

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

Form C-101

August 1, 2011

Permit 346371

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1. Operator Name and Address Spur Energy Partners LLC 9655 Katy Freeway Houston, TX 77024		2. OGRID Number 328947
		3. API Number 30-015-54023
4. Property Code 334569	5. Property Name WELCH CD 28 STATE COM	6. Well No. 020H

7. Surface Location

UL - Lot L	Section 27	Township 17S	Range 28E	Lot Idn	Feet From 2143	N/S Line S	Feet From 605	E/W Line W	County Eddy
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8. Proposed Bottom Hole Location

UL - Lot L	Section 28	Township 17S	Range 28E	Lot Idn L	Feet From 2010	N/S Line S	Feet From 50	E/W Line W	County Eddy
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9. Pool Information

ARTESIA; GLORIETA-YESO (O)	96830
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Additional Well Information

11. Work Type New Well	12. Well Type OIL	13. Cable/Rotary	14. Lease Type State	15. Ground Level Elevation 3681
16. Multiple N	17. Proposed Depth 9420	18. Formation Paddock	19. Contractor	20. Spud Date 11/10/2023
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

☒ We will be using a closed-loop system in lieu of lined pits

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	12.25	9.625	36	1150	336	0
Prod	8.75	7	32	4100	1523	0
Prod	8.75	5.5	20	9420	1523	0

Casing/Cement Program: Additional Comments

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22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Ram	5	5000	SHAFFER

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief.
I further certify I have complied with 19.15.14.9 (A) NMAC ☒ and/or 19.15.14.9 (B) NMAC ☒ if applicable.

Signature:

Printed Name: Electronically filed by Sarah Chapman

Title: Regulatory Director

Email Address: schapman@spurenergy.com

Date: 7/31/2023

Phone: 832-930-8613

OIL CONSERVATION DIVISION

Approved By: Ward Rikala

Title:

Approved Date: 8/1/2023

Expiration Date: 8/1/2025

Conditions of Approval Attached

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-54023	² Pool Code 96830	³ Pool Name ARTESIA; GLORIETA-YESO (O)
⁴ Property Code 334569	⁵ Property Name WELCH CD 28 STATE COM	⁶ Well Number 20H
⁷ OGRID NO. 328947	⁸ Operator Name SPUR ENERGY PARTNERS LLC.	⁹ Elevation 3681'

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
L	27	17S	28E		2143	SOUTH	605	WEST	EDDY

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
L	28	17S	28E		2010	SOUTH	50	WEST	EDDY
¹² Dedicated Acres 320	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.						

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 GEODETIC DATA NAD 83 GRID - NM EAST SURFACE LOCATION (SL) N: 656384.3 - E: 591369.4 LAT: 32.8043245° N LONG: 104.1704965° W FIRST TAKE POINT (FTP) 2010' FSL & 100' FEL - SEC 28 N: 656241.8 - E: 590662.8 LAT: 32.8039359° N LONG: 104.1727968° W LAST TAKE POINT (LTP) 2010' FSL & 100' FWL - SEC 28 N: 656115.9 - E: 585667.2 LAT: 32.8036097° N LONG: 104.1890563° W BOTTOM HOLE (BH) N: 656114.7 - E: 585617.2 LAT: 32.8036064° N LONG: 104.1892189° W CORNER DATA NAD 83 GRID - NM EAST A: FOUND BRASS CAP "1941" N: 654104.0 - E: 585547.5 B: FOUND BRASS CAP "1941" N: 656702.1 - E: 585573.1 C: FOUND BRASS CAP "1941" N: 659297.8 - E: 585602.6 D: FOUND BRASS CAP "1941" N: 659377.1 - E: 588198.9 E: FOUND BRASS CAP "1941" N: 659457.7 - E: 590794.9 F: FOUND BRASS CAP "1941" N: 659466.8 - E: 593406.4 G: FOUND BRASS CAP "1941" N: 659475.1 - E: 596017.9 H: FOUND BRASS CAP "1941" N: 656886.5 - E: 595997.7 I: FOUND BRASS CAP "1941" N: 654298.0 - E: 595977.3 J: FOUND BRASS CAP "1941" N: 654266.7 - E: 593360.1 K: FOUND BRASS CAP "1941" N: 654235.0 - E: 590741.9 L: FOUND BRASS CAP "1941" N: 654169.8 - E: 588139.7 M: FOUND BRASS CAP "1941" N: 656846.0 - E: 590769.0	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> 03/07/2023 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. 12/15/2022 Date of Survey Signature and Seal of Professional Surveyor 14400 Certificate Number 01/11/2023 LS22121333
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Form APD Conditions

Permit 346371

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address: Spur Energy Partners LLC [328947] 9655 Katy Freeway Houston, TX 77024	API Number: 30-015-54023
	Well: WELCH CD 28 STATE COM #020H

OCD Reviewer	Condition
ward.rikala	Notify OCD 24 hours prior to casing & cement
ward.rikala	Will require a File As Drilled C-102 and a Directional Survey with the C-104
ward.rikala	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
ward.rikala	Cement is required to circulate on both surface and intermediate1 strings of casing
ward.rikala	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
ward.rikala	The Operator is to notify NMOCD by sundry (Form C-103) within ten (10) days of the well being spud
ward.rikala	Spur Energy needs to rename this well to conform to NMOCD naming convention.

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

Spur Energy Partners LLC – Welch CD 28 State Com 20H

1. Geologic Formations

TVD of Target	3,750'
MD at TD	9,420'

Formation	Depth	Lithology	Expected Fluids
Quaternary	0'	Dolomite, other: Caliche	Useable Water
Tansill	415'	Sandstone, Dolomite	None
Yates	495'	Dolomite, Limestone, Shale, Siltstone	None
Seven Rivers	755'	Dolomite, Limestone	Natural Gas, Oil
Queen	1330'	Anhydrite, Dolomite, Sandstone	Natural Gas, Oil
Grayburg	1745'	Anhydrite	Natural Gas, Oil
San Andres	2020'	Dolomite	Natural Gas, Oil
Glorieta	3475'	Dolomite, Siltstone	Natural Gas, Oil
Paddock	3580'	Dolomite, Limestone	Natural Gas, Oil
Upper Blinebry	4085'	Dolomite, Limestone	Natural Gas, Oil
Lower Blinebry	4550'	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	Joint SF
		From (ft)	To (ft)					Collapse		Tension	Tension
Seven Rivers	12.25	0	1150	9.625	36	J-55	BTC	1.125	1.2	1.4	1.4
N/A	8.75	0	4100	7	32	L-80	BK-HT	1.125	1.2	1.4	1.4
Yeso	8.75	4100	9420	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 – Welch CD 28 State Com 20H

	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?	
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 (Lead)	0	950	100%
Surface (Tail)	950	1150	100%
Production (Lead)	0	3100	100%
Production (Tail)	3100	9420	25%

Casing String	# Sks	Wt. (lb/gal)	Yld (ft3/sack)	H2O (gal/sk)	500# Comp. Strength (hours)	Slurry Description
Surface (Lead)	259	12	2.4	13.48	8:12	Clas C Premium Plus Cement
Surface (Tail)	77	13.2	1.87	9.92	6:59	Clas C Premium Plus Cement
Production (Lead)	322	11.4	2.42	15.29	N/A	Clas C Premium Plus Cement
Production (Tail)	1201	13.2	1.56	9.81	N/A	Clas C Premium Plus Cement

Spur Energy Partners LLC – Welch CD 28 State Com 20H

4. Pressure Control Equipment

Spur Energy Partners LLC variance for flex hose

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	1782 psi
Abnormal Temperature	No
BH Temperature at deepest TVD	111°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.

Spur Energy Partners LLC – Welch CD 28 State Com 20H

Y	Are anchors required by manufacturer?
	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.

5. BOP Break Testing Request

Spur Energy Partners LLC requests permission to adjust the BOP break testing requirements as follows:

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	1150	Water-Based Mud	8.6-8.9	32-36	N/C
1150	9420	Water-Based Mud	8.6-8.9	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 – Welch CD 28 State Com 20H

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	SCP - 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: 868.3 bbls.

Spur Energy Partners LLC – Welch CD 28 State Com 20H**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 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, 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

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

Submit Electronically
Via E-permitting

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 / 31 / 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
WELCH CD 28 SA STATE COM 10H	30-015-	L-27-17S-28E	2124' FSL 598' FWL	262 BBL/D	453 MCF/D	1570 BBL/D
WELCH CD 28 STATE COM 20H	30-015-	L-27-17S-28F	2143' FSL 605' FWL	313 BBL/D	342 MCF/D	1564 BBL/D
WELCH CD 28 STATE COM 70H	30-015-	L-27-17S-28E	2106 FSL 591' FWL	310 BBL/D	500 MCF/D	1242 BBL/D
WELCH CD 28 STATE COM 90H	30-015-	L-27-17S-28F	2161 FSL 612' FWL	310 BBL/D	500 MCF/D	1242 BBL/D

IV. Central Delivery Point Name: WELCH CD 28 STATE COM 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
WELCH CD 28 SA STATE COM 10H	30-015-	10/24/2023	11/01/2023	01/22/2024	02/29/2024	03/28/2024
WELCH CD 28 STATE COM 20H	30-015-	11/02/2023	11/10/2023	01/22/2024	02/29/2024	03/28/2024
WELCH CD 28 STATE COM 70H	30-015-	11/11/2023	11/19/2023	01/22/2024	02/29/2024	03/28/2024
WELCH CD 28 STATE COM 90H	30-015-	11/20/2023	11/28/2023	01/22/2024	02/29/2024	03/28/2024

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:	07/31/2023
Phone:	832-930-8613
OIL CONSERVATION DIVISION (Only applicable when submitted as a standalone form)	
Approved By:	
Title:	
Approval Date:	
Conditions of Approval:	



Permian Drilling
Hydrogen Sulfide Drilling Operations Plan
Welch CD 28 State Com Development

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

1. Escape

Personnel shall escape upwind of wellbore in the even 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 secondary egress route should be taken.





SPUR ENERGY PARTNERS, LLC

**EDDY COUNTY, NM (NAD 83 - NME)
WELCH CD 28 STATE COM
20H**

**Wellbore #1
PERMIT**

Anticollision Report

20 March, 2023



Anticollision Report

Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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 10.00
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	03/20/23
From (usft)	To (usft)	Survey (Wellbore)
0.00	9,420.28	PERMIT (Wellbore #1)
		Tool Name
		MWD+IFR1+SAG+FDIR
		Description
		OWSG MWD + IFR1 + Sag + FDIR Correction

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offet Well - Wellbore - Design						
HALBERD 27 STATE COM						
50H - Wellbore #1 - Wellbore #1						Out of range
51H - Wellbore #1 - Wellbore #1	4,283.97	9,926.00	626.86	555.36	8.768	CC, ES
51H - Wellbore #1 - Wellbore #1	4,350.00	9,926.00	632.41	560.16	8.753	SF
71H - Wellbore #1 - Wellbore #1	4,282.17	10,063.00	747.39	632.49	6.505	CC, ES
71H - Wellbore #1 - Wellbore #1	4,372.09	10,063.00	758.18	641.26	6.485	SF
72H - Wellbore #1 - Wellbore #1						Out of range
90H - Wellbore #1 - Wellbore #1						Out of range
WELCH B 28 FED						
10H - Wellbore #1 - PERMIT	9,396.24	9,340.71	735.33	602.79	5.548	CC
10H - Wellbore #1 - PERMIT	9,400.00	9,340.71	735.34	602.76	5.546	ES
10H - Wellbore #1 - PERMIT	9,420.28	9,340.71	735.72	602.92	5.540	SF
70H - Wellbore #1 - PERMIT						Out of range
WELCH CD 28 STATE COM						
10H - Wellbore #1 - PERMIT	7,150.00	7,097.12	810.57	729.05	9.944	CC
10H - Wellbore #1 - PERMIT	9,420.28	9,367.29	813.71	683.84	6.266	ES, SF
21H - Wellbore #1 - PERMIT						Out of range
50H - Wellbore #1 - PERMIT	6,500.00	6,852.04	600.30	540.19	9.986	CC
50H - Wellbore #1 - PERMIT	9,400.00	9,749.87	610.28	498.09	5.440	ES
50H - Wellbore #1 - PERMIT	9,420.28	9,749.87	610.76	498.38	5.435	SF
51H - Wellbore #1 - PERMIT						Out of range
70H - Wellbore #1 - PERMIT	1,200.00	1,199.04	80.66	72.58	9.987	CC, ES
70H - Wellbore #1 - PERMIT	9,420.28	10,036.05	728.66	641.35	8.346	SF
91H - Wellbore #1 - PERMIT						Out of range
OFFSET: COLLIER STATE 2 - Wellbore #1 - Wellbore #						Out of range
OFFSET: COLLIER STATE 3 - Wellbore #1 - Wellbore #						Out of range
OFFSET: COLLIER STATE 4 - Wellbore #1 - Wellbore #						Out of range
OFFSET: COLLIER-STATE 1 - Wellbore #1 - Wellbore #						Out of range
OFFSET: DELHI `B` STATE 4 - Wellbore #1 - Wellbore #						Out of range
OFFSET: DELHI B STATE 3 - Wellbore #1 - Wellbore #1						Out of range
OFFSET: DELHI-STATE B 2 - Wellbore #1 - Wellbore #1						Out of range
OFFSET: ELK STATE 1 - Wellbore #1 - Wellbore #1						Out of range
OFFSET: GERONIMO `27` STATE COM 2 - Wellbore #1						Out of range
OFFSET: GERONIMO `28` STATE COM 1 - Wellbore #1	6,091.63	3,820.08	508.39	401.29	4.747	CC
OFFSET: GERONIMO `28` STATE COM 1 - Wellbore #1	6,100.00	3,819.91	508.46	401.27	4.744	ES, SF
OFFSET: GERONIMO 28 STATE SWD 2 - Wellbore #1 -	4,958.00	3,846.47	126.89	33.92	1.365	Level 3, CC, ES, 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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Separation Factor	Warning
WELCH CD 28 STATE COM						
OFFSET: HALBERD 27 STATE 3H - Wellbore #1 - Wellb	3,891.94	8,462.00	955.32	794.72	5.949	CC
OFFSET: HALBERD 27 STATE 3H - Wellbore #1 - Wellb	3,900.00	8,462.00	955.36	794.72	5.947	ES, SF
OFFSET: HALBERD 27 STATE COM 1H - Wellbore #1 -	3,979.30	8,810.00	1,103.27	930.16	6.373	CC, ES
OFFSET: HALBERD 27 STATE COM 1H - Wellbore #1 -	4,000.00	8,810.00	1,103.46	930.26	6.371	SF
OFFSET: HANOVER STATE #3 14 - Wellbore #1 - Wellb						Out of range
OFFSET: KERSEY WILLIAMS A FEDERAL 10 - Wellbor						Out of range
OFFSET: KERSEY WILLIAMS A FEDERAL 7 - Wellbore						Out of range
OFFSET: MALOOF STATE 1 - Wellbore #1 - Wellbore #1						Out of range
OFFSET: OXY SPARKY FEDERAL 1 - Wellbore #1 - We						Out of range
OFFSET: PAN AMERICAN-TE B 1 - Wellbore #1 - Wellb						Out of range
OFFSET: PHILLIPS N G STATE 17 - Wellbore #1 - Wellb						Out of range
OFFSET: PHILLIPS N G STATE 31 - Wellbore #1 - Wellb						Out of range
OFFSET: PHILLIPS N G STATE 8 - Wellbore #1 - Wellb						Out of range
OFFSET: PHILLIPS STATE /NG/ 11 - Wellbore #1 - Well						Out of range
OFFSET: PHILLIPS STATE N G 14 - Wellbore #1 - Wellb						Out of range
OFFSET: RED LAKE 28 K STATE 1 - Wellbore #1 - Wel	7,832.04	3,755.00	359.04	239.64	3.007	CC, ES
OFFSET: RED LAKE 28 K STATE 1 - Wellbore #1 - Wel	7,850.00	3,755.00	359.49	239.90	3.006	SF
OFFSET: Red Lake 28 K State 2 - Wellbore #1 - Wellbor	7,146.82	3,754.09	301.68	192.74	2.769	CC
OFFSET: Red Lake 28 K State 2 - Wellbore #1 - Wellbor	7,150.00	3,754.03	301.69	192.73	2.769	ES, SF
OFFSET: RED LAKE 28 K STATE 3 - Wellbore #1 - Wel	7,807.56	3,735.00	301.58	185.93	2.608	CC, ES, SF
OFFSET: RED LAKE 28 K STATE 4 - Wellbore #1 - Wel	7,170.92	3,785.59	358.47	256.02	3.499	CC, ES, SF
OFFSET: RED LAKE 28 N STATE 1 - Wellbore #1 - Wel						Out of range
OFFSET: RED LAKE 28 N STATE 2 - Wellbore #1 - Wel	7,812.41	3,760.00	1,058.73	944.08	9.235	CC, ES
OFFSET: RED LAKE 28 N STATE 2 - Wellbore #1 - Wel	7,900.00	3,760.00	1,062.35	946.75	9.190	SF
OFFSET: RED LAKE 28 N STATE 3 - Wellbore #1 - Wel						Out of range
OFFSET: RED LAKE 28 N STATE 4 - Wellbore #1 - Wel	7,194.99	3,747.18	1,018.61	905.82	9.031	CC
OFFSET: RED LAKE 28 N STATE 4 - Wellbore #1 - Wel	7,200.00	3,747.08	1,018.62	905.78	9.027	ES
OFFSET: RED LAKE 28 N STATE 4 - Wellbore #1 - Wel	7,300.00	3,745.10	1,024.01	910.14	8.993	SF
OFFSET: SAN JUAN-STATE 1 - Wellbore #1 - Wellbore	8,714.58	3,754.69	1,209.61	1,080.15	9.343	CC, ES
OFFSET: SAN JUAN-STATE 1 - Wellbore #1 - Wellbore	8,850.00	3,752.01	1,217.17	1,086.27	9.299	SF
OFFSET: STATE /B/ 2 - Wellbore #1 - Wellbore #1						Out of range
OFFSET: STATE 2 - Wellbore #1 - Wellbore #1						Out of range
OFFSET: STATE-FEDERAL GAS C 1 - Wellbore #1 - We						Out of range
OFFSET: SUNRAY-STATE 1 - Wellbore #1 - Wellbore #1	2,973.60	2,953.36	409.36	351.58	7.085	CC
OFFSET: SUNRAY-STATE 1 - Wellbore #1 - Wellbore #1	3,000.00	2,979.51	409.50	351.16	7.020	ES
OFFSET: SUNRAY-STATE 1 - Wellbore #1 - Wellbore #1	3,200.00	3,172.78	421.40	359.20	6.775	SF
OFFSET: TIGNER STATE 1 - Wellbore #1 - Wellbore #1	8,471.73	3,550.00	347.58	241.94	3.290	CC, ES, SF
OFFSET: TIGNER STATE 2 - Wellbore #1 - Wellbore #1	9,106.89	3,535.00	406.58	289.76	3.480	CC, ES, SF
OFFSET: TIGNER STATE 3 - Wellbore #1 - Wellbore #1	9,129.82	3,665.00	303.96	170.37	2.275	CC, ES, SF
OFFSET: TIGNER STATE 4 - Wellbore #1 - Wellbore #1	8,491.98	3,660.00	311.76	189.39	2.548	CC, ES
OFFSET: TIGNER STATE 4 - Wellbore #1 - Wellbore #1	8,500.00	3,660.00	311.86	189.41	2.547	SF
OFFSET: WELCH RL STATE 1 - Wellbore #1 - Wellbore	9,011.90	3,505.00	893.13	771.53	7.345	CC, ES
OFFSET: WELCH RL STATE 1 - Wellbore #1 - Wellbore	9,100.00	3,505.00	897.47	774.92	7.323	SF
OFFSET: WELCH RL STATE 14 - Wellbore #1 - Wellbor	7,127.30	3,660.00	887.09	777.12	8.067	CC, ES
OFFSET: WELCH RL STATE 14 - Wellbore #1 - Wellbor	7,200.00	3,660.00	890.06	779.33	8.038	SF
OFFSET: WELCH RL STATE 2 - Wellbore #1 - Wellbore	7,790.18	3,535.00	898.74	785.66	7.948	CC
OFFSET: WELCH RL STATE 2 - Wellbore #1 - Wellbore	7,800.00	3,535.00	898.79	785.61	7.941	ES
OFFSET: WELCH RL STATE 2 - Wellbore #1 - Wellbore	7,850.00	3,535.00	900.73	787.01	7.921	SF
OFFSET: WELCH RL STATE 20 - Wellbore #1 - Wellbor						Out of range
OFFSET: WELCH RL STATE 21 - Wellbore #1 - Wellbor	8,473.11	3,650.00	925.14	795.71	7.148	CC, ES
OFFSET: WELCH RL STATE 21 - Wellbore #1 - Wellbor	8,550.00	3,650.00	928.33	798.06	7.126	SF
OFFSET: WELCH RL STATE 5 - Wellbore #1 - Wellbore						Out of range
OFFSET: WILLIAMS KERSEY A FEDERAL 6 - Wellbore						Out of range

