with Sockets • Mud Scales (as needed) 1- F800 pump 1- Pill pit 80bbl 1- 400 bbl mud mix 1- Shaker 150mesh 1- 500 bbl fresh water frac tank

Intent ☐ As Drilled ☐

API #		
Operator Name:	Property Name:	Well Number

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude			NAD	

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude			NAD	

Last Take Point (LTP)

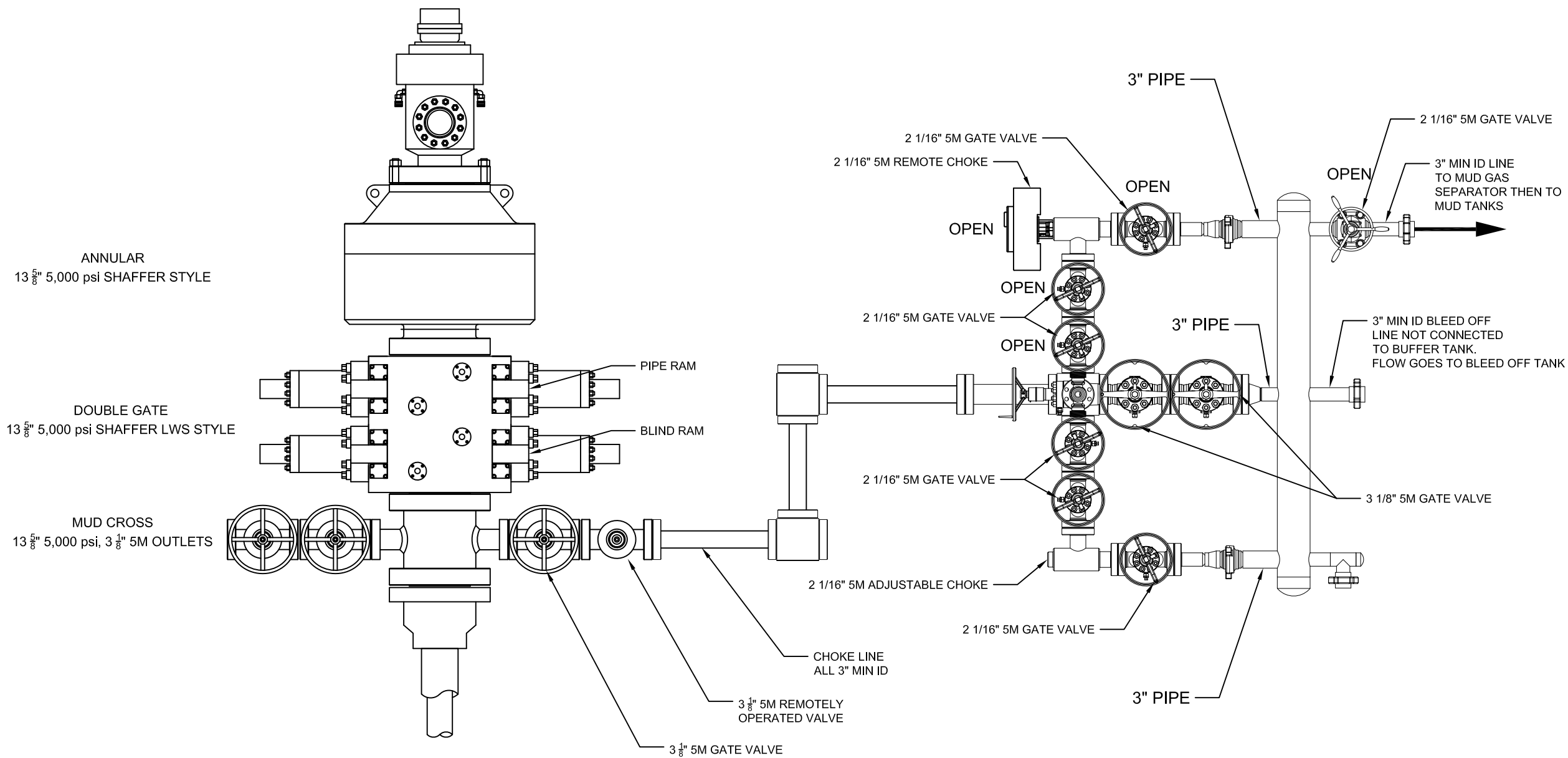
UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude			NAD	

Is this well the defining well for the Horizontal Spacing Unit? ☐Is this well an infill well? ☐

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #		
Operator Name:	Property Name:	Well Number

KZ 06/29/2018



Notes
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-
-

No.	Revision	Date



AKITA
DRILLING LTD.
2302 8th Street, Nisku Alberta
T9E 7Z2 Tel: (780) 955-6700

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Date	5-6-2021	Scale	NTS
Des / Chk'd By	BG	File Name	R57 13 5M dou..
Project	R57		

RIG 57 BOP SCHEMATIC

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

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

CONDITIONS

Action 324753

CONDITIONS

Operator: Spur Energy Partners LLC 9655 Katy Freeway Houston, TX 77024	OGRID: 328947
	Action Number: 324753
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
pkautz	Will require a File As Drilled C-102 and a Directional Survey with the C-104	3/20/2024
pkautz	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	3/20/2024
pkautz	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	3/20/2024
pkautz	Cement is required to circulate on both surface and intermediate1 strings of casing	3/20/2024
pkautz	If cement does not circulate on any string, a CBL is required for that string of casing	3/20/2024