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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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

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						
WELCH CD 28 STATE COM						
OFFSET: WILLIAMS KERSEY A FEDERAL 9 - Wellbore	6,510.83	3,655.00	919.72	814.63	8.751	CC, ES
OFFSET: WILLIAMS KERSEY A FEDERAL 9 - Wellbore	6,600.00	3,655.00	924.03	818.02	8.716	SF
SA 10H - Wellbore #1 - PERMIT	350.00	349.87	20.20	18.14	9.773	CC, ES
SA 10H - Wellbore #1 - PERMIT	650.00	648.88	28.10	23.94	6.753	SF

Offset Design HALBERD 27 STATE COM - 51H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 173-												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis			Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
4,050.00	3,767.98	9,767.89	4,197.90	14.23	65.43	-125.09	-654.34	-401.45	674.38	606.82	67.56	9.981	
4,060.74	3,773.35	9,777.56	4,197.40	14.29	65.53	-124.69	-654.71	-411.11	670.76	602.80	67.96	9.870	
4,100.00	3,791.80	9,811.09	4,195.64	14.50	65.90	-124.44	-656.01	-444.56	658.50	589.82	68.68	9.588	
4,150.00	3,811.79	9,855.59	4,193.21	14.77	66.38	-124.01	-657.81	-488.95	645.52	575.82	69.70	9.262	
4,200.00	3,827.71	9,902.00	4,190.63	15.06	66.88	-123.53	-659.73	-535.26	635.36	564.58	70.78	8.977	
4,250.00	3,839.44	9,926.00	4,189.30	15.34	67.15	-123.54	-660.72	-559.20	628.34	556.99	71.34	8.807	
4,283.97	3,844.98	9,926.00	4,189.30	15.54	67.15	-123.66	-660.72	-559.20	626.86	555.36	71.50	8.768	CC, ES
4,300.00	3,846.90	9,926.00	4,189.30	15.63	67.15	-123.63	-660.72	-559.20	627.19	555.56	71.63	8.757	
4,350.00	3,850.01	9,926.00	4,189.30	15.92	67.15	-123.19	-660.72	-559.20	632.41	560.16	72.25	8.753	SF
4,372.09	3,850.00	9,926.00	4,189.30	16.05	67.15	-122.82	-660.72	-559.20	636.71	564.07	72.64	8.765	
4,400.00	3,849.45	9,926.00	4,189.30	16.21	67.15	-122.82	-660.72	-559.20	643.47	570.68	72.79	8.840	
4,450.00	3,848.46	9,926.00	4,189.30	16.53	67.15	-122.82	-660.72	-559.20	658.36	585.29	73.07	9.010	
4,500.00	3,847.47	9,926.00	4,189.30	16.84	67.15	-122.82	-660.72	-559.20	676.63	603.28	73.35	9.225	
4,550.00	3,846.48	9,926.00	4,189.30	17.18	67.15	-122.82	-660.72	-559.20	698.01	624.36	73.65	9.477	
4,600.00	3,845.49	9,926.00	4,189.30	17.52	67.15	-122.82	-660.72	-559.20	722.23	648.27	73.96	9.766	

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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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 HALBERD 27 STATE COM - 71H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 148-, 1179-												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 Tooface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
3,700.00	3,581.68	9,645.60	4,422.43	12.69	144.14	144.40	330.70	-132.17	957.52	859.54	97.98	9.772	
3,750.00	3,612.56	9,676.02	4,421.39	12.87	144.93	144.59	331.00	-162.58	930.20	832.00	98.20	9.473	
3,800.00	3,641.33	9,708.21	4,420.59	13.07	145.78	144.68	331.32	-194.75	905.26	806.58	98.68	9.174	
3,850.00	3,667.93	9,744.00	4,420.08	13.28	146.72	144.64	331.70	-230.54	882.77	783.27	99.50	8.872	
3,860.74	3,673.35	9,750.69	4,420.02	13.32	146.89	144.65	331.77	-237.23	878.26	778.63	99.63	8.815	
3,900.00	3,692.98	9,783.91	4,419.77	13.49	147.76	143.87	332.10	-270.44	862.06	760.25	101.81	8.467	
3,950.00	3,717.98	9,826.32	4,419.54	13.73	148.88	142.85	332.43	-312.85	841.68	737.01	104.67	8.041	
4,000.00	3,742.98	9,869.00	4,419.40	13.97	150.00	141.78	332.67	-355.53	821.60	713.97	107.63	7.633	
4,050.00	3,767.98	9,912.37	4,419.35	14.23	151.14	140.66	332.83	-398.90	801.83	691.09	110.74	7.241	
4,060.74	3,773.35	9,921.72	4,419.34	14.29	151.38	140.41	332.85	-408.25	797.61	686.19	111.42	7.159	
4,100.00	3,791.80	9,956.59	4,419.33	14.50	152.30	140.53	332.90	-443.13	783.29	671.09	112.20	6.981	
4,150.00	3,811.79	10,002.68	4,419.37	14.77	153.51	140.57	332.87	-489.21	768.08	654.68	113.41	6.773	
4,200.00	3,827.71	10,050.07	4,419.43	15.06	154.75	140.53	332.80	-536.60	756.30	641.54	114.76	6.590	
4,250.00	3,839.44	10,063.00	4,419.45	15.34	155.09	140.83	332.78	-549.53	748.78	633.96	114.82	6.521	
4,282.17	3,844.73	10,063.00	4,419.45	15.53	155.09	140.92	332.78	-549.53	747.39	632.49	114.90	6.505 CC, ES	
4,300.00	3,846.90	10,063.00	4,419.45	15.63	155.09	140.89	332.78	-549.53	747.82	632.73	115.09	6.498	
4,350.00	3,850.01	10,063.00	4,419.45	15.92	155.09	140.52	332.78	-549.53	753.55	637.38	116.17	6.487	
4,372.09	3,850.00	10,063.00	4,419.45	16.05	155.09	140.22	332.78	-549.53	758.18	641.26	116.92	6.485 SF	
4,400.00	3,849.45	10,063.00	4,419.45	16.21	155.09	140.22	332.78	-549.53	765.29	648.25	117.04	6.539	
4,450.00	3,848.46	10,063.00	4,419.45	16.53	155.09	140.22	332.78	-549.53	780.38	663.10	117.28	6.654	
4,500.00	3,847.47	10,063.00	4,419.45	16.84	155.09	140.22	332.78	-549.53	798.31	680.80	117.51	6.793	
4,550.00	3,846.48	10,063.00	4,419.45	17.18	155.09	140.22	332.78	-549.53	818.91	701.15	117.76	6.954	
4,600.00	3,845.49	10,063.00	4,419.45	17.52	155.09	140.22	332.78	-549.53	841.98	723.96	118.02	7.134	
4,650.00	3,844.49	10,063.00	4,419.45	17.88	155.09	140.22	332.78	-549.53	867.32	749.04	118.28	7.333	
4,700.00	3,843.50	10,063.00	4,419.45	18.24	155.09	140.22	332.78	-549.53	894.74	776.19	118.55	7.547	
4,750.00	3,842.51	10,063.00	4,419.45	18.62	155.09	140.22	332.78	-549.53	924.05	805.22	118.83	7.776	
4,800.00	3,841.52	10,063.00	4,419.45	19.00	155.09	140.22	332.78	-549.53	955.08	835.98	119.11	8.019	
4,850.00	3,840.53	10,063.00	4,419.45	19.40	155.09	140.22	332.78	-549.53	987.67	868.28	119.40	8.272	
4,900.00	3,839.54	10,063.00	4,419.45	19.80	155.09	140.22	332.78	-549.53	1,021.67	901.98	119.69	8.536	
4,950.00	3,838.55	10,063.00	4,419.45	20.21	155.09	140.22	332.78	-549.53	1,056.94	936.95	119.99	8.808	
5,000.00	3,837.56	10,063.00	4,419.45	20.63	155.09	140.22	332.78	-549.53	1,093.36	973.07	120.29	9.089	
5,050.00	3,836.57	10,063.00	4,419.45	21.05	155.09	140.22	332.78	-549.53	1,130.82	1,010.22	120.60	9.376	
5,100.00	3,835.58	10,063.00	4,419.45	21.48	155.09	140.22	332.78	-549.53	1,169.22	1,048.30	120.91	9.670	
5,150.00	3,834.59	10,063.00	4,419.45	21.92	155.09	140.22	332.78	-549.53	1,208.46	1,087.23	121.23	9.968	

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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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 WELCH B 28 FED - 10H - Wellbore #1 - PERMIT												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+SAG+FDIR												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	
6,800.00	3,801.91	6,749.37	3,692.80	38.20	39.18	81.67	540.51	-3,154.87	752.40	676.13	76.28	9.864	
6,850.00	3,800.91	6,799.37	3,692.20	38.73	39.70	81.69	538.97	-3,204.84	752.07	674.74	77.33	9.725	
6,900.00	3,799.92	6,849.36	3,691.61	39.26	40.23	81.72	537.43	-3,254.81	751.74	673.35	78.39	9.590	
6,950.00	3,798.93	6,899.36	3,691.01	39.78	40.76	81.75	535.89	-3,304.78	751.40	671.96	79.44	9.458	
7,000.00	3,797.94	6,949.36	3,690.42	40.31	41.29	81.77	534.36	-3,354.75	751.07	670.57	80.50	9.330	
7,050.00	3,796.95	6,999.36	3,689.82	40.84	41.82	81.80	532.82	-3,404.72	750.74	669.17	81.57	9.204	
7,100.00	3,795.96	7,049.36	3,689.23	41.37	42.35	81.83	531.28	-3,454.69	750.41	667.78	82.63	9.082	
7,150.00	3,794.97	7,099.35	3,688.64	41.90	42.89	81.86	529.74	-3,504.66	750.07	666.38	83.69	8.962	
7,200.00	3,793.98	7,149.35	3,688.04	42.43	43.42	81.88	528.21	-3,554.63	749.74	664.98	84.76	8.846	
7,250.00	3,792.99	7,199.35	3,687.45	42.97	43.95	81.91	526.67	-3,604.60	749.41	663.58	85.83	8.732	
7,300.00	3,792.00	7,249.35	3,686.85	43.50	44.49	81.94	525.13	-3,654.57	749.08	662.18	86.90	8.620	
7,350.00	3,791.01	7,299.34	3,686.26	44.03	45.02	81.96	523.59	-3,704.54	748.74	660.78	87.97	8.512	
7,400.00	3,790.02	7,349.34	3,685.67	44.57	45.56	81.99	522.05	-3,754.51	748.41	659.37	89.04	8.405	
7,450.00	3,789.03	7,399.34	3,685.07	45.11	46.10	82.02	520.52	-3,804.48	748.08	657.97	90.11	8.302	
7,500.00	3,788.04	7,449.34	3,684.48	45.64	46.63	82.04	518.98	-3,854.45	747.75	656.56	91.19	8.200	
7,550.00	3,787.05	7,499.33	3,683.88	46.18	47.17	82.07	517.44	-3,904.42	747.42	655.16	92.26	8.101	
7,600.00	3,786.06	7,549.33	3,683.29	46.72	47.71	82.10	515.90	-3,954.40	747.09	653.75	93.34	8.004	
7,650.00	3,785.07	7,599.33	3,682.69	47.25	48.25	82.13	514.36	-4,004.37	746.76	652.34	94.42	7.909	
7,700.00	3,784.08	7,649.33	3,682.10	47.79	48.79	82.15	512.83	-4,054.34	746.43	650.93	95.50	7.816	
7,750.00	3,783.09	7,699.32	3,681.51	48.33	49.33	82.18	511.29	-4,104.31	746.10	649.52	96.58	7.725	
7,800.00	3,782.10	7,749.32	3,680.91	48.87	49.87	82.21	509.75	-4,154.28	745.77	648.11	97.66	7.636	
7,850.00	3,781.11	7,799.32	3,680.32	49.41	50.41	82.24	508.21	-4,204.25	745.44	646.69	98.74	7.549	
7,900.00	3,780.12	7,849.32	3,679.72	49.95	50.95	82.26	506.67	-4,254.22	745.11	645.28	99.82	7.464	
7,950.00	3,779.13	7,899.32	3,679.13	50.49	51.49	82.29	505.14	-4,304.19	744.78	643.87	100.91	7.381	
8,000.00	3,778.13	7,949.31	3,678.54	51.03	52.04	82.32	503.60	-4,354.16	744.45	642.45	101.99	7.299	
8,050.00	3,777.14	7,999.31	3,677.94	51.58	52.58	82.34	502.06	-4,404.13	744.12	641.04	103.08	7.219	
8,100.00	3,776.15	8,049.31	3,677.35	52.12	53.12	82.37	500.52	-4,454.10	743.79	639.62	104.17	7.140	
8,150.00	3,775.16	8,099.31	3,676.75	52.66	53.66	82.40	498.99	-4,504.07	743.46	638.20	105.26	7.063	
8,200.00	3,774.17	8,149.30	3,676.16	53.20	54.21	82.43	497.45	-4,554.04	743.13	636.79	106.34	6.988	
8,250.00	3,773.18	8,199.30	3,675.56	53.75	54.75	82.45	495.91	-4,604.01	742.80	635.37	107.43	6.914	
8,300.00	3,772.19	8,249.30	3,674.97	54.29	55.30	82.48	494.37	-4,653.98	742.47	633.95	108.52	6.842	
8,350.00	3,771.20	8,299.30	3,674.38	54.84	55.84	82.51	492.83	-4,703.95	742.14	632.53	109.62	6.770	
8,400.00	3,770.21	8,349.29	3,673.78	55.38	56.39	82.54	491.30	-4,753.92	741.82	631.11	110.71	6.701	
8,450.00	3,769.22	8,399.29	3,673.19	55.93	56.93	82.56	489.76	-4,803.89	741.49	629.69	111.80	6.632	
8,500.00	3,768.23	8,449.29	3,672.59	56.47	57.48	82.59	488.22	-4,853.86	741.16	628.27	112.89	6.565	
8,550.00	3,767.24	8,499.29	3,672.00	57.02	58.03	82.62	486.68	-4,903.83	740.83	626.84	113.99	6.499	
8,600.00	3,766.25	8,549.28	3,671.41	57.56	58.57	82.65	485.14	-4,953.80	740.50	625.42	115.08	6.435	
8,650.00	3,765.26	8,599.28	3,670.81	58.11	59.12	82.67	483.61	-5,003.77	740.18	624.00	116.18	6.371	
8,700.00	3,764.27	8,649.28	3,670.22	58.66	59.67	82.70	482.07	-5,053.75	739.85	622.58	117.27	6.309	
8,750.00	3,763.28	8,699.28	3,669.62	59.20	60.21	82.73	480.53	-5,103.72	739.52	621.15	118.37	6.248	
8,800.00	3,762.29	8,749.28	3,669.03	59.75	60.76	82.76	478.99	-5,153.69	739.20	619.73	119.47	6.187	
8,850.00	3,761.30	8,799.27	3,668.43	60.30	61.31	82.79	477.45	-5,203.66	738.87	618.30	120.56	6.128	
8,900.00	3,760.31	8,849.27	3,667.84	60.85	61.86	82.81	475.92	-5,253.63	738.54	616.88	121.66	6.070	
8,950.00	3,759.32	8,899.27	3,667.25	61.39	62.41	82.84	474.38	-5,303.60	738.22	615.45	122.76	6.013	
9,000.00	3,758.33	8,949.27	3,666.65	61.94	62.96	82.87	472.84	-5,353.57	737.89	614.03	123.86	5.957	
9,050.00	3,757.34	8,999.26	3,666.06	62.49	63.50	82.90	471.30	-5,403.54	737.56	612.60	124.96	5.902	
9,100.00	3,756.34	9,049.26	3,665.46	63.04	64.05	82.92	469.76	-5,453.51	737.24	611.18	126.06	5.848	
9,150.00	3,755.35	9,099.26	3,664.87	63.59	64.60	82.95	468.23	-5,503.48	736.91	609.75	127.16	5.795	
9,200.00	3,754.36	9,149.26	3,664.28	64.14	65.15	82.98	466.69	-5,553.45	736.59	608.32	128.26	5.743	
9,250.00	3,753.37	9,199.25	3,663.68	64.69	65.70	83.01	465.15	-5,603.42	736.26	606.89	129.37	5.691	
9,300.00	3,752.38	9,249.25	3,663.09	65.24	66.25	83.04	463.61	-5,653.39	735.94	605.47	130.47	5.641	
9,350.00	3,751.39	9,299.25	3,662.49	65.79	66.80	83.06	462.08	-5,703.36	735.61	604.04	131.57	5.591	

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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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 WELCH B 28 FED - 10H - Wellbore #1 - PERMIT												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+SAG+FDIR												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
9,370.26	3,750.99	9,319.51	3,662.25	66.01	67.03	83.08	461.45	-5,723.61	735.48	603.46	132.02	5.571	
9,396.24	3,750.48	9,340.71	3,662.00	66.30	67.26	83.09	460.80	-5,744.80	735.33	602.79	132.54	5.548 CC	
9,400.00	3,750.40	9,340.71	3,662.00	66.34	67.26	83.09	460.80	-5,744.80	735.34	602.76	132.58	5.546 ES	
9,420.28	3,750.00	9,340.71	3,662.00	66.56	67.26	83.09	460.80	-5,744.80	735.72	602.92	132.80	5.540 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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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 WELCH CD 28 STATE COM - 10H - Wellbore #1 - PERMIT												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+SAG+FDIR												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Warning							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
7,150.00	3,794.97	7,097.12	3,694.39	41.90	40.39	-82.87	-1,016.41	-3,459.82	810.57	729.05	81.52	9.944	CC
7,200.00	3,793.98	7,147.12	3,692.90	42.43	40.91	-82.83	-1,017.66	-3,509.78	810.63	728.07	82.56	9.819	
7,250.00	3,792.99	7,197.11	3,691.42	42.97	41.44	-82.80	-1,018.92	-3,559.74	810.69	727.08	83.61	9.696	
7,300.00	3,792.00	7,247.11	3,689.93	43.50	41.97	-82.76	-1,020.18	-3,609.70	810.76	726.10	84.66	9.577	
7,350.00	3,791.01	7,297.11	3,688.45	44.03	42.50	-82.73	-1,021.44	-3,659.66	810.82	725.11	85.70	9.461	
7,400.00	3,790.02	7,347.11	3,686.96	44.57	43.03	-82.70	-1,022.70	-3,709.62	810.88	724.13	86.76	9.347	
7,450.00	3,789.03	7,397.10	3,685.48	45.11	43.56	-82.66	-1,023.96	-3,759.58	810.95	723.14	87.81	9.236	
7,500.00	3,788.04	7,447.10	3,683.99	45.64	44.09	-82.63	-1,025.22	-3,809.54	811.01	722.15	88.86	9.127	
7,550.00	3,787.05	7,497.10	3,682.51	46.18	44.62	-82.59	-1,026.48	-3,859.50	811.08	721.16	89.91	9.020	
7,600.00	3,786.06	7,547.10	3,681.02	46.72	45.16	-82.56	-1,027.74	-3,909.46	811.14	720.17	90.97	8.917	
7,650.00	3,785.07	7,597.09	3,679.54	47.25	45.69	-82.52	-1,029.00	-3,959.42	811.21	719.18	92.03	8.815	
7,700.00	3,784.08	7,647.09	3,678.05	47.79	46.23	-82.49	-1,030.26	-4,009.38	811.27	718.19	93.08	8.715	
7,750.00	3,783.09	7,697.09	3,676.57	48.33	46.76	-82.45	-1,031.52	-4,059.34	811.34	717.19	94.14	8.618	
7,800.00	3,782.10	7,747.09	3,675.08	48.87	47.30	-82.42	-1,032.78	-4,109.30	811.40	716.20	95.20	8.523	
7,850.00	3,781.11	7,797.08	3,673.60	49.41	47.83	-82.38	-1,034.04	-4,159.26	811.47	715.21	96.26	8.430	
7,900.00	3,780.12	7,847.08	3,672.11	49.95	48.37	-82.35	-1,035.30	-4,209.22	811.54	714.21	97.32	8.338	
7,950.00	3,779.13	7,897.08	3,670.62	50.49	48.91	-82.31	-1,036.56	-4,259.18	811.60	713.22	98.39	8.249	
8,000.00	3,778.13	7,947.08	3,669.14	51.03	49.45	-82.28	-1,037.82	-4,309.14	811.67	712.22	99.45	8.162	
8,050.00	3,777.14	7,997.07	3,667.65	51.58	49.98	-82.25	-1,039.08	-4,359.10	811.74	711.23	100.51	8.076	
8,100.00	3,776.15	8,047.07	3,666.17	52.12	50.52	-82.21	-1,040.34	-4,409.06	811.81	710.23	101.58	7.992	
8,150.00	3,775.16	8,097.07	3,664.68	52.66	51.06	-82.18	-1,041.60	-4,459.02	811.88	709.23	102.64	7.910	
8,200.00	3,774.17	8,147.07	3,663.20	53.20	51.60	-82.14	-1,042.86	-4,508.98	811.95	708.24	103.71	7.829	
8,250.00	3,773.18	8,197.06	3,661.71	53.75	52.14	-82.11	-1,044.12	-4,558.93	812.01	707.24	104.78	7.750	
8,300.00	3,772.19	8,247.06	3,660.23	54.29	52.69	-82.07	-1,045.38	-4,608.89	812.08	706.24	105.84	7.673	
8,350.00	3,771.20	8,297.06	3,658.74	54.84	53.23	-82.04	-1,046.64	-4,658.85	812.15	705.24	106.91	7.597	
8,400.00	3,770.21	8,347.06	3,657.26	55.38	53.77	-82.00	-1,047.89	-4,708.81	812.22	704.24	107.98	7.522	
8,450.00	3,769.22	8,397.05	3,655.77	55.93	54.31	-81.97	-1,049.15	-4,758.77	812.29	703.24	109.05	7.449	
8,500.00	3,768.23	8,447.05	3,654.29	56.47	54.85	-81.93	-1,050.41	-4,808.73	812.36	702.25	110.12	7.377	
8,550.00	3,767.24	8,497.05	3,652.80	57.02	55.40	-81.90	-1,051.67	-4,858.69	812.43	701.25	111.19	7.307	
8,600.00	3,766.25	8,547.05	3,651.31	57.56	55.94	-81.86	-1,052.93	-4,908.65	812.50	700.25	112.26	7.238	
8,650.00	3,765.26	8,597.04	3,649.83	58.11	56.49	-81.83	-1,054.19	-4,958.61	812.58	699.25	113.33	7.170	
8,700.00	3,764.27	8,647.04	3,648.34	58.66	57.03	-81.80	-1,055.45	-5,008.57	812.65	698.25	114.40	7.104	
8,750.00	3,763.28	8,697.04	3,646.86	59.20	57.57	-81.76	-1,056.71	-5,058.53	812.72	697.25	115.47	7.038	
8,800.00	3,762.29	8,747.04	3,645.37	59.75	58.12	-81.73	-1,057.97	-5,108.49	812.79	696.25	116.54	6.974	
8,850.00	3,761.30	8,797.03	3,643.89	60.30	58.66	-81.69	-1,059.23	-5,158.45	812.86	695.25	117.62	6.911	
8,900.00	3,760.31	8,847.03	3,642.40	60.85	59.21	-81.66	-1,060.49	-5,208.41	812.94	694.25	118.69	6.849	
8,950.00	3,759.32	8,897.03	3,640.92	61.39	59.76	-81.62	-1,061.75	-5,258.37	813.01	693.25	119.76	6.788	
9,000.00	3,758.33	8,947.03	3,639.43	61.94	60.30	-81.59	-1,063.01	-5,308.33	813.08	692.25	120.84	6.729	
9,050.00	3,757.34	8,997.02	3,637.95	62.49	60.85	-81.55	-1,064.27	-5,358.29	813.16	691.25	121.91	6.670	
9,100.00	3,756.34	9,047.02	3,636.46	63.04	61.40	-81.52	-1,065.53	-5,408.25	813.23	690.25	122.99	6.612	
9,150.00	3,755.35	9,097.02	3,634.98	63.59	61.94	-81.48	-1,066.79	-5,458.21	813.31	689.25	124.06	6.556	
9,200.00	3,754.36	9,147.02	3,633.49	64.14	62.49	-81.45	-1,068.05	-5,508.17	813.38	688.24	125.14	6.500	
9,250.00	3,753.37	9,197.01	3,632.00	64.69	63.04	-81.42	-1,069.31	-5,558.13	813.45	687.24	126.21	6.445	
9,300.00	3,752.38	9,247.01	3,630.52	65.24	63.59	-81.38	-1,070.57	-5,608.09	813.53	686.24	127.29	6.391	
9,350.00	3,751.39	9,297.01	3,629.03	65.79	64.13	-81.35	-1,071.83	-5,658.05	813.61	685.24	128.36	6.338	
9,370.26	3,750.99	9,317.27	3,628.43	66.01	64.36	-81.33	-1,072.34	-5,678.29	813.64	684.84	128.80	6.317	
9,400.00	3,750.40	9,347.01	3,627.55	66.34	64.68	-81.31	-1,073.09	-5,708.01	813.68	684.25	129.44	6.286	
9,420.28	3,750.00	9,367.29	3,626.95	66.56	64.90	-81.30	-1,073.60	-5,728.27	813.71	683.84	129.87	6.266	ES, 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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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 WELCH CD 28 STATE COM - 50H - Wellbore #1 - PERMIT												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+SAG+FDIR												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	
6,500.00	3,807.85	6,852.04	4,141.18	35.07	35.89	123.73	302.88	-2,850.56	600.30	540.19	60.11	9.986	CC
6,550.00	3,806.86	6,902.04	4,140.49	35.59	36.40	123.76	301.62	-2,900.54	600.47	539.48	60.99	9.846	
6,600.00	3,805.87	6,952.04	4,139.80	36.11	36.92	123.78	300.37	-2,950.52	600.64	538.78	61.86	9.709	
6,650.00	3,804.88	7,002.04	4,139.10	36.63	37.43	123.80	299.12	-3,000.50	600.81	538.07	62.74	9.576	
6,700.00	3,803.89	7,052.04	4,138.41	37.16	37.95	123.83	297.86	-3,050.47	600.98	537.36	63.62	9.447	
6,750.00	3,802.90	7,102.04	4,137.72	37.68	38.46	123.85	296.61	-3,100.45	601.15	536.65	64.50	9.320	
6,800.00	3,801.91	7,152.04	4,137.02	38.20	38.98	123.87	295.35	-3,150.43	601.32	535.94	65.38	9.197	
6,850.00	3,800.91	7,202.04	4,136.33	38.73	39.50	123.90	294.10	-3,200.41	601.49	535.22	66.27	9.077	
6,900.00	3,799.92	7,252.04	4,135.64	39.26	40.02	123.92	292.85	-3,250.39	601.66	534.51	67.15	8.960	
6,950.00	3,798.93	7,302.04	4,134.94	39.78	40.54	123.94	291.59	-3,300.37	601.83	533.79	68.04	8.845	
7,000.00	3,797.94	7,352.04	4,134.25	40.31	41.06	123.97	290.34	-3,350.35	602.00	533.07	68.93	8.734	
7,050.00	3,796.95	7,402.04	4,133.56	40.84	41.58	123.99	289.08	-3,400.32	602.17	532.35	69.81	8.625	
7,100.00	3,795.96	7,452.03	4,132.86	41.37	42.11	124.01	287.83	-3,450.30	602.34	531.63	70.71	8.519	
7,150.00	3,794.97	7,502.03	4,132.17	41.90	42.63	124.04	286.58	-3,500.28	602.51	530.91	71.60	8.415	
7,200.00	3,793.98	7,552.03	4,131.48	42.43	43.16	124.06	285.32	-3,550.26	602.68	530.19	72.49	8.314	
7,250.00	3,792.99	7,602.03	4,130.78	42.97	43.69	124.08	284.07	-3,600.24	602.85	529.47	73.38	8.215	
7,300.00	3,792.00	7,652.03	4,130.09	43.50	44.22	124.10	282.81	-3,650.22	603.02	528.74	74.28	8.119	
7,350.00	3,791.01	7,702.03	4,129.40	44.03	44.74	124.13	281.56	-3,700.20	603.19	528.02	75.17	8.024	
7,400.00	3,790.02	7,752.03	4,128.70	44.57	45.27	124.15	280.31	-3,750.17	603.36	527.29	76.07	7.932	
7,450.00	3,789.03	7,802.03	4,128.01	45.11	45.80	124.17	279.05	-3,800.15	603.53	526.57	76.96	7.842	
7,500.00	3,788.04	7,852.03	4,127.32	45.64	46.34	124.20	277.80	-3,850.13	603.70	525.84	77.86	7.754	
7,550.00	3,787.05	7,902.03	4,126.62	46.18	46.87	124.22	276.54	-3,900.11	603.87	525.12	78.76	7.667	
7,600.00	3,786.06	7,952.03	4,125.93	46.72	47.40	124.24	275.29	-3,950.09	604.05	524.39	79.66	7.583	
7,650.00	3,785.07	8,002.02	4,125.24	47.25	47.93	124.27	274.04	-4,000.07	604.22	523.66	80.56	7.501	
7,700.00	3,784.08	8,052.02	4,124.54	47.79	48.47	124.29	272.78	-4,050.05	604.39	522.93	81.46	7.420	
7,750.00	3,783.09	8,102.02	4,123.85	48.33	49.00	124.31	271.53	-4,100.03	604.56	522.20	82.36	7.341	
7,800.00	3,782.10	8,152.02	4,123.16	48.87	49.54	124.34	270.27	-4,150.00	604.73	521.48	83.26	7.263	
7,850.00	3,781.11	8,202.02	4,122.46	49.41	50.07	124.36	269.02	-4,199.98	604.90	520.75	84.16	7.188	
7,900.00	3,780.12	8,252.02	4,121.77	49.95	50.61	124.38	267.77	-4,249.96	605.08	520.02	85.06	7.114	
7,950.00	3,779.13	8,302.02	4,121.08	50.49	51.15	124.40	266.51	-4,299.94	605.25	519.29	85.96	7.041	
8,000.00	3,778.13	8,352.02	4,120.38	51.03	51.68	124.43	265.26	-4,349.92	605.42	518.56	86.86	6.970	
8,050.00	3,777.14	8,402.02	4,119.69	51.58	52.22	124.45	264.00	-4,399.90	605.59	517.83	87.77	6.900	
8,100.00	3,776.15	8,452.02	4,119.00	52.12	52.76	124.47	262.75	-4,449.88	605.76	517.09	88.67	6.832	
8,150.00	3,775.16	8,502.02	4,118.30	52.66	53.30	124.50	261.50	-4,499.85	605.94	516.36	89.57	6.765	
8,200.00	3,774.17	8,552.01	4,117.61	53.20	53.84	124.52	260.24	-4,549.83	606.11	515.63	90.48	6.699	
8,250.00	3,773.18	8,602.01	4,116.92	53.75	54.38	124.54	258.99	-4,599.81	606.28	514.90	91.38	6.635	
8,300.00	3,772.19	8,652.01	4,116.22	54.29	54.92	124.56	257.73	-4,649.79	606.45	514.17	92.29	6.571	
8,350.00	3,771.20	8,702.01	4,115.53	54.84	55.46	124.59	256.48	-4,699.77	606.63	513.44	93.19	6.510	
8,400.00	3,770.21	8,752.01	4,114.84	55.38	56.00	124.61	255.23	-4,749.75	606.80	512.70	94.10	6.449	
8,450.00	3,769.22	8,802.01	4,114.14	55.93	56.54	124.63	253.97	-4,799.73	606.97	511.97	95.00	6.389	
8,500.00	3,768.23	8,852.01	4,113.45	56.47	57.09	124.66	252.72	-4,849.70	607.15	511.24	95.91	6.331	
8,550.00	3,767.24	8,902.01	4,112.76	57.02	57.63	124.68	251.46	-4,899.68	607.32	510.51	96.81	6.273	
8,600.00	3,766.25	8,952.01	4,112.06	57.56	58.17	124.70	250.21	-4,949.66	607.49	509.78	97.72	6.217	
8,650.00	3,765.26	9,002.01	4,111.37	58.11	58.71	124.72	248.96	-4,999.64	607.67	509.04	98.62	6.162	
8,700.00	3,764.27	9,052.01	4,110.68	58.66	59.26	124.75	247.70	-5,049.62	607.84	508.31	99.53	6.107	
8,750.00	3,763.28	9,102.01	4,109.98	59.20	59.80	124.77	246.45	-5,099.60	608.01	507.58	100.43	6.054	
8,800.00	3,762.29	9,152.00	4,109.29	59.75	60.35	124.79	245.19	-5,149.58	608.19	506.85	101.34	6.001	
8,850.00	3,761.30	9,202.00	4,108.60	60.30	60.89	124.81	243.94	-5,199.55	608.36	506.11	102.25	5.950	
8,900.00	3,760.31	9,252.00	4,107.90	60.85	61.43	124.84	242.69	-5,249.53	608.53	505.38	103.15	5.899	
8,950.00	3,759.32	9,302.00	4,107.21	61.39	61.98	124.86	241.43	-5,299.51	608.71	504.65	104.06	5.850	
9,000.00	3,758.33	9,352.00	4,106.52	61.94	62.53	124.88	240.18	-5,349.49	608.88	503.92	104.96	5.801	
9,050.00	3,757.34	9,402.00	4,105.82	62.49	63.07	124.91	238.92	-5,399.47	609.06	503.19	105.87	5.753	

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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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 WELCH CD 28 STATE COM - 50H - Wellbore #1 - PERMIT												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+SAG+FDIR												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
9,100.00	3,756.34	9,452.00	4,105.13	63.04	63.62	124.93	237.67	-5,449.45	609.23	502.45	106.78	5.706	
9,150.00	3,755.35	9,502.00	4,104.44	63.59	64.16	124.95	236.42	-5,499.43	609.40	501.72	107.68	5.659	
9,200.00	3,754.36	9,552.00	4,103.74	64.14	64.71	124.97	235.16	-5,549.40	609.58	500.99	108.59	5.614	
9,250.00	3,753.37	9,602.00	4,103.05	64.69	65.26	125.00	233.91	-5,599.38	609.75	500.26	109.49	5.569	
9,300.00	3,752.38	9,652.00	4,102.36	65.24	65.80	125.02	232.65	-5,649.36	609.93	499.53	110.40	5.525	
9,350.00	3,751.39	9,701.99	4,101.66	65.79	66.35	125.04	231.40	-5,699.34	610.10	498.80	111.31	5.481	
9,370.26	3,750.99	9,722.25	4,101.38	66.01	66.57	125.05	230.89	-5,719.59	610.17	498.50	111.67	5.464	
9,400.00	3,750.40	9,749.87	4,101.00	66.34	66.88	125.06	230.20	-5,747.20	610.28	498.09	112.19	5.440 ES	
9,420.28	3,750.00	9,749.87	4,101.00	66.56	66.88	125.06	230.20	-5,747.20	610.76	498.38	112.38	5.435 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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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 WELCH CD 28 STATE COM - 70H - Wellbore #1 - PERMIT													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+SAG+FDIR													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		
1,200.00	1,195.81	1,199.04	1,195.52	4.08	4.00	125.16	-74.02	8.65	80.66	72.58	8.08	9.987	CC, ES	
1,250.00	1,245.51	1,248.64	1,244.30	4.27	4.18	122.03	-81.66	13.45	84.16	75.72	8.44	9.976		
1,300.00	1,295.21	1,298.24	1,292.96	4.45	4.35	118.79	-89.76	18.53	87.96	79.16	8.80	9.999		
8,450.00	3,769.22	9,065.78	4,365.41	55.93	56.39	-145.19	-659.94	-4,782.00	726.28	653.07	73.20	9.921		
8,500.00	3,768.23	9,115.78	4,364.57	56.47	56.93	-145.19	-661.20	-4,831.98	726.40	652.47	73.93	9.826		
8,550.00	3,767.24	9,165.78	4,363.73	57.02	57.47	-145.20	-662.46	-4,881.96	726.52	651.87	74.66	9.732		
8,600.00	3,766.25	9,215.78	4,362.89	57.56	58.01	-145.21	-663.72	-4,931.93	726.64	651.26	75.38	9.640		
8,650.00	3,765.26	9,265.77	4,362.05	58.11	58.55	-145.21	-664.98	-4,981.91	726.77	650.66	76.11	9.549		
8,700.00	3,764.27	9,315.77	4,361.20	58.66	59.09	-145.22	-666.24	-5,031.89	726.89	650.05	76.83	9.460		
8,750.00	3,763.28	9,365.77	4,360.36	59.20	59.64	-145.23	-667.50	-5,081.86	727.01	649.45	77.56	9.373		
8,800.00	3,762.29	9,415.77	4,359.52	59.75	60.18	-145.23	-668.76	-5,131.84	727.13	648.85	78.29	9.288		
8,850.00	3,761.30	9,465.77	4,358.68	60.30	60.72	-145.24	-670.02	-5,181.82	727.26	648.24	79.01	9.204		
8,900.00	3,760.31	9,515.77	4,357.84	60.85	61.27	-145.25	-671.28	-5,231.80	727.38	647.64	79.74	9.122		
8,950.00	3,759.32	9,565.77	4,356.99	61.39	61.81	-145.25	-672.54	-5,281.77	727.50	647.03	80.47	9.041		
9,000.00	3,758.33	9,615.77	4,356.15	61.94	62.35	-145.26	-673.80	-5,331.75	727.63	646.43	81.20	8.961		
9,050.00	3,757.34	9,665.77	4,355.31	62.49	62.90	-145.26	-675.06	-5,381.73	727.75	645.82	81.92	8.883		
9,100.00	3,756.34	9,715.77	4,354.47	63.04	63.44	-145.27	-676.32	-5,431.70	727.87	645.22	82.65	8.807		
9,150.00	3,755.35	9,765.77	4,353.63	63.59	63.99	-145.28	-677.58	-5,481.68	727.99	644.62	83.38	8.731		
9,200.00	3,754.36	9,815.77	4,352.78	64.14	64.53	-145.28	-678.84	-5,531.66	728.12	644.01	84.11	8.657		
9,250.00	3,753.37	9,865.77	4,351.94	64.69	65.08	-145.29	-680.10	-5,581.63	728.24	643.41	84.83	8.584		
9,300.00	3,752.38	9,915.77	4,351.10	65.24	65.62	-145.30	-681.36	-5,631.61	728.36	642.80	85.56	8.513		
9,350.00	3,751.39	9,965.77	4,350.26	65.79	66.17	-145.30	-682.62	-5,681.59	728.48	642.20	86.29	8.442		
9,370.26	3,750.99	9,986.03	4,349.92	66.01	66.39	-145.31	-683.13	-5,701.83	728.53	641.95	86.58	8.414		
9,400.00	3,750.40	10,015.77	4,349.42	66.34	66.72	-145.31	-683.88	-5,731.56	728.61	641.59	87.02	8.373		
9,420.28	3,750.00	10,036.05	4,349.08	66.56	66.94	-145.31	-684.39	-5,751.84	728.66	641.35	87.31	8.346	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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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												Offset Site Error:	0.00 usft
Survey Program: 108-INC-ONLY												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	
5,250.00	3,832.61	3,836.75	3,832.61	22.81	76.53	-91.88	-694.02	-2,412.45	983.11	883.84	99.28	9.903	
5,300.00	3,831.62	3,835.76	3,831.62	23.26	76.51	-91.77	-694.02	-2,412.45	940.68	840.97	99.71	9.434	
5,350.00	3,830.63	3,834.77	3,830.63	23.71	76.49	-91.65	-694.02	-2,412.45	899.03	798.87	100.16	8.976	
5,400.00	3,829.64	3,833.78	3,829.64	24.17	76.47	-91.54	-694.02	-2,412.45	858.26	757.66	100.60	8.531	
5,450.00	3,828.65	3,832.79	3,828.65	24.64	76.46	-91.43	-694.02	-2,412.45	818.52	717.47	101.06	8.100	
5,500.00	3,827.66	3,831.80	3,827.66	25.11	76.44	-91.32	-694.02	-2,412.45	779.96	678.45	101.51	7.684	
5,550.00	3,826.67	3,830.81	3,826.67	25.58	76.42	-91.21	-694.02	-2,412.45	742.77	640.80	101.97	7.284	
5,600.00	3,825.68	3,829.82	3,825.68	26.06	76.40	-91.10	-694.02	-2,412.45	707.15	604.72	102.43	6.904	
5,650.00	3,824.69	3,828.83	3,824.69	26.54	76.38	-90.99	-694.02	-2,412.45	673.36	570.47	102.90	6.544	
5,700.00	3,823.70	3,827.84	3,823.70	27.02	76.36	-90.87	-694.02	-2,412.45	641.69	538.33	103.36	6.208	
5,750.00	3,822.70	3,826.85	3,822.70	27.51	76.34	-90.76	-694.02	-2,412.45	612.47	508.64	103.83	5.899	
5,800.00	3,821.71	3,825.85	3,821.71	28.00	76.32	-90.65	-694.02	-2,412.45	586.06	481.76	104.30	5.619	
5,850.00	3,820.72	3,824.86	3,820.72	28.49	76.30	-90.54	-694.02	-2,412.45	562.87	458.09	104.78	5.372	
5,900.00	3,819.73	3,823.87	3,819.73	28.98	76.28	-90.43	-694.02	-2,412.45	543.29	438.03	105.26	5.162	
5,950.00	3,818.74	3,822.88	3,818.74	29.48	76.26	-90.32	-694.02	-2,412.45	527.74	422.00	105.74	4.991	
6,000.00	3,817.75	3,821.89	3,817.75	29.98	76.24	-90.20	-694.02	-2,412.45	516.58	410.36	106.21	4.863	
6,050.00	3,816.76	3,820.90	3,816.76	30.48	76.22	-90.09	-694.02	-2,412.45	510.09	403.39	106.70	4.781	
6,091.63	3,815.94	3,820.08	3,815.94	30.90	76.21	-90.00	-694.02	-2,412.45	508.39	401.29	107.10	4.747 CC	
6,100.00	3,815.77	3,819.91	3,815.77	30.98	76.20	-89.98	-694.02	-2,412.45	508.46	401.27	107.18	4.744 ES, SF	
6,150.00	3,814.78	3,818.92	3,814.78	31.49	76.18	-89.87	-694.02	-2,412.45	511.73	404.06	107.67	4.753	
6,200.00	3,813.79	3,817.93	3,813.79	32.00	76.16	-89.76	-694.02	-2,412.45	519.81	411.65	108.16	4.806	
6,250.00	3,812.80	3,816.94	3,812.80	32.51	76.14	-89.65	-694.02	-2,412.45	532.48	423.83	108.65	4.901	
6,300.00	3,811.81	3,815.95	3,811.81	33.02	76.12	-89.53	-694.02	-2,412.45	549.42	440.28	109.13	5.034	
6,350.00	3,810.82	3,814.96	3,810.82	33.53	76.10	-89.42	-694.02	-2,412.45	570.25	460.63	109.63	5.202	
6,400.00	3,809.83	3,813.97	3,809.83	34.04	76.09	-89.31	-694.02	-2,412.45	594.57	484.45	110.12	5.399	
6,450.00	3,808.84	3,812.98	3,808.84	34.56	76.07	-89.20	-694.02	-2,412.45	621.96	511.35	110.61	5.623	
6,500.00	3,807.85	3,811.99	3,807.85	35.07	76.05	-89.09	-694.02	-2,412.45	652.04	540.94	111.11	5.869	
6,550.00	3,806.86	3,811.00	3,806.86	35.59	76.03	-88.98	-694.02	-2,412.45	684.46	572.86	111.60	6.133	
6,600.00	3,805.87	3,810.01	3,805.87	36.11	76.01	-88.87	-694.02	-2,412.45	718.89	606.79	112.10	6.413	
6,650.00	3,804.88	3,809.02	3,804.88	36.63	75.99	-88.75	-694.02	-2,412.45	755.06	642.47	112.60	6.706	
6,700.00	3,803.89	3,808.03	3,803.89	37.16	75.97	-88.64	-694.02	-2,412.45	792.74	679.64	113.09	7.010	
6,750.00	3,802.90	3,807.04	3,802.90	37.68	75.95	-88.53	-694.02	-2,412.45	831.71	718.12	113.59	7.322	
6,800.00	3,801.91	3,806.05	3,801.91	38.20	75.93	-88.42	-694.02	-2,412.45	871.81	757.72	114.09	7.641	
6,850.00	3,800.91	3,805.06	3,800.91	38.73	75.91	-88.31	-694.02	-2,412.45	912.89	798.30	114.59	7.967	
6,900.00	3,799.92	3,804.06	3,799.92	39.26	75.89	-88.20	-694.02	-2,412.45	954.81	839.72	115.09	8.296	
6,950.00	3,798.93	3,803.07	3,798.93	39.78	75.87	-88.08	-694.02	-2,412.45	997.48	881.89	115.59	8.629	
7,000.00	3,797.94	3,802.08	3,797.94	40.31	75.85	-87.97	-694.02	-2,412.45	1,040.81	924.71	116.09	8.965	
7,050.00	3,796.95	3,801.09	3,796.95	40.84	75.83	-87.86	-694.02	-2,412.45	1,084.70	968.11	116.59	9.303	
7,100.00	3,795.96	3,800.10	3,795.96	41.37	75.81	-87.75	-694.02	-2,412.45	1,129.11	1,012.01	117.10	9.643	
7,150.00	3,794.97	3,799.11	3,794.97	41.90	75.79	-87.64	-694.02	-2,412.45	1,173.96	1,056.36	117.60	9.983	

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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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 WELCH CD 28 STATE COM - OFFSET: GERONIMO 28 STATE SWD 2 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 48-INC-ONLY												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
4,300.00	3,846.90	3,854.98	3,846.90	15.63	72.86	61.26	-30.40	-1,295.40	669.89	592.23	77.66	8.626	
4,350.00	3,850.01	3,858.00	3,849.92	15.92	72.92	84.83	-30.40	-1,295.40	620.98	532.53	88.45	7.021	
4,372.09	3,850.00	3,858.00	3,849.92	16.05	72.92	95.19	-30.40	-1,295.40	599.38	510.73	88.65	6.761	
4,400.00	3,849.45	3,857.53	3,849.45	16.21	72.91	94.98	-30.40	-1,295.40	572.14	483.31	88.83	6.441	
4,450.00	3,848.46	3,856.54	3,848.46	16.53	72.89	94.53	-30.40	-1,295.40	523.51	434.33	89.17	5.871	
4,500.00	3,847.47	3,855.55	3,847.47	16.84	72.88	94.09	-30.40	-1,295.40	475.16	385.65	89.52	5.308	
4,550.00	3,846.48	3,854.56	3,846.48	17.18	72.86	93.64	-30.40	-1,295.40	427.20	337.32	89.88	4.753	
4,600.00	3,845.49	3,853.57	3,845.49	17.52	72.84	93.20	-30.40	-1,295.40	379.75	289.52	90.24	4.208	
4,650.00	3,844.49	3,852.58	3,844.49	17.88	72.82	92.75	-30.40	-1,295.40	333.06	242.45	90.61	3.676	
4,700.00	3,843.50	3,851.59	3,843.50	18.24	72.80	92.31	-30.40	-1,295.40	287.47	196.49	90.98	3.160	
4,750.00	3,842.51	3,850.59	3,842.51	18.62	72.78	91.86	-30.40	-1,295.40	243.61	152.25	91.36	2.666	
4,800.00	3,841.52	3,849.60	3,841.52	19.00	72.76	91.41	-30.40	-1,295.40	202.62	110.88	91.74	2.209	
4,850.00	3,840.53	3,848.61	3,840.53	19.40	72.74	90.97	-30.40	-1,295.40	166.61	74.48	92.13	1.808	
4,900.00	3,839.54	3,847.62	3,839.54	19.80	72.72	90.52	-30.40	-1,295.40	139.51	47.00	92.51	1.508	
4,950.00	3,838.55	3,846.63	3,838.55	20.21	72.70	90.07	-30.40	-1,295.40	127.14	34.23	92.91	1.368 Level 3	
4,958.00	3,838.39	3,846.47	3,838.39	20.28	72.70	90.00	-30.40	-1,295.40	126.89	33.92	92.97	1.365 Level 3, CC, ES, SF	
5,000.00	3,837.56	3,845.64	3,837.56	20.63	72.68	89.62	-30.40	-1,295.40	133.66	40.36	93.30	1.433 Level 3	
5,050.00	3,836.57	3,844.65	3,836.57	21.05	72.66	89.18	-30.40	-1,295.40	156.73	63.03	93.70	1.673	
5,100.00	3,835.58	3,843.66	3,835.58	21.48	72.64	88.73	-30.40	-1,295.40	190.42	96.33	94.09	2.024	
5,150.00	3,834.59	3,842.67	3,834.59	21.92	72.62	88.28	-30.40	-1,295.40	230.11	135.63	94.49	2.435	
5,200.00	3,833.60	3,841.68	3,833.60	22.36	72.60	87.84	-30.40	-1,295.40	273.21	178.33	94.88	2.880	
5,250.00	3,832.61	3,840.69	3,832.61	22.81	72.58	87.39	-30.40	-1,295.40	318.33	223.05	95.28	3.341	
5,300.00	3,831.62	3,839.70	3,831.62	23.26	72.56	86.94	-30.40	-1,295.40	364.72	269.05	95.67	3.812	
5,350.00	3,830.63	3,838.71	3,830.63	23.71	72.54	86.50	-30.40	-1,295.40	411.96	315.89	96.06	4.288	
5,400.00	3,829.64	3,837.72	3,829.64	24.17	72.52	86.05	-30.40	-1,295.40	459.77	363.32	96.45	4.767	
5,450.00	3,828.65	3,836.73	3,828.65	24.64	72.51	85.61	-30.40	-1,295.40	508.01	411.16	96.85	5.245	
5,500.00	3,827.66	3,835.74	3,827.66	25.11	72.49	85.16	-30.40	-1,295.40	556.56	459.32	97.23	5.724	
5,550.00	3,826.67	3,834.75	3,826.67	25.58	72.47	84.72	-30.40	-1,295.40	605.34	507.71	97.62	6.201	
5,600.00	3,825.68	3,833.76	3,825.68	26.06	72.45	84.28	-30.40	-1,295.40	654.30	556.30	98.00	6.676	
5,650.00	3,824.69	3,832.77	3,824.69	26.54	72.43	83.84	-30.40	-1,295.40	703.41	605.02	98.39	7.149	
5,700.00	3,823.70	3,831.78	3,823.70	27.02	72.41	83.39	-30.40	-1,295.40	752.63	653.87	98.76	7.620	
5,750.00	3,822.70	3,830.79	3,822.70	27.51	72.39	82.95	-30.40	-1,295.40	801.95	702.81	99.14	8.089	
5,800.00	3,821.71	3,829.80	3,821.71	28.00	72.37	82.51	-30.40	-1,295.40	851.35	751.84	99.51	8.555	
5,850.00	3,820.72	3,828.80	3,820.72	28.49	72.35	82.07	-30.40	-1,295.40	900.81	800.93	99.88	9.019	
5,900.00	3,819.73	3,827.81	3,819.73	28.98	72.33	81.64	-30.40	-1,295.40	950.33	850.08	100.25	9.480	
5,950.00	3,818.74	3,826.82	3,818.74	29.48	72.31	81.20	-30.40	-1,295.40	999.89	899.28	100.61	9.938	

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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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 WELCH CD 28 STATE COM - OFFSET: HALBERD 27 STATE 3H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 100-MWD+IGRF												Offset Well Error:	0.00 usft
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	Warning
2,750.00	2,736.40	8,025.11	3,813.54	9.77	135.26	-118.71	814.82	220.88	1,408.00	1,263.66	144.34	9.755	
2,763.23	2,749.55	8,023.90	3,813.56	9.82	135.23	-118.64	814.81	222.09	1,398.32	1,253.96	144.36	9.686	
2,800.00	2,786.16	8,021.08	3,813.61	9.96	135.14	-126.90	814.80	224.91	1,371.68	1,226.88	144.80	9.473	
2,850.00	2,836.08	8,018.94	3,813.64	10.13	135.07	-165.28	814.79	227.05	1,336.09	1,191.08	145.01	9.214	
2,900.00	2,886.03	8,018.80	3,813.65	10.30	135.07	136.39	814.79	227.19	1,301.40	1,156.52	144.89	8.982	
2,950.00	2,935.87	8,020.70	3,813.61	10.46	135.13	117.65	814.80	225.29	1,267.79	1,123.26	144.53	8.772	
3,000.00	2,985.47	8,024.69	3,813.54	10.61	135.25	112.01	814.82	221.30	1,235.41	1,091.37	144.05	8.576	
3,050.00	3,034.69	8,030.79	3,813.44	10.77	135.44	110.03	814.84	215.20	1,204.45	1,060.91	143.54	8.391	
3,100.00	3,083.39	8,039.03	3,813.32	10.92	135.70	109.35	814.89	206.96	1,175.05	1,031.96	143.09	8.212	
3,150.00	3,131.45	8,049.44	3,813.18	11.06	136.02	109.17	814.96	196.56	1,147.37	1,004.61	142.76	8.037	
3,200.00	3,178.73	8,062.74	3,813.04	11.21	136.44	109.12	815.07	183.26	1,121.53	978.90	142.64	7.863	
3,250.00	3,225.10	8,080.98	3,812.86	11.35	137.01	108.93	815.22	165.02	1,097.62	954.72	142.90	7.681	
3,300.00	3,270.44	8,101.79	3,812.70	11.49	137.66	108.65	815.36	144.21	1,075.68	932.27	143.41	7.501	
3,350.00	3,314.62	8,125.13	3,812.54	11.63	138.40	108.24	815.50	120.87	1,055.76	911.59	144.18	7.323	
3,400.00	3,357.51	8,150.96	3,812.42	11.77	139.20	107.69	815.61	95.04	1,037.87	892.69	145.18	7.149	
3,450.00	3,399.01	8,179.58	3,812.32	11.90	140.10	106.98	815.70	66.42	1,021.99	875.55	146.44	6.979	
3,500.00	3,438.99	8,210.47	3,812.22	12.05	141.07	106.14	815.76	35.52	1,008.05	860.16	147.89	6.816	
3,550.00	3,477.36	8,243.51	3,812.10	12.20	142.10	105.18	815.78	2.49	995.99	846.47	149.52	6.661	
3,600.00	3,513.99	8,279.57	3,812.01	12.35	143.23	104.07	815.74	-33.57	985.69	834.34	151.35	6.513	
3,650.00	3,548.80	8,318.00	3,812.02	12.52	144.44	102.86	815.56	-72.00	976.99	823.69	153.29	6.373	
3,700.00	3,581.68	8,356.34	3,812.10	12.69	145.64	101.68	815.26	-110.33	969.75	814.53	155.22	6.248	
3,750.00	3,612.56	8,393.00	3,811.87	12.87	146.79	100.56	815.12	-147.00	963.97	806.93	157.04	6.138	
3,800.00	3,641.33	8,433.57	3,811.45	13.07	148.06	99.31	815.05	-187.56	959.51	800.49	159.02	6.034	
3,850.00	3,667.93	8,462.00	3,811.15	13.28	148.95	98.49	815.00	-215.99	956.25	795.82	160.43	5.961	
3,860.74	3,673.35	8,462.00	3,811.15	13.32	148.95	98.49	815.00	-215.99	955.83	795.37	160.46	5.957	
3,891.94	3,688.95	8,462.00	3,811.15	13.46	148.95	98.49	815.00	-215.99	955.32	794.72	160.60	5.949 CC	
3,900.00	3,692.98	8,462.00	3,811.15	13.49	148.95	98.49	815.00	-215.99	955.36	794.72	160.63	5.947 ES, SF	
3,950.00	3,717.98	8,462.00	3,811.15	13.73	148.95	98.49	815.00	-215.99	957.09	796.22	160.87	5.949	
4,000.00	3,742.98	8,462.00	3,811.15	13.97	148.95	98.49	815.00	-215.99	961.41	800.31	161.11	5.968	
4,050.00	3,767.98	8,462.00	3,811.15	14.23	148.95	98.49	815.00	-215.99	968.31	806.95	161.36	6.001	
4,060.74	3,773.35	8,462.00	3,811.15	14.29	148.95	98.49	815.00	-215.99	970.12	808.70	161.42	6.010	
4,100.00	3,791.80	8,462.00	3,811.15	14.50	148.95	97.71	815.00	-215.99	977.91	815.96	161.95	6.038	
4,150.00	3,811.79	8,462.00	3,811.15	14.77	148.95	96.42	815.00	-215.99	990.48	827.80	162.68	6.089	
4,200.00	3,827.71	8,462.00	3,811.15	15.06	148.95	94.81	815.00	-215.99	1,005.85	842.44	163.41	6.155	
4,250.00	3,839.44	8,462.00	3,811.15	15.34	148.95	92.89	815.00	-215.99	1,023.77	859.70	164.07	6.240	
4,300.00	3,846.90	8,462.00	3,811.15	15.63	148.95	90.68	815.00	-215.99	1,043.98	879.42	164.55	6.344	
4,350.00	3,850.01	8,462.00	3,811.15	15.92	148.95	88.20	815.00	-215.99	1,066.20	901.42	164.77	6.471	
4,372.09	3,850.00	8,462.00	3,811.15	16.05	148.95	87.03	815.00	-215.99	1,076.58	911.82	164.76	6.534	
4,400.00	3,849.45	8,462.00	3,811.15	16.21	148.95	87.03	815.00	-215.99	1,090.17	925.25	164.92	6.610	
4,450.00	3,848.46	8,462.00	3,811.15	16.53	148.95	87.03	815.00	-215.99	1,115.85	950.62	165.24	6.753	
4,500.00	3,847.47	8,462.00	3,811.15	16.84	148.95	87.03	815.00	-215.99	1,143.15	977.60	165.55	6.905	
4,550.00	3,846.48	8,462.00	3,811.15	17.18	148.95	87.03	815.00	-215.99	1,171.94	1,006.05	165.89	7.065	
4,600.00	3,845.49	8,462.00	3,811.15	17.52	148.95	87.03	815.00	-215.99	1,202.13	1,035.90	166.23	7.232	
4,650.00	3,844.49	8,462.00	3,811.15	17.88	148.95	87.03	815.00	-215.99	1,233.60	1,067.01	166.59	7.405	
4,700.00	3,843.50	8,462.00	3,811.15	18.24	148.95	87.03	815.00	-215.99	1,266.27	1,099.32	166.95	7.585	
4,750.00	3,842.51	8,462.00	3,811.15	18.62	148.95	87.03	815.00	-215.99	1,300.03	1,132.70	167.33	7.769	
4,800.00	3,841.52	8,462.00	3,811.15	19.00	148.95	87.03	815.00	-215.99	1,334.82	1,167.11	167.71	7.959	
4,850.00	3,840.53	8,462.00	3,811.15	19.40	148.95	87.03	815.00	-215.99	1,370.55	1,202.44	168.11	8.153	
4,900.00	3,839.54	8,462.00	3,811.15	19.80	148.95	87.03	815.00	-215.99	1,407.15	1,238.64	168.51	8.351	
4,950.00	3,838.55	8,462.00	3,811.15	20.21	148.95	87.03	815.00	-215.99	1,444.55	1,275.63	168.92	8.552	
5,000.00	3,837.56	8,462.00	3,811.15	20.63	148.95	87.03	815.00	-215.99	1,482.70	1,313.36	169.33	8.756	
5,050.00	3,836.57	8,462.00	3,811.15	21.05	148.95	87.03	815.00	-215.99	1,521.53	1,351.77	169.76	8.963	

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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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 WELCH CD 28 STATE COM - OFFSET: HALBERD 27 STATE 3H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 100-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	
5,100.00	3,835.58	8,462.00	3,811.15	21.48	148.95	87.03	815.00	-215.99	1,561.00	1,390.81	170.19	9.172	
5,150.00	3,834.59	8,462.00	3,811.15	21.92	148.95	87.03	815.00	-215.99	1,601.05	1,430.43	170.62	9.383	
5,200.00	3,833.60	8,462.00	3,811.15	22.36	148.95	87.03	815.00	-215.99	1,641.66	1,470.59	171.06	9.597	
5,250.00	3,832.61	8,462.00	3,811.15	22.81	148.95	87.03	815.00	-215.99	1,682.76	1,511.25	171.51	9.811	

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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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 WELCH CD 28 STATE COM - OFFSET: HALBERD 27 STATE COM 1H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 100-MWD+IGRF												Offset Well Error:	0.00 usft
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
2,850.00	2,836.08	8,279.55	3,820.60	10.13	143.24	15.61	-1,225.56	265.49	1,498.69	1,345.49	153.20	9.783	
2,900.00	2,886.03	8,279.96	3,820.60	10.30	143.25	-48.37	-1,225.57	265.08	1,464.81	1,311.52	153.29	9.556	
2,950.00	2,935.87	8,282.99	3,820.58	10.46	143.35	-72.16	-1,225.65	262.05	1,431.99	1,278.78	153.21	9.346	
3,000.00	2,985.47	8,288.68	3,820.54	10.61	143.52	-82.24	-1,225.81	256.37	1,400.38	1,247.31	153.07	9.149	
3,050.00	3,034.69	8,297.03	3,820.49	10.77	143.79	-88.04	-1,226.03	248.01	1,370.11	1,217.18	152.93	8.959	
3,100.00	3,083.39	8,311.00	3,820.41	10.92	144.22	-91.78	-1,226.39	234.06	1,341.31	1,188.28	153.03	8.765	
3,150.00	3,131.45	8,329.89	3,820.24	11.06	144.81	-94.32	-1,226.83	215.17	1,314.04	1,160.67	153.37	8.568	
3,200.00	3,178.73	8,351.80	3,819.96	11.21	145.50	-96.12	-1,227.27	193.26	1,288.38	1,134.47	153.91	8.371	
3,250.00	3,225.10	8,376.58	3,819.54	11.35	146.28	-97.37	-1,227.69	168.49	1,264.38	1,109.74	154.64	8.176	
3,300.00	3,270.44	8,401.64	3,819.00	11.49	147.06	-98.30	-1,228.02	143.44	1,242.08	1,086.64	155.44	7.991	
3,350.00	3,314.62	8,423.99	3,818.50	11.63	147.76	-99.11	-1,228.30	121.09	1,221.59	1,065.44	156.15	7.823	
3,400.00	3,357.51	8,448.65	3,817.94	11.77	148.53	-99.61	-1,228.60	96.45	1,202.95	1,045.91	157.03	7.660	
3,450.00	3,399.01	8,475.55	3,817.33	11.90	149.38	-99.85	-1,228.92	69.55	1,186.16	1,028.07	158.09	7.503	
3,500.00	3,438.99	8,504.71	3,816.67	12.05	150.29	-99.86	-1,229.28	40.40	1,171.20	1,011.89	159.30	7.352	
3,550.00	3,477.36	8,536.14	3,815.99	12.20	151.27	-99.66	-1,229.65	8.98	1,158.01	997.34	160.67	7.205	
3,600.00	3,513.99	8,569.68	3,815.31	12.35	152.32	-99.29	-1,230.02	-24.55	1,146.52	984.36	162.16	7.070	
3,650.00	3,548.80	8,607.03	3,814.60	12.52	153.49	-98.72	-1,230.38	-61.89	1,136.62	972.77	163.85	6.937	
3,700.00	3,581.68	8,647.72	3,813.92	12.69	154.77	-97.99	-1,230.65	-102.57	1,128.12	962.45	165.67	6.809	
3,750.00	3,612.56	8,688.44	3,813.33	12.87	156.05	-97.24	-1,230.76	-143.29	1,120.88	953.41	167.47	6.693	
3,800.00	3,641.33	8,727.24	3,812.90	13.07	157.26	-96.55	-1,230.89	-182.08	1,114.92	945.76	169.16	6.591	
3,850.00	3,667.93	8,769.28	3,812.46	13.28	158.58	-95.76	-1,231.03	-224.12	1,110.08	939.12	170.96	6.493	
3,860.74	3,673.35	8,778.49	3,812.36	13.32	158.87	-95.59	-1,231.06	-233.33	1,109.17	937.82	171.35	6.473	
3,900.00	3,692.98	8,810.00	3,812.03	13.49	159.86	-94.77	-1,231.17	-264.84	1,106.12	933.39	172.73	6.404	
3,950.00	3,717.98	8,810.00	3,812.03	13.73	159.86	-94.77	-1,231.17	-264.84	1,103.66	930.69	172.97	6.381	
3,979.30	3,732.63	8,810.00	3,812.03	13.87	159.86	-94.77	-1,231.17	-264.84	1,103.27	930.16	173.11	6.373 CC, ES	
4,000.00	3,742.98	8,810.00	3,812.03	13.97	159.86	-94.77	-1,231.17	-264.84	1,103.46	930.26	173.21	6.371 SF	
4,050.00	3,767.98	8,810.00	3,812.03	14.23	159.86	-94.77	-1,231.17	-264.84	1,105.53	932.07	173.47	6.373	
4,060.74	3,773.35	8,810.00	3,812.03	14.29	159.86	-94.77	-1,231.17	-264.84	1,106.27	932.75	173.52	6.375	
4,100.00	3,791.80	8,810.00	3,812.03	14.50	159.86	-94.40	-1,231.17	-264.84	1,109.96	936.14	173.82	6.386	
4,150.00	3,811.79	8,810.00	3,812.03	14.77	159.86	-93.70	-1,231.17	-264.84	1,116.93	942.68	174.25	6.410	
4,200.00	3,827.71	8,810.00	3,812.03	15.06	159.86	-92.74	-1,231.17	-264.84	1,126.36	951.66	174.70	6.447	
4,250.00	3,839.44	8,810.00	3,812.03	15.34	159.86	-91.53	-1,231.17	-264.84	1,138.10	962.97	175.13	6.499	
4,300.00	3,846.90	8,810.00	3,812.03	15.63	159.86	-90.08	-1,231.17	-264.84	1,152.01	976.52	175.49	6.565	
4,350.00	3,850.01	8,810.00	3,812.03	15.92	159.86	-88.40	-1,231.17	-264.84	1,167.90	992.18	175.73	6.646	
4,372.09	3,850.00	8,810.00	3,812.03	16.05	159.86	-87.60	-1,231.17	-264.84	1,175.50	999.73	175.78	6.688	
4,400.00	3,849.45	8,810.00	3,812.03	16.21	159.86	-87.60	-1,231.17	-264.84	1,185.60	1,009.67	175.94	6.739	
4,450.00	3,848.46	8,810.00	3,812.03	16.53	159.86	-87.60	-1,231.17	-264.84	1,205.11	1,028.86	176.25	6.837	
4,500.00	3,847.47	8,810.00	3,812.03	16.84	159.86	-87.60	-1,231.17	-264.84	1,226.34	1,049.78	176.57	6.946	
4,550.00	3,846.48	8,810.00	3,812.03	17.18	159.86	-87.60	-1,231.17	-264.84	1,249.22	1,072.31	176.90	7.062	
4,600.00	3,845.49	8,810.00	3,812.03	17.52	159.86	-87.60	-1,231.17	-264.84	1,273.64	1,096.40	177.24	7.186	
4,650.00	3,844.49	8,810.00	3,812.03	17.88	159.86	-87.60	-1,231.17	-264.84	1,299.54	1,121.93	177.60	7.317	
4,700.00	3,843.50	8,810.00	3,812.03	18.24	159.86	-87.60	-1,231.17	-264.84	1,326.81	1,148.85	177.96	7.456	
4,750.00	3,842.51	8,810.00	3,812.03	18.62	159.86	-87.60	-1,231.17	-264.84	1,355.38	1,177.04	178.34	7.600	
4,800.00	3,841.52	8,810.00	3,812.03	19.00	159.86	-87.60	-1,231.17	-264.84	1,385.16	1,206.44	178.72	7.750	
4,850.00	3,840.53	8,810.00	3,812.03	19.40	159.86	-87.60	-1,231.17	-264.84	1,416.09	1,236.97	179.12	7.906	
4,900.00	3,839.54	8,810.00	3,812.03	19.80	159.86	-87.60	-1,231.17	-264.84	1,448.08	1,268.56	179.52	8.067	
4,950.00	3,838.55	8,810.00	3,812.03	20.21	159.86	-87.60	-1,231.17	-264.84	1,481.07	1,301.14	179.93	8.231	
5,000.00	3,837.56	8,810.00	3,812.03	20.63	159.86	-87.60	-1,231.17	-264.84	1,514.99	1,334.65	180.34	8.401	
5,050.00	3,836.57	8,810.00	3,812.03	21.05	159.86	-87.60	-1,231.17	-264.84	1,549.78	1,369.01	180.77	8.573	
5,100.00	3,835.58	8,810.00	3,812.03	21.48	159.86	-87.60	-1,231.17	-264.84	1,585.39	1,404.19	181.20	8.750	
5,150.00	3,834.59	8,810.00	3,812.03	21.92	159.86	-87.60	-1,231.17	-264.84	1,621.75	1,440.12	181.63	8.929	
5,200.00	3,833.60	8,810.00	3,812.03	22.36	159.86	-87.60	-1,231.17	-264.84	1,658.83	1,476.76	182.07	9.111	

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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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 WELCH CD 28 STATE COM - OFFSET: HALBERD 27 STATE COM 1H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 100-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	3,832.61	8,810.00	3,812.03	22.81	159.86	-87.60	-1,231.17	-264.84	1,696.57	1,514.04	182.52	9.295	
5,300.00	3,831.62	8,810.00	3,812.03	23.26	159.86	-87.60	-1,231.17	-264.84	1,734.92	1,551.95	182.97	9.482	
5,350.00	3,830.63	8,810.00	3,812.03	23.71	159.86	-87.60	-1,231.17	-264.84	1,773.86	1,590.44	183.43	9.671	
5,400.00	3,829.64	8,810.00	3,812.03	24.17	159.86	-87.60	-1,231.17	-264.84	1,813.34	1,629.46	183.89	9.861	

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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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												Offset Site Error:	0.00 usft
Survey Program: 512-INC-ONLY												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	
6,850.00	3,800.91	3,755.00	3,762.89	38.73	70.34	-87.03	-588.05	-4,155.38	1,045.62	936.69	108.93	9.599	
6,900.00	3,799.92	3,755.00	3,762.89	39.26	70.34	-87.03	-588.05	-4,155.38	998.81	889.35	109.46	9.125	
6,950.00	3,798.93	3,755.00	3,762.89	39.78	70.34	-87.03	-588.05	-4,155.38	952.32	842.34	109.98	8.659	
7,000.00	3,797.94	3,755.00	3,762.89	40.31	70.34	-87.03	-588.05	-4,155.38	906.21	795.70	110.51	8.200	
7,050.00	3,796.95	3,755.00	3,762.89	40.84	70.34	-87.03	-588.05	-4,155.38	860.52	749.49	111.04	7.750	
7,100.00	3,795.96	3,755.00	3,762.89	41.37	70.34	-87.03	-588.05	-4,155.38	815.35	703.78	111.57	7.308	
7,150.00	3,794.97	3,755.00	3,762.89	41.90	70.34	-87.03	-588.05	-4,155.38	770.78	658.68	112.10	6.876	
7,200.00	3,793.98	3,755.00	3,762.89	42.43	70.34	-87.03	-588.05	-4,155.38	726.90	614.28	112.63	6.454	
7,250.00	3,792.99	3,755.00	3,762.89	42.97	70.34	-87.03	-588.05	-4,155.38	683.88	570.71	113.16	6.043	
7,300.00	3,792.00	3,755.00	3,762.89	43.50	70.34	-87.03	-588.05	-4,155.38	641.86	528.17	113.69	5.646	
7,350.00	3,791.01	3,755.00	3,762.89	44.03	70.34	-87.03	-588.05	-4,155.38	601.06	486.84	114.23	5.262	
7,400.00	3,790.02	3,755.00	3,762.89	44.57	70.34	-87.03	-588.05	-4,155.38	561.76	447.00	114.76	4.895	
7,450.00	3,789.03	3,755.00	3,762.89	45.11	70.34	-87.03	-588.05	-4,155.38	524.28	408.98	115.29	4.547	
7,500.00	3,788.04	3,755.00	3,762.89	45.64	70.34	-87.03	-588.05	-4,155.38	489.04	373.21	115.83	4.222	
7,550.00	3,787.05	3,755.00	3,762.89	46.18	70.34	-87.03	-588.05	-4,155.38	456.57	340.21	116.37	3.924	
7,600.00	3,786.06	3,755.00	3,762.89	46.72	70.34	-87.03	-588.05	-4,155.38	427.50	310.60	116.90	3.657	
7,650.00	3,785.07	3,755.00	3,762.89	47.25	70.34	-87.03	-588.05	-4,155.38	402.56	285.12	117.44	3.428	
7,700.00	3,784.08	3,755.00	3,762.89	47.79	70.34	-87.03	-588.05	-4,155.38	382.55	264.58	117.98	3.243	
7,750.00	3,783.09	3,755.00	3,762.89	48.33	70.34	-87.03	-588.05	-4,155.38	368.30	249.78	118.52	3.108	
7,800.00	3,782.10	3,755.00	3,762.89	48.87	70.34	-87.03	-588.05	-4,155.38	360.47	241.41	119.05	3.028	
7,832.04	3,781.46	3,755.00	3,762.89	49.22	70.34	-87.03	-588.05	-4,155.38	359.04	239.64	119.40	3.007 CC, ES	
7,850.00	3,781.11	3,755.00	3,762.89	49.41	70.34	-87.03	-588.05	-4,155.38	359.49	239.90	119.59	3.006 SF	
7,900.00	3,780.12	3,755.00	3,762.89	49.95	70.34	-87.03	-588.05	-4,155.38	365.42	245.28	120.13	3.042	
7,950.00	3,779.13	3,755.00	3,762.89	50.49	70.34	-87.03	-588.05	-4,155.38	377.92	257.25	120.67	3.132	
8,000.00	3,778.13	3,755.00	3,762.89	51.03	70.34	-87.03	-588.05	-4,155.38	396.38	275.17	121.21	3.270	
8,050.00	3,777.14	3,755.00	3,762.89	51.58	70.34	-87.03	-588.05	-4,155.38	420.02	298.26	121.75	3.450	
8,100.00	3,776.15	3,755.00	3,762.89	52.12	70.34	-87.03	-588.05	-4,155.38	448.01	325.71	122.30	3.663	
8,150.00	3,775.16	3,755.00	3,762.89	52.66	70.34	-87.03	-588.05	-4,155.38	479.59	356.75	122.84	3.904	
8,200.00	3,774.17	3,755.00	3,762.89	53.20	70.34	-87.03	-588.05	-4,155.38	514.10	390.72	123.38	4.167	
8,250.00	3,773.18	3,755.00	3,762.89	53.75	70.34	-87.03	-588.05	-4,155.38	551.00	427.07	123.92	4.446	
8,300.00	3,772.19	3,755.00	3,762.89	54.29	70.34	-87.03	-588.05	-4,155.38	589.83	465.36	124.47	4.739	
8,350.00	3,771.20	3,755.00	3,762.89	54.84	70.34	-87.03	-588.05	-4,155.38	630.23	505.22	125.01	5.041	
8,400.00	3,770.21	3,755.00	3,762.89	55.38	70.34	-87.03	-588.05	-4,155.38	671.93	546.37	125.55	5.352	
8,450.00	3,769.22	3,755.00	3,762.89	55.93	70.34	-87.03	-588.05	-4,155.38	714.69	588.59	126.10	5.668	
8,500.00	3,768.23	3,755.00	3,762.89	56.47	70.34	-87.03	-588.05	-4,155.38	758.34	631.70	126.64	5.988	
8,550.00	3,767.24	3,755.00	3,762.89	57.02	70.34	-87.03	-588.05	-4,155.38	802.73	675.54	127.19	6.311	
8,600.00	3,766.25	3,755.00	3,762.89	57.56	70.34	-87.03	-588.05	-4,155.38	847.74	720.01	127.73	6.637	
8,650.00	3,765.26	3,755.00	3,762.89	58.11	70.34	-87.03	-588.05	-4,155.38	893.29	765.01	128.28	6.964	
8,700.00	3,764.27	3,755.00	3,762.89	58.66	70.34	-87.03	-588.05	-4,155.38	939.29	810.46	128.82	7.291	
8,750.00	3,763.28	3,755.00	3,762.89	59.20	70.34	-87.03	-588.05	-4,155.38	985.67	856.30	129.37	7.619	
8,800.00	3,762.29	3,754.39	3,762.29	59.75	70.33	-86.94	-588.05	-4,155.38	1,032.40	902.51	129.89	7.948	
8,850.00	3,761.30	3,753.40	3,761.30	60.30	70.31	-86.78	-588.05	-4,155.38	1,079.42	949.02	130.40	8.278	
8,900.00	3,760.31	3,752.41	3,760.31	60.85	70.28	-86.62	-588.05	-4,155.38	1,126.69	995.79	130.91	8.607	
8,950.00	3,759.32	3,751.42	3,759.32	61.39	70.26	-86.47	-588.05	-4,155.38	1,174.19	1,042.78	131.41	8.935	
9,000.00	3,758.33	3,750.42	3,758.33	61.94	70.24	-86.31	-588.05	-4,155.38	1,221.89	1,089.97	131.92	9.263	
9,050.00	3,757.34	3,749.43	3,757.34	62.49	70.22	-86.15	-588.05	-4,155.38	1,269.76	1,137.34	132.42	9.589	
9,100.00	3,756.34	3,748.44	3,756.34	63.04	70.20	-85.99	-588.05	-4,155.38	1,317.79	1,184.87	132.92	9.914	

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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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 WELCH CD 28 STATE COM - OFFSET: Red Lake 28 K State 2 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 420-INC-ONLY												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
6,250.00	3,812.80	3,760.00	3,800.94	32.51	67.18	91.12	89.22	-3,487.50	946.11	846.44	99.67	9.492	
6,300.00	3,811.81	3,760.00	3,800.94	33.02	67.18	91.12	89.22	-3,487.50	898.86	798.68	100.18	8.973	
6,350.00	3,810.82	3,760.00	3,800.94	33.53	67.18	91.12	89.22	-3,487.50	851.92	751.23	100.69	8.461	
6,400.00	3,809.83	3,760.00	3,800.94	34.04	67.18	91.12	89.22	-3,487.50	805.36	704.16	101.20	7.958	
6,450.00	3,808.84	3,760.00	3,800.94	34.56	67.18	91.12	89.22	-3,487.50	759.23	657.51	101.72	7.464	
6,500.00	3,807.85	3,760.00	3,800.94	35.07	67.18	91.12	89.22	-3,487.50	713.63	611.39	102.24	6.980	
6,550.00	3,806.86	3,760.00	3,800.94	35.59	67.18	91.12	89.22	-3,487.50	668.65	565.90	102.76	6.507	
6,600.00	3,805.87	3,760.00	3,800.94	36.11	67.18	91.12	89.22	-3,487.50	624.44	521.16	103.27	6.046	
6,650.00	3,804.88	3,760.00	3,800.94	36.63	67.18	91.12	89.22	-3,487.50	581.17	477.37	103.80	5.599	
6,700.00	3,803.89	3,760.00	3,800.94	37.16	67.18	91.12	89.22	-3,487.50	539.06	434.74	104.32	5.167	
6,750.00	3,802.90	3,760.00	3,800.94	37.68	67.18	91.12	89.22	-3,487.50	498.41	393.57	104.84	4.754	
6,800.00	3,801.91	3,760.00	3,800.94	38.20	67.18	91.12	89.22	-3,487.50	459.61	354.25	105.36	4.362	
6,850.00	3,800.91	3,759.97	3,800.91	38.73	67.18	91.12	89.22	-3,487.50	423.17	317.28	105.89	3.996	
6,900.00	3,799.92	3,758.98	3,799.92	39.26	67.16	90.93	89.22	-3,487.50	389.75	283.35	106.40	3.663	
6,950.00	3,798.93	3,757.99	3,798.93	39.78	67.14	90.74	89.22	-3,487.50	360.18	253.27	106.92	3.369	
7,000.00	3,797.94	3,757.00	3,797.94	40.31	67.12	90.55	89.22	-3,487.50	335.49	228.06	107.43	3.123	
7,050.00	3,796.95	3,756.01	3,796.95	40.84	67.10	90.36	89.22	-3,487.50	316.83	208.88	107.94	2.935	
7,100.00	3,795.96	3,755.02	3,795.96	41.37	67.08	90.18	89.22	-3,487.50	305.29	196.83	108.45	2.815	
7,146.82	3,795.04	3,754.09	3,795.04	41.87	67.07	90.00	89.22	-3,487.50	301.68	192.74	108.93	2.769 CC	
7,150.00	3,794.97	3,754.03	3,794.97	41.90	67.06	89.99	89.22	-3,487.50	301.69	192.73	108.97	2.769 ES, SF	
7,200.00	3,793.98	3,753.04	3,793.98	42.43	67.05	89.80	89.22	-3,487.50	306.33	196.85	109.48	2.798	
7,250.00	3,792.99	3,752.05	3,792.99	42.97	67.03	89.61	89.22	-3,487.50	318.83	208.84	109.99	2.899	
7,300.00	3,792.00	3,751.06	3,792.00	43.50	67.01	89.42	89.22	-3,487.50	338.33	227.83	110.50	3.062	
7,350.00	3,791.01	3,750.07	3,791.01	44.03	66.99	89.24	89.22	-3,487.50	363.70	252.69	111.01	3.276	
7,400.00	3,790.02	3,749.08	3,790.02	44.57	66.97	89.05	89.22	-3,487.50	393.81	282.29	111.52	3.531	
7,450.00	3,789.03	3,748.09	3,789.03	45.11	66.95	88.86	89.22	-3,487.50	427.66	315.63	112.03	3.817	
7,500.00	3,788.04	3,747.09	3,788.04	45.64	66.93	88.67	89.22	-3,487.50	464.43	351.89	112.54	4.127	
7,550.00	3,787.05	3,746.10	3,787.05	46.18	66.91	88.48	89.22	-3,487.50	503.49	390.44	113.05	4.454	
7,600.00	3,786.06	3,745.11	3,786.06	46.72	66.89	88.30	89.22	-3,487.50	544.34	430.78	113.56	4.793	
7,650.00	3,785.07	3,744.12	3,785.07	47.25	66.87	88.11	89.22	-3,487.50	586.60	472.54	114.07	5.143	
7,700.00	3,784.08	3,743.13	3,784.08	47.79	66.85	87.92	89.22	-3,487.50	630.00	515.43	114.57	5.499	
7,750.00	3,783.09	3,742.14	3,783.09	48.33	66.83	87.73	89.22	-3,487.50	674.31	559.23	115.08	5.860	
7,800.00	3,782.10	3,741.15	3,782.10	48.87	66.81	87.54	89.22	-3,487.50	719.37	603.78	115.58	6.224	
7,850.00	3,781.11	3,740.16	3,781.11	49.41	66.79	87.36	89.22	-3,487.50	765.04	648.95	116.09	6.590	
7,900.00	3,780.12	3,739.17	3,780.12	49.95	66.77	87.17	89.22	-3,487.50	811.21	694.62	116.59	6.958	
7,950.00	3,779.13	3,738.18	3,779.13	50.49	66.75	86.98	89.22	-3,487.50	857.82	740.72	117.10	7.326	
8,000.00	3,778.13	3,737.19	3,778.13	51.03	66.73	86.79	89.22	-3,487.50	904.79	787.19	117.60	7.694	
8,050.00	3,777.14	3,736.20	3,777.14	51.58	66.72	86.61	89.22	-3,487.50	952.06	833.96	118.10	8.061	
8,100.00	3,776.15	3,735.21	3,776.15	52.12	66.70	86.42	89.22	-3,487.50	999.60	881.00	118.60	8.428	
8,150.00	3,775.16	3,734.22	3,775.16	52.66	66.68	86.23	89.22	-3,487.50	1,047.37	928.27	119.10	8.794	
8,200.00	3,774.17	3,733.23	3,774.17	53.20	66.66	86.04	89.22	-3,487.50	1,095.34	975.74	119.60	9.158	
8,250.00	3,773.18	3,732.24	3,773.18	53.75	66.64	85.86	89.22	-3,487.50	1,143.48	1,023.38	120.10	9.521	
8,300.00	3,772.19	3,731.25	3,772.19	54.29	66.62	85.67	89.22	-3,487.50	1,191.77	1,071.17	120.60	9.882	

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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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												Offset Site Error:	0.00 usft
Survey Program: 420-INC-ONLY												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	
6,850.00	3,800.91	3,753.97	3,800.91	38.73	67.07	93.60	72.49	-4,147.90	1,003.75	898.14	105.61	9.505	
6,900.00	3,799.92	3,752.98	3,799.92	39.26	67.05	93.41	72.49	-4,147.90	956.19	850.05	106.13	9.009	
6,950.00	3,798.93	3,751.99	3,798.93	39.78	67.03	93.22	72.49	-4,147.90	908.88	802.23	106.66	8.521	
7,000.00	3,797.94	3,751.00	3,797.94	40.31	67.02	93.04	72.49	-4,147.90	861.89	754.70	107.18	8.041	
7,050.00	3,796.95	3,750.01	3,796.95	40.84	67.00	92.85	72.49	-4,147.90	815.24	707.53	107.71	7.569	
7,100.00	3,795.96	3,749.02	3,795.96	41.37	66.98	92.66	72.49	-4,147.90	769.02	660.79	108.24	7.105	
7,150.00	3,794.97	3,748.03	3,794.97	41.90	66.96	92.47	72.49	-4,147.90	723.30	614.54	108.76	6.650	
7,200.00	3,793.98	3,747.04	3,793.98	42.43	66.94	92.28	72.49	-4,147.90	678.19	568.90	109.29	6.206	
7,250.00	3,792.99	3,746.05	3,792.99	42.97	66.92	92.10	72.49	-4,147.90	633.80	523.99	109.81	5.772	
7,300.00	3,792.00	3,745.06	3,792.00	43.50	66.90	91.91	72.49	-4,147.90	590.31	479.97	110.34	5.350	
7,350.00	3,791.01	3,744.07	3,791.01	44.03	66.88	91.72	72.49	-4,147.90	547.93	437.07	110.86	4.942	
7,400.00	3,790.02	3,743.08	3,790.02	44.57	66.86	91.53	72.49	-4,147.90	506.94	395.55	111.39	4.551	
7,450.00	3,789.03	3,742.09	3,789.03	45.11	66.84	91.35	72.49	-4,147.90	467.71	355.79	111.91	4.179	
7,500.00	3,788.04	3,741.09	3,788.04	45.64	66.82	91.16	72.49	-4,147.90	430.71	318.27	112.44	3.831	
7,550.00	3,787.05	3,740.10	3,787.05	46.18	66.80	90.97	72.49	-4,147.90	396.56	283.60	112.96	3.511	
7,600.00	3,786.06	3,739.11	3,786.06	46.72	66.78	90.78	72.49	-4,147.90	366.08	252.60	113.48	3.226	
7,650.00	3,785.07	3,738.12	3,785.07	47.25	66.76	90.59	72.49	-4,147.90	340.25	226.24	114.01	2.984	
7,700.00	3,784.08	3,737.13	3,784.08	47.79	66.74	90.40	72.49	-4,147.90	320.18	205.65	114.53	2.796	
7,750.00	3,783.09	3,736.14	3,783.09	48.33	66.72	90.22	72.49	-4,147.90	307.02	191.97	115.05	2.669	
7,800.00	3,782.10	3,735.15	3,782.10	48.87	66.70	90.03	72.49	-4,147.90	301.68	186.10	115.57	2.610	
7,807.56	3,781.95	3,735.00	3,781.95	48.95	66.70	90.00	72.49	-4,147.90	301.58	185.93	115.65	2.608 CC, ES, SF	
7,850.00	3,781.11	3,734.16	3,781.11	49.41	66.68	89.84	72.49	-4,147.90	304.55	188.46	116.09	2.623	
7,900.00	3,780.12	3,733.17	3,780.12	49.95	66.67	89.65	72.49	-4,147.90	315.43	198.81	116.61	2.705	
7,950.00	3,779.13	3,732.18	3,779.13	50.49	66.65	89.46	72.49	-4,147.90	333.52	216.38	117.13	2.847	
8,000.00	3,778.13	3,731.19	3,778.13	51.03	66.63	89.28	72.49	-4,147.90	357.73	240.08	117.65	3.041	
8,050.00	3,777.14	3,730.20	3,777.14	51.58	66.61	89.09	72.49	-4,147.90	386.92	268.75	118.17	3.274	
8,100.00	3,776.15	3,729.21	3,776.15	52.12	66.59	88.90	72.49	-4,147.90	420.05	301.36	118.69	3.539	
8,150.00	3,775.16	3,728.22	3,775.16	52.66	66.57	88.71	72.49	-4,147.90	456.26	337.06	119.20	3.828	
8,200.00	3,774.17	3,727.23	3,774.17	53.20	66.55	88.52	72.49	-4,147.90	494.87	375.16	119.72	4.134	
8,250.00	3,773.18	3,726.24	3,773.18	53.75	66.53	88.34	72.49	-4,147.90	535.38	415.14	120.23	4.453	
8,300.00	3,772.19	3,725.25	3,772.19	54.29	66.51	88.15	72.49	-4,147.90	577.37	456.62	120.75	4.782	
8,350.00	3,771.20	3,724.26	3,771.20	54.84	66.49	87.96	72.49	-4,147.90	620.55	499.29	121.26	5.118	
8,400.00	3,770.21	3,723.27	3,770.21	55.38	66.47	87.77	72.49	-4,147.90	664.68	542.91	121.77	5.458	
8,450.00	3,769.22	3,722.28	3,769.22	55.93	66.45	87.58	72.49	-4,147.90	709.59	587.31	122.28	5.803	
8,500.00	3,768.23	3,721.29	3,768.23	56.47	66.43	87.40	72.49	-4,147.90	755.14	632.35	122.79	6.150	
8,550.00	3,767.24	3,720.30	3,767.24	57.02	66.41	87.21	72.49	-4,147.90	801.22	677.92	123.30	6.498	
8,600.00	3,766.25	3,719.30	3,766.25	57.56	66.39	87.02	72.49	-4,147.90	847.74	723.93	123.81	6.847	
8,650.00	3,765.26	3,718.31	3,765.26	58.11	66.37	86.83	72.49	-4,147.90	894.64	770.32	124.32	7.196	
8,700.00	3,764.27	3,717.32	3,764.27	58.66	66.35	86.65	72.49	-4,147.90	941.85	817.03	124.82	7.546	
8,750.00	3,763.28	3,716.33	3,763.28	59.20	66.33	86.46	72.49	-4,147.90	989.34	864.01	125.33	7.894	
8,800.00	3,762.29	3,715.34	3,762.29	59.75	66.32	86.27	72.49	-4,147.90	1,037.06	911.23	125.83	8.242	
8,850.00	3,761.30	3,714.35	3,761.30	60.30	66.30	86.08	72.49	-4,147.90	1,084.99	958.66	126.33	8.588	
8,900.00	3,760.31	3,713.36	3,760.31	60.85	66.28	85.90	72.49	-4,147.90	1,133.10	1,006.26	126.84	8.934	
8,950.00	3,759.32	3,712.37	3,759.32	61.39	66.26	85.71	72.49	-4,147.90	1,181.36	1,054.02	127.34	9.278	
9,000.00	3,758.33	3,711.38	3,758.33	61.94	66.24	85.52	72.49	-4,147.90	1,229.76	1,101.92	127.83	9.620	
9,050.00	3,757.34	3,710.39	3,757.34	62.49	66.22	85.34	72.49	-4,147.90	1,278.28	1,149.95	128.33	9.961	

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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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 WELCH CD 28 STATE COM - OFFSET: RED LAKE 28 K STATE 4 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 1014-INC-ONLY												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
6,350.00	3,810.82	3,801.86	3,810.82	33.53	60.63	-92.60	-571.32	-3,494.97	895.63	801.57	94.05	9.522	
6,400.00	3,809.83	3,800.86	3,809.83	34.04	60.61	-92.44	-571.32	-3,494.97	850.05	755.49	94.56	8.989	
6,450.00	3,808.84	3,799.87	3,808.84	34.56	60.59	-92.28	-571.32	-3,494.97	805.00	709.93	95.07	8.468	
6,500.00	3,807.85	3,798.88	3,807.85	35.07	60.57	-92.12	-571.32	-3,494.97	760.57	664.99	95.58	7.958	
6,550.00	3,806.86	3,797.89	3,806.86	35.59	60.55	-91.96	-571.32	-3,494.97	716.86	620.78	96.09	7.461	
6,600.00	3,805.87	3,796.90	3,805.87	36.11	60.53	-91.81	-571.32	-3,494.97	674.04	577.44	96.60	6.978	
6,650.00	3,804.88	3,795.91	3,804.88	36.63	60.52	-91.65	-571.32	-3,494.97	632.26	535.15	97.11	6.511	
6,700.00	3,803.89	3,794.92	3,803.89	37.16	60.50	-91.49	-571.32	-3,494.97	591.76	494.14	97.62	6.062	
6,750.00	3,802.90	3,793.93	3,802.90	37.68	60.48	-91.33	-571.32	-3,494.97	552.82	454.69	98.13	5.634	
6,800.00	3,801.91	3,792.94	3,801.91	38.20	60.46	-91.17	-571.32	-3,494.97	515.78	417.14	98.64	5.229	
6,850.00	3,800.91	3,791.95	3,800.91	38.73	60.44	-91.02	-571.32	-3,494.97	481.09	381.94	99.15	4.852	
6,900.00	3,799.92	3,790.96	3,799.92	39.26	60.42	-90.86	-571.32	-3,494.97	449.30	349.63	99.67	4.508	
6,950.00	3,798.93	3,789.97	3,798.93	39.78	60.41	-90.70	-571.32	-3,494.97	421.05	320.87	100.18	4.203	
7,000.00	3,797.94	3,788.98	3,797.94	40.31	60.39	-90.54	-571.32	-3,494.97	397.12	296.42	100.69	3.944	
7,050.00	3,796.95	3,787.99	3,796.95	40.84	60.37	-90.38	-571.32	-3,494.97	378.31	277.10	101.21	3.738	
7,100.00	3,795.96	3,787.00	3,795.96	41.37	60.35	-90.22	-571.32	-3,494.97	365.41	263.69	101.72	3.592	
7,150.00	3,794.97	3,786.01	3,794.97	41.90	60.33	-90.07	-571.32	-3,494.97	359.08	256.84	102.23	3.512	
7,170.92	3,794.56	3,785.59	3,794.56	42.13	60.33	-90.00	-571.32	-3,494.97	358.47	256.02	102.45	3.499	CC, ES, SF
7,200.00	3,793.98	3,785.02	3,793.98	42.43	60.31	-89.91	-571.32	-3,494.97	359.64	256.90	102.75	3.500	
7,250.00	3,792.99	3,784.03	3,792.99	42.97	60.30	-89.75	-571.32	-3,494.97	367.08	263.82	103.26	3.555	
7,300.00	3,792.00	3,783.04	3,792.00	43.50	60.28	-89.59	-571.32	-3,494.97	380.99	277.22	103.77	3.671	
7,350.00	3,791.01	3,782.05	3,791.01	44.03	60.26	-89.43	-571.32	-3,494.97	400.69	296.40	104.29	3.842	
7,400.00	3,790.02	3,781.06	3,790.02	44.57	60.24	-89.27	-571.32	-3,494.97	425.39	320.59	104.80	4.059	
7,450.00	3,789.03	3,780.07	3,789.03	45.11	60.22	-89.12	-571.32	-3,494.97	454.26	348.95	105.31	4.313	
7,500.00	3,788.04	3,779.07	3,788.04	45.64	60.20	-88.96	-571.32	-3,494.97	486.57	380.74	105.83	4.598	
7,550.00	3,787.05	3,778.08	3,787.05	46.18	60.19	-88.80	-571.32	-3,494.97	521.67	415.33	106.34	4.906	
7,600.00	3,786.06	3,777.09	3,786.06	46.72	60.17	-88.64	-571.32	-3,494.97	559.05	452.19	106.85	5.232	
7,650.00	3,785.07	3,776.10	3,785.07	47.25	60.15	-88.48	-571.32	-3,494.97	598.27	490.90	107.36	5.572	
7,700.00	3,784.08	3,775.11	3,784.08	47.79	60.13	-88.33	-571.32	-3,494.97	638.99	531.12	107.88	5.923	
7,750.00	3,783.09	3,774.12	3,783.09	48.33	60.11	-88.17	-571.32	-3,494.97	680.95	572.56	108.39	6.283	
7,800.00	3,782.10	3,773.13	3,782.10	48.87	60.09	-88.01	-571.32	-3,494.97	723.93	615.03	108.90	6.648	
7,850.00	3,781.11	3,772.14	3,781.11	49.41	60.08	-87.85	-571.32	-3,494.97	767.76	658.35	109.41	7.017	
7,900.00	3,780.12	3,771.15	3,780.12	49.95	60.06	-87.69	-571.32	-3,494.97	812.31	702.39	109.92	7.390	
7,950.00	3,779.13	3,770.16	3,779.13	50.49	60.04	-87.54	-571.32	-3,494.97	857.45	747.02	110.43	7.765	
8,000.00	3,778.13	3,769.17	3,778.13	51.03	60.02	-87.38	-571.32	-3,494.97	903.10	792.16	110.94	8.140	
8,050.00	3,777.14	3,768.18	3,777.14	51.58	60.00	-87.22	-571.32	-3,494.97	949.19	837.74	111.45	8.517	
8,100.00	3,776.15	3,767.19	3,776.15	52.12	59.99	-87.06	-571.32	-3,494.97	995.66	883.70	111.96	8.893	
8,150.00	3,775.16	3,766.20	3,775.16	52.66	59.97	-86.90	-571.32	-3,494.97	1,042.45	929.99	112.47	9.269	
8,200.00	3,774.17	3,765.21	3,774.17	53.20	59.95	-86.75	-571.32	-3,494.97	1,089.53	976.56	112.97	9.644	

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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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 WELCH CD 28 STATE COM - OFFSET: RED LAKE 28 N STATE 2 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 535-INC-ONLY												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
7,500.00	3,788.04	3,760.00	3,776.94	45.64	65.65	-89.73	-1,287.50	-4,118.40	1,103.86	992.58	111.28	9.919	
7,550.00	3,787.05	3,760.00	3,776.94	46.18	65.65	-89.73	-1,287.50	-4,118.40	1,090.77	978.95	111.82	9.755	
7,600.00	3,786.06	3,760.00	3,776.94	46.72	65.65	-89.73	-1,287.50	-4,118.40	1,079.83	967.47	112.36	9.611	
7,650.00	3,785.07	3,760.00	3,776.94	47.25	65.65	-89.73	-1,287.50	-4,118.40	1,071.12	958.22	112.90	9.488	
7,700.00	3,784.08	3,760.00	3,776.94	47.79	65.65	-89.73	-1,287.50	-4,118.40	1,064.68	951.25	113.43	9.386	
7,750.00	3,783.09	3,760.00	3,776.94	48.33	65.65	-89.73	-1,287.50	-4,118.40	1,060.57	946.60	113.97	9.305	
7,800.00	3,782.10	3,760.00	3,776.94	48.87	65.65	-89.73	-1,287.50	-4,118.40	1,058.80	944.29	114.51	9.246	
7,812.41	3,781.85	3,760.00	3,776.94	49.00	65.65	-89.73	-1,287.50	-4,118.40	1,058.73	944.08	114.65	9.235 CC, ES	
7,850.00	3,781.11	3,760.00	3,776.94	49.41	65.65	-89.73	-1,287.50	-4,118.40	1,059.40	944.34	115.05	9.208	
7,900.00	3,780.12	3,760.00	3,776.94	49.95	65.65	-89.73	-1,287.50	-4,118.40	1,062.35	946.75	115.59	9.190 SF	
7,950.00	3,779.13	3,760.00	3,776.94	50.49	65.65	-89.73	-1,287.50	-4,118.40	1,067.63	951.50	116.14	9.193	
8,000.00	3,778.13	3,760.00	3,776.94	51.03	65.65	-89.73	-1,287.50	-4,118.40	1,075.22	958.54	116.68	9.215	
8,050.00	3,777.14	3,760.00	3,776.94	51.58	65.65	-89.73	-1,287.50	-4,118.40	1,085.06	967.84	117.22	9.257	
8,100.00	3,776.15	3,759.21	3,776.15	52.12	65.63	-89.69	-1,287.50	-4,118.40	1,097.09	979.35	117.75	9.317	
8,150.00	3,775.16	3,758.22	3,775.16	52.66	65.61	-89.64	-1,287.50	-4,118.40	1,111.25	992.98	118.27	9.396	
8,200.00	3,774.17	3,757.23	3,774.17	53.20	65.60	-89.58	-1,287.50	-4,118.40	1,127.44	1,008.65	118.79	9.491	
8,250.00	3,773.18	3,756.24	3,773.18	53.75	65.58	-89.53	-1,287.50	-4,118.40	1,145.59	1,026.27	119.32	9.601	
8,300.00	3,772.19	3,755.25	3,772.19	54.29	65.56	-89.48	-1,287.50	-4,118.40	1,165.60	1,045.76	119.84	9.726	
8,350.00	3,771.20	3,754.26	3,771.20	54.84	65.54	-89.42	-1,287.50	-4,118.40	1,187.38	1,067.01	120.37	9.865	

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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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												Offset Site Error:	0.00 usft
Survey Program: 405-INC-ONLY												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
6,850.00	3,800.91	3,754.02	3,800.91	38.73	70.55	-90.38	-1,231.86	-3,502.40	1,075.42	966.15	109.28	9.841	
6,900.00	3,799.92	3,753.03	3,799.92	39.26	70.53	-90.33	-1,231.86	-3,502.40	1,060.45	950.67	109.78	9.659	
6,950.00	3,798.93	3,752.04	3,798.93	39.78	70.51	-90.27	-1,231.86	-3,502.40	1,047.65	937.36	110.29	9.499	
7,000.00	3,797.94	3,751.04	3,797.94	40.31	70.49	-90.22	-1,231.86	-3,502.40	1,037.10	926.30	110.80	9.360	
7,050.00	3,796.95	3,750.05	3,796.95	40.84	70.47	-90.16	-1,231.86	-3,502.40	1,028.87	917.57	111.31	9.243	
7,100.00	3,795.96	3,749.06	3,795.96	41.37	70.45	-90.11	-1,231.86	-3,502.40	1,023.03	911.21	111.82	9.149	
7,150.00	3,794.97	3,748.07	3,794.97	41.90	70.43	-90.05	-1,231.86	-3,502.40	1,019.60	907.27	112.33	9.077	
7,194.99	3,794.08	3,747.18	3,794.08	42.38	70.41	-90.00	-1,231.86	-3,502.40	1,018.61	905.82	112.79	9.031 CC	
7,200.00	3,793.98	3,747.08	3,793.98	42.43	70.41	-89.99	-1,231.86	-3,502.40	1,018.62	905.78	112.84	9.027 ES	
7,250.00	3,792.99	3,746.09	3,792.99	42.97	70.39	-89.94	-1,231.86	-3,502.40	1,020.09	906.74	113.35	8.999	
7,300.00	3,792.00	3,745.10	3,792.00	43.50	70.36	-89.88	-1,231.86	-3,502.40	1,024.01	910.14	113.86	8.993 SF	
7,350.00	3,791.01	3,744.11	3,791.01	44.03	70.34	-89.83	-1,231.86	-3,502.40	1,030.33	915.96	114.38	9.008	
7,400.00	3,790.02	3,743.12	3,790.02	44.57	70.32	-89.77	-1,231.86	-3,502.40	1,039.03	924.14	114.89	9.044	
7,450.00	3,789.03	3,742.13	3,789.03	45.11	70.30	-89.72	-1,231.86	-3,502.40	1,050.03	934.63	115.40	9.099	
7,500.00	3,788.04	3,741.14	3,788.04	45.64	70.28	-89.66	-1,231.86	-3,502.40	1,063.28	947.36	115.92	9.173	
7,550.00	3,787.05	3,740.15	3,787.05	46.18	70.26	-89.60	-1,231.86	-3,502.40	1,078.68	962.25	116.43	9.264	
7,600.00	3,786.06	3,739.16	3,786.06	46.72	70.24	-89.55	-1,231.86	-3,502.40	1,096.15	979.20	116.95	9.373	
7,650.00	3,785.07	3,738.17	3,785.07	47.25	70.22	-89.49	-1,231.86	-3,502.40	1,115.58	998.12	117.46	9.497	
7,700.00	3,784.08	3,737.18	3,784.08	47.79	70.20	-89.44	-1,231.86	-3,502.40	1,136.88	1,018.90	117.98	9.636	
7,750.00	3,783.09	3,736.19	3,783.09	48.33	70.18	-89.38	-1,231.86	-3,502.40	1,159.95	1,041.45	118.50	9.789	
7,800.00	3,782.10	3,735.20	3,782.10	48.87	70.16	-89.33	-1,231.86	-3,502.40	1,184.68	1,065.66	119.01	9.954	

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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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												Offset Site Error:	0.00 usft
Survey Program: 542-INC-ONLY												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	
8,400.00	3,770.21	3,760.93	3,770.21	55.38	70.78	-90.30	-1,461.06	-5,016.40	1,249.83	1,123.68	126.15	9.907	
8,450.00	3,769.22	3,759.94	3,769.22	55.93	70.76	-90.25	-1,461.06	-5,016.40	1,238.20	1,111.52	126.68	9.774	
8,500.00	3,768.23	3,758.94	3,768.23	56.47	70.74	-90.20	-1,461.06	-5,016.40	1,228.49	1,101.28	127.21	9.658	
8,550.00	3,767.24	3,757.95	3,767.24	57.02	70.72	-90.15	-1,461.06	-5,016.40	1,220.75	1,093.02	127.73	9.557	
8,600.00	3,766.25	3,756.96	3,766.25	57.56	70.70	-90.11	-1,461.06	-5,016.40	1,215.02	1,086.77	128.26	9.473	
8,650.00	3,765.26	3,755.97	3,765.26	58.11	70.68	-90.06	-1,461.06	-5,016.40	1,211.33	1,082.55	128.78	9.406	
8,700.00	3,764.27	3,754.98	3,764.27	58.66	70.66	-90.01	-1,461.06	-5,016.40	1,209.70	1,080.39	129.31	9.355	
8,714.58	3,763.98	3,754.69	3,763.98	58.82	70.65	-90.00	-1,461.06	-5,016.40	1,209.61	1,080.15	129.46	9.343	CC, ES
8,750.00	3,763.28	3,753.99	3,763.28	59.20	70.63	-89.97	-1,461.06	-5,016.40	1,210.13	1,080.29	129.84	9.320	
8,800.00	3,762.29	3,753.00	3,762.29	59.75	70.61	-89.92	-1,461.06	-5,016.40	1,212.62	1,082.26	130.36	9.302	
8,850.00	3,761.30	3,752.01	3,761.30	60.30	70.59	-89.87	-1,461.06	-5,016.40	1,217.17	1,086.27	130.89	9.299	SF
8,900.00	3,760.31	3,751.02	3,760.31	60.85	70.57	-89.83	-1,461.06	-5,016.40	1,223.73	1,092.32	131.42	9.312	
8,950.00	3,759.32	3,750.03	3,759.32	61.39	70.55	-89.78	-1,461.06	-5,016.40	1,232.30	1,100.35	131.94	9.339	
9,000.00	3,758.33	3,749.04	3,758.33	61.94	70.53	-89.73	-1,461.06	-5,016.40	1,242.82	1,110.34	132.47	9.382	
9,050.00	3,757.34	3,748.05	3,757.34	62.49	70.51	-89.69	-1,461.06	-5,016.40	1,255.24	1,122.24	133.00	9.438	
9,100.00	3,756.34	3,747.06	3,756.34	63.04	70.49	-89.64	-1,461.06	-5,016.40	1,269.51	1,135.98	133.53	9.507	
9,150.00	3,755.35	3,746.07	3,755.35	63.59	70.47	-89.59	-1,461.06	-5,016.40	1,285.56	1,151.51	134.06	9.590	
9,200.00	3,754.36	3,745.08	3,754.36	64.14	70.45	-89.54	-1,461.06	-5,016.40	1,303.34	1,168.76	134.58	9.684	
9,250.00	3,753.37	3,744.09	3,753.37	64.69	70.43	-89.50	-1,461.06	-5,016.40	1,322.77	1,187.66	135.11	9.790	
9,300.00	3,752.38	3,743.10	3,752.38	65.24	70.41	-89.45	-1,461.06	-5,016.40	1,343.78	1,208.14	135.64	9.907	

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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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 WELCH CD 28 STATE COM - OFFSET: SUNRAY-STATE 1 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 770-INC-ONLY												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
2,400.00	2,388.53	2,382.56	2,388.53	8.49	36.56	46.44	-487.95	367.92	443.54	398.69	44.85	9.889	
2,450.00	2,438.22	2,432.25	2,438.22	8.67	37.51	46.96	-487.95	367.92	439.75	393.77	45.98	9.564	
2,500.00	2,487.92	2,481.95	2,487.92	8.85	38.46	47.48	-487.95	367.92	436.00	388.90	47.11	9.256	
2,550.00	2,537.62	2,531.65	2,537.62	9.04	39.41	48.02	-487.95	367.92	432.29	384.04	48.25	8.960	
2,600.00	2,587.31	2,581.35	2,587.31	9.22	40.38	48.57	-487.95	367.92	428.62	379.22	49.39	8.677	
2,650.00	2,637.01	2,631.04	2,637.01	9.41	41.37	49.12	-487.95	367.92	424.98	374.42	50.56	8.405	
2,700.00	2,686.70	2,680.74	2,686.70	9.59	42.36	49.68	-487.95	367.92	421.39	369.65	51.74	8.145	
2,750.00	2,736.40	2,730.44	2,736.40	9.77	43.31	50.26	-487.95	367.92	417.84	364.97	52.87	7.903	
2,763.23	2,749.55	2,743.59	2,749.55	9.82	43.55	50.41	-487.95	367.92	416.91	363.75	53.16	7.843	
2,800.00	2,786.16	2,780.20	2,786.16	9.96	44.23	39.88	-487.95	367.92	414.54	360.54	54.00	7.677	
2,850.00	2,836.08	2,830.12	2,836.08	10.13	45.13	-1.65	-487.95	367.92	412.04	356.92	55.12	7.476	
2,900.00	2,886.03	2,880.07	2,886.03	10.30	46.03	-63.16	-487.95	367.92	410.34	354.13	56.20	7.301	
2,950.00	2,935.87	2,929.91	2,935.87	10.46	46.94	-85.09	-487.95	367.92	409.46	352.19	57.28	7.149	
2,973.60	2,959.32	2,953.36	2,959.32	10.53	47.38	-90.00	-487.95	367.92	409.36	351.58	57.78	7.085 CC	
3,000.00	2,985.47	2,979.51	2,985.47	10.61	47.86	-93.90	-487.95	367.92	409.50	351.16	58.33	7.020 ES	
3,050.00	3,034.69	3,028.73	3,034.69	10.77	48.78	-99.01	-487.95	367.92	410.54	351.17	59.37	6.915	
3,100.00	3,083.39	3,077.44	3,083.39	10.92	49.71	-102.74	-487.95	367.92	412.75	352.39	60.36	6.838	
3,150.00	3,131.45	3,125.50	3,131.45	11.06	50.65	-105.87	-487.95	367.92	416.31	354.99	61.31	6.790	
3,200.00	3,178.73	3,172.78	3,178.73	11.21	51.60	-108.70	-487.95	367.92	421.40	359.20	62.20	6.775 SF	
3,250.00	3,225.10	3,219.15	3,225.10	11.35	52.53	-111.36	-487.95	367.92	428.25	365.27	62.98	6.799	
3,300.00	3,270.44	3,264.49	3,270.44	11.49	53.47	-113.88	-487.95	367.92	437.07	373.42	63.65	6.867	
3,350.00	3,314.62	3,308.67	3,314.62	11.63	54.38	-116.27	-487.95	367.92	448.03	383.86	64.17	6.982	
3,400.00	3,357.51	3,351.57	3,357.51	11.77	55.29	-118.52	-487.95	367.92	461.33	396.77	64.55	7.146	
3,450.00	3,399.01	3,400.00	3,405.94	11.90	56.32	-121.05	-487.95	367.92	477.13	412.30	64.82	7.360	
3,500.00	3,438.99	3,433.05	3,438.99	12.05	57.04	-122.51	-487.95	367.92	495.37	430.53	64.84	7.640	
3,550.00	3,477.36	3,471.42	3,477.36	12.20	57.88	-124.19	-487.95	367.92	516.26	451.48	64.77	7.970	
3,600.00	3,513.99	3,508.06	3,513.99	12.35	58.69	-125.65	-487.95	367.92	539.74	475.15	64.59	8.357	
3,650.00	3,548.80	3,542.87	3,548.80	12.52	59.49	-126.85	-487.95	367.92	565.77	501.43	64.34	8.793	
3,700.00	3,581.68	3,575.75	3,581.68	12.69	60.25	-127.77	-487.95	367.92	594.29	530.25	64.05	9.279	
3,750.00	3,612.56	3,606.63	3,612.56	12.87	60.98	-128.40	-487.95	367.92	625.20	561.42	63.77	9.804	

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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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 WELCH CD 28 STATE COM - OFFSET: TIGNER STATE 1 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 511-INC-ONLY												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
7,600.00	3,786.06	3,550.00	3,595.92	46.72	64.10	60.17	55.80	-4,808.30	938.47	841.30	97.16	9.659	
7,650.00	3,785.07	3,550.00	3,595.92	47.25	64.10	60.17	55.80	-4,808.30	892.21	794.57	97.65	9.137	
7,700.00	3,784.08	3,550.00	3,595.92	47.79	64.10	60.17	55.80	-4,808.30	846.39	748.26	98.13	8.625	
7,750.00	3,783.09	3,550.00	3,595.92	48.33	64.10	60.17	55.80	-4,808.30	801.06	702.45	98.62	8.123	
7,800.00	3,782.10	3,550.00	3,595.92	48.87	64.10	60.17	55.80	-4,808.30	756.33	657.23	99.10	7.632	
7,850.00	3,781.11	3,550.00	3,595.92	49.41	64.10	60.17	55.80	-4,808.30	712.29	612.71	99.58	7.153	
7,900.00	3,780.12	3,550.00	3,595.92	49.95	64.10	60.17	55.80	-4,808.30	669.09	569.02	100.07	6.686	
7,950.00	3,779.13	3,550.00	3,595.92	50.49	64.10	60.17	55.80	-4,808.30	626.91	526.35	100.56	6.234	
8,000.00	3,778.13	3,550.00	3,595.92	51.03	64.10	60.17	55.80	-4,808.30	585.95	484.91	101.04	5.799	
8,050.00	3,777.14	3,550.00	3,595.92	51.58	64.10	60.17	55.80	-4,808.30	546.50	444.98	101.53	5.383	
8,100.00	3,776.15	3,550.00	3,595.92	52.12	64.10	60.17	55.80	-4,808.30	508.91	406.90	102.01	4.989	
8,150.00	3,775.16	3,550.00	3,595.92	52.66	64.10	60.17	55.80	-4,808.30	473.63	371.12	102.50	4.621	
8,200.00	3,774.17	3,550.00	3,595.92	53.20	64.10	60.17	55.80	-4,808.30	441.19	338.20	102.99	4.284	
8,250.00	3,773.18	3,550.00	3,595.92	53.75	64.10	60.17	55.80	-4,808.30	412.28	308.80	103.48	3.984	
8,300.00	3,772.19	3,550.00	3,595.92	54.29	64.10	60.17	55.80	-4,808.30	387.69	283.72	103.97	3.729	
8,350.00	3,771.20	3,550.00	3,595.92	54.84	64.10	60.17	55.80	-4,808.30	368.28	263.83	104.45	3.526	
8,400.00	3,770.21	3,550.00	3,595.92	55.38	64.10	60.17	55.80	-4,808.30	354.91	249.96	104.94	3.382	
8,450.00	3,769.22	3,550.00	3,595.92	55.93	64.10	60.17	55.80	-4,808.30	348.26	242.83	105.43	3.303	
8,471.73	3,768.79	3,550.00	3,595.92	56.16	64.10	60.17	55.80	-4,808.30	347.58	241.94	105.64	3.290	CC, ES, SF
8,500.00	3,768.23	3,550.00	3,595.92	56.47	64.10	60.17	55.80	-4,808.30	348.73	242.81	105.92	3.292	
8,550.00	3,767.24	3,550.00	3,595.92	57.02	64.10	60.17	55.80	-4,808.30	356.29	249.88	106.41	3.348	
8,600.00	3,766.25	3,550.00	3,595.92	57.56	64.10	60.17	55.80	-4,808.30	370.50	263.60	106.90	3.466	
8,650.00	3,765.26	3,550.00	3,595.92	58.11	64.10	60.17	55.80	-4,808.30	390.63	283.24	107.39	3.638	
8,700.00	3,764.27	3,550.00	3,595.92	58.66	64.10	60.17	55.80	-4,808.30	415.84	307.96	107.88	3.855	
8,750.00	3,763.28	3,550.00	3,595.92	59.20	64.10	60.17	55.80	-4,808.30	445.25	336.88	108.37	4.109	
8,800.00	3,762.29	3,550.00	3,595.92	59.75	64.10	60.17	55.80	-4,808.30	478.10	369.24	108.86	4.392	
8,850.00	3,761.30	3,550.00	3,595.92	60.30	64.10	60.17	55.80	-4,808.30	513.72	404.36	109.35	4.698	
8,900.00	3,760.31	3,550.00	3,595.92	60.85	64.10	60.17	55.80	-4,808.30	551.57	441.73	109.84	5.021	
8,950.00	3,759.32	3,550.00	3,595.92	61.39	64.10	60.17	55.80	-4,808.30	591.24	480.90	110.34	5.358	
9,000.00	3,758.33	3,550.00	3,595.92	61.94	64.10	60.17	55.80	-4,808.30	632.37	521.54	110.83	5.706	
9,050.00	3,757.34	3,550.00	3,595.92	62.49	64.10	60.17	55.80	-4,808.30	674.70	563.38	111.32	6.061	
9,100.00	3,756.34	3,550.00	3,595.92	63.04	64.10	60.17	55.80	-4,808.30	718.01	606.20	111.81	6.422	
9,150.00	3,755.35	3,550.00	3,595.92	63.59	64.10	60.17	55.80	-4,808.30	762.15	649.84	112.30	6.786	
9,200.00	3,754.36	3,550.00	3,595.92	64.14	64.10	60.17	55.80	-4,808.30	806.97	694.17	112.80	7.154	
9,250.00	3,753.37	3,550.00	3,595.92	64.69	64.10	60.17	55.80	-4,808.30	852.36	739.07	113.29	7.524	
9,300.00	3,752.38	3,550.00	3,595.92	65.24	64.10	60.17	55.80	-4,808.30	898.25	784.47	113.78	7.894	
9,350.00	3,751.39	3,550.00	3,595.92	65.79	64.10	60.17	55.80	-4,808.30	944.55	830.28	114.28	8.266	
9,370.26	3,750.99	3,550.00	3,595.92	66.01	64.10	60.17	55.80	-4,808.30	963.42	848.94	114.48	8.416	
9,400.00	3,750.40	3,550.00	3,595.92	66.34	64.10	60.17	55.80	-4,808.30	991.22	876.45	114.77	8.637	
9,420.28	3,750.00	3,550.00	3,595.92	66.56	64.10	60.17	55.80	-4,808.30	1,010.23	895.27	114.97	8.787	

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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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												Offset Site Error:	0.00 usft
Survey Program: 380-INC-ONLY												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	
8,150.00	3,775.16	3,535.00	3,564.86	52.66	68.01	-61.92	-620.22	-5,426.15	1,039.69	932.26	107.43	9.678	
8,200.00	3,774.17	3,535.00	3,564.86	53.20	68.01	-61.92	-620.22	-5,426.15	993.86	885.95	107.91	9.210	
8,250.00	3,773.18	3,535.00	3,564.86	53.75	68.01	-61.92	-620.22	-5,426.15	948.46	840.06	108.40	8.749	
8,300.00	3,772.19	3,535.00	3,564.86	54.29	68.01	-61.92	-620.22	-5,426.15	903.54	794.65	108.89	8.298	
8,350.00	3,771.20	3,535.00	3,564.86	54.84	68.01	-61.92	-620.22	-5,426.15	859.18	749.80	109.38	7.855	
8,400.00	3,770.21	3,535.00	3,564.86	55.38	68.01	-61.92	-620.22	-5,426.15	815.48	705.61	109.87	7.422	
8,450.00	3,769.22	3,535.00	3,564.86	55.93	68.01	-61.92	-620.22	-5,426.15	772.54	662.18	110.36	7.000	
8,500.00	3,768.23	3,535.00	3,564.86	56.47	68.01	-61.92	-620.22	-5,426.15	730.50	619.65	110.85	6.590	
8,550.00	3,767.24	3,535.00	3,564.86	57.02	68.01	-61.92	-620.22	-5,426.15	689.52	578.18	111.34	6.193	
8,600.00	3,766.25	3,535.00	3,564.86	57.56	68.01	-61.92	-620.22	-5,426.15	649.81	537.98	111.83	5.811	
8,650.00	3,765.26	3,535.00	3,564.86	58.11	68.01	-61.92	-620.22	-5,426.15	611.60	499.28	112.32	5.445	
8,700.00	3,764.27	3,535.00	3,564.86	58.66	68.01	-61.92	-620.22	-5,426.15	575.21	462.40	112.81	5.099	
8,750.00	3,763.28	3,535.00	3,564.86	59.20	68.01	-61.92	-620.22	-5,426.15	541.00	427.69	113.30	4.775	
8,800.00	3,762.29	3,535.00	3,564.86	59.75	68.01	-61.92	-620.22	-5,426.15	509.40	395.61	113.80	4.476	
8,850.00	3,761.30	3,535.00	3,564.86	60.30	68.01	-61.92	-620.22	-5,426.15	480.94	366.65	114.29	4.208	
8,900.00	3,760.31	3,535.00	3,564.86	60.85	68.01	-61.92	-620.22	-5,426.15	456.19	341.41	114.78	3.974	
8,950.00	3,759.32	3,535.00	3,564.86	61.39	68.01	-61.92	-620.22	-5,426.15	435.80	320.53	115.27	3.781	
9,000.00	3,758.33	3,535.00	3,564.86	61.94	68.01	-61.92	-620.22	-5,426.15	420.40	304.63	115.77	3.631	
9,050.00	3,757.34	3,535.00	3,564.86	62.49	68.01	-61.92	-620.22	-5,426.15	410.54	294.28	116.26	3.531	
9,100.00	3,756.34	3,535.00	3,564.86	63.04	68.01	-61.92	-620.22	-5,426.15	406.64	289.88	116.75	3.483	
9,106.89	3,756.21	3,535.00	3,564.86	63.12	68.01	-61.92	-620.22	-5,426.15	406.58	289.76	116.82	3.480 CC, ES, SF	
9,150.00	3,755.35	3,535.00	3,564.86	63.59	68.01	-61.92	-620.22	-5,426.15	408.86	291.61	117.25	3.487	
9,200.00	3,754.36	3,535.00	3,564.86	64.14	68.01	-61.92	-620.22	-5,426.15	417.10	299.36	117.74	3.543	
9,250.00	3,753.37	3,535.00	3,564.86	64.69	68.01	-61.92	-620.22	-5,426.15	431.03	312.80	118.23	3.646	
9,300.00	3,752.38	3,535.00	3,564.86	65.24	68.01	-61.92	-620.22	-5,426.15	450.11	331.38	118.73	3.791	
9,350.00	3,751.39	3,535.00	3,564.86	65.79	68.01	-61.92	-620.22	-5,426.15	473.72	354.49	119.22	3.973	
9,370.26	3,750.99	3,535.00	3,564.86	66.01	68.01	-61.92	-620.22	-5,426.15	484.42	365.00	119.42	4.056	
9,400.00	3,750.40	3,535.00	3,564.86	66.34	68.01	-61.92	-620.22	-5,426.15	501.22	381.50	119.71	4.187	
9,420.28	3,750.00	3,535.00	3,564.86	66.56	68.01	-61.92	-620.22	-5,426.15	513.34	393.43	119.92	4.281	

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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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													WELCH CD 28 STATE COM - OFFSET: TIGNER STATE 3 - Wellbore #1 - Wellbore #1		Offset Site Error:		0.00 usft	
Survey Program: 380-INC-ONLY													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)										
8,000.00	3,778.13	3,665.00	3,716.55	51.03	71.24	82.59	39.06	-5,468.70	1,169.99	1,048.66	121.33	9.643	CC, ES, SF					
8,050.00	3,777.14	3,665.00	3,716.55	51.58	71.24	82.59	39.06	-5,468.70	1,121.78	999.92	121.87	9.205						
8,100.00	3,776.15	3,665.00	3,716.55	52.12	71.24	82.59	39.06	-5,468.70	1,073.74	951.33	122.41	8.772						
8,150.00	3,775.16	3,665.00	3,716.55	52.66	71.24	82.59	39.06	-5,468.70	1,025.88	902.94	122.95	8.344						
8,200.00	3,774.17	3,665.00	3,716.55	53.20	71.24	82.59	39.06	-5,468.70	978.24	854.75	123.49	7.922						
8,250.00	3,773.18	3,665.00	3,716.55	53.75	71.24	82.59	39.06	-5,468.70	930.85	806.82	124.03	7.505						
8,300.00	3,772.19	3,665.00	3,716.55	54.29	71.24	82.59	39.06	-5,468.70	883.74	759.17	124.57	7.094						
8,350.00	3,771.20	3,665.00	3,716.55	54.84	71.24	82.59	39.06	-5,468.70	836.96	711.85	125.11	6.690						
8,400.00	3,770.21	3,665.00	3,716.55	55.38	71.24	82.59	39.06	-5,468.70	790.59	664.94	125.65	6.292						
8,450.00	3,769.22	3,665.00	3,716.55	55.93	71.24	82.59	39.06	-5,468.70	744.68	618.48	126.19	5.901						
8,500.00	3,768.23	3,665.00	3,716.55	56.47	71.24	82.59	39.06	-5,468.70	699.33	572.59	126.74	5.518						
8,550.00	3,767.24	3,665.00	3,716.55	57.02	71.24	82.59	39.06	-5,468.70	654.66	527.38	127.28	5.143						
8,600.00	3,766.25	3,665.00	3,716.55	57.56	71.24	82.59	39.06	-5,468.70	610.82	483.00	127.82	4.779						
8,650.00	3,765.26	3,665.00	3,716.55	58.11	71.24	82.59	39.06	-5,468.70	568.00	439.63	128.37	4.425						
8,700.00	3,764.27	3,665.00	3,716.55	58.66	71.24	82.59	39.06	-5,468.70	526.44	397.53	128.91	4.084						
8,750.00	3,763.28	3,665.00	3,716.55	59.20	71.24	82.59	39.06	-5,468.70	486.47	357.02	129.45	3.758						
8,800.00	3,762.29	3,665.00	3,716.55	59.75	71.24	82.59	39.06	-5,468.70	448.52	318.53	130.00	3.450						
8,850.00	3,761.30	3,665.00	3,716.55	60.30	71.24	82.59	39.06	-5,468.70	413.15	282.61	130.54	3.165						
8,900.00	3,760.31	3,665.00	3,716.55	60.85	71.24	82.59	39.06	-5,468.70	381.06	249.98	131.09	2.907						
8,950.00	3,759.32	3,665.00	3,716.55	61.39	71.24	82.59	39.06	-5,468.70	353.17	221.54	131.63	2.683						
9,000.00	3,758.33	3,665.00	3,716.55	61.94	71.24	82.59	39.06	-5,468.70	330.52	198.35	132.18	2.501						
9,050.00	3,757.34	3,665.00	3,716.55	62.49	71.24	82.59	39.06	-5,468.70	314.27	181.54	132.72	2.368						
9,100.00	3,756.34	3,665.00	3,716.55	63.04	71.24	82.59	39.06	-5,468.70	305.42	172.15	133.27	2.292						
9,129.82	3,755.75	3,665.00	3,716.55	63.37	71.24	82.59	39.06	-5,468.70	303.96	170.37	133.60	2.275						
9,150.00	3,755.35	3,665.00	3,716.55	63.59	71.24	82.59	39.06	-5,468.70	304.63	170.82	133.82	2.277						
9,200.00	3,754.36	3,665.00	3,716.55	64.14	71.24	82.59	39.06	-5,468.70	311.96	177.60	134.36	2.322						
9,250.00	3,753.37	3,665.00	3,716.55	64.69	71.24	82.59	39.06	-5,468.70	326.86	191.95	134.91	2.423						
9,300.00	3,752.38	3,665.00	3,716.55	65.24	71.24	82.59	39.06	-5,468.70	348.36	212.91	135.46	2.572						
9,350.00	3,751.39	3,665.00	3,716.55	65.79	71.24	82.59	39.06	-5,468.70	375.33	239.33	136.00	2.760						
9,370.26	3,750.99	3,665.00	3,716.55	66.01	71.24	82.59	39.06	-5,468.70	387.56	251.34	136.22	2.845						
9,400.00	3,750.40	3,665.00	3,716.55	66.34	71.24	82.59	39.06	-5,468.70	406.68	270.14	136.55	2.978						
9,420.28	3,750.00	3,665.00	3,716.55	66.56	71.24	82.59	39.06	-5,468.70	420.43	283.66	136.77	3.074						

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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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 WELCH CD 28 STATE COM - OFFSET: TIGNER STATE 4 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 380-INC-ONLY												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	
7,450.00	3,789.03	3,660.00	3,678.85	45.11	71.03	-73.31	-544.71	-4,815.08	1,087.62	976.10	111.52	9.753	
7,500.00	3,788.04	3,660.00	3,678.85	45.64	71.03	-73.31	-544.71	-4,815.08	1,039.82	927.78	112.04	9.281	
7,550.00	3,787.05	3,660.00	3,678.85	46.18	71.03	-73.31	-544.71	-4,815.08	992.23	879.68	112.55	8.816	
7,600.00	3,786.06	3,660.00	3,678.85	46.72	71.03	-73.31	-544.71	-4,815.08	944.89	831.82	113.07	8.357	
7,650.00	3,785.07	3,660.00	3,678.85	47.25	71.03	-73.31	-544.71	-4,815.08	897.84	784.26	113.59	7.904	
7,700.00	3,784.08	3,660.00	3,678.85	47.79	71.03	-73.31	-544.71	-4,815.08	851.13	737.03	114.10	7.459	
7,750.00	3,783.09	3,660.00	3,678.85	48.33	71.03	-73.31	-544.71	-4,815.08	804.82	690.19	114.62	7.021	
7,800.00	3,782.10	3,660.00	3,678.85	48.87	71.03	-73.31	-544.71	-4,815.08	758.97	643.82	115.14	6.592	
7,850.00	3,781.11	3,660.00	3,678.85	49.41	71.03	-73.31	-544.71	-4,815.08	713.67	598.01	115.66	6.170	
7,900.00	3,780.12	3,660.00	3,678.85	49.95	71.03	-73.31	-544.71	-4,815.08	669.05	552.87	116.18	5.759	
7,950.00	3,779.13	3,660.00	3,678.85	50.49	71.03	-73.31	-544.71	-4,815.08	625.25	508.55	116.70	5.358	
8,000.00	3,778.13	3,660.00	3,678.85	51.03	71.03	-73.31	-544.71	-4,815.08	582.44	465.22	117.22	4.969	
8,050.00	3,777.14	3,660.00	3,678.85	51.58	71.03	-73.31	-544.71	-4,815.08	540.87	423.12	117.75	4.594	
8,100.00	3,776.15	3,660.00	3,678.85	52.12	71.03	-73.31	-544.71	-4,815.08	500.84	382.57	118.27	4.235	
8,150.00	3,775.16	3,660.00	3,678.85	52.66	71.03	-73.31	-544.71	-4,815.08	462.76	343.97	118.79	3.896	
8,200.00	3,774.17	3,660.00	3,678.85	53.20	71.03	-73.31	-544.71	-4,815.08	427.14	307.83	119.31	3.580	
8,250.00	3,773.18	3,660.00	3,678.85	53.75	71.03	-73.31	-544.71	-4,815.08	394.65	274.82	119.84	3.293	
8,300.00	3,772.19	3,660.00	3,678.85	54.29	71.03	-73.31	-544.71	-4,815.08	366.13	245.77	120.36	3.042	
8,350.00	3,771.20	3,660.00	3,678.85	54.84	71.03	-73.31	-544.71	-4,815.08	342.57	221.69	120.88	2.834	
8,400.00	3,770.21	3,660.00	3,678.85	55.38	71.03	-73.31	-544.71	-4,815.08	325.05	203.64	121.41	2.677	
8,450.00	3,769.22	3,660.00	3,678.85	55.93	71.03	-73.31	-544.71	-4,815.08	314.57	192.64	121.93	2.580	
8,491.98	3,768.39	3,660.00	3,678.85	56.38	71.03	-73.31	-544.71	-4,815.08	311.76	189.39	122.37	2.548 CC, ES	
8,500.00	3,768.23	3,660.00	3,678.85	56.47	71.03	-73.31	-544.71	-4,815.08	311.86	189.41	122.46	2.547 SF	
8,550.00	3,767.24	3,660.00	3,678.85	57.02	71.03	-73.31	-544.71	-4,815.08	317.11	194.13	122.98	2.579	
8,600.00	3,766.25	3,660.00	3,678.85	57.56	71.03	-73.31	-544.71	-4,815.08	329.95	206.44	123.51	2.671	
8,650.00	3,765.26	3,660.00	3,678.85	58.11	71.03	-73.31	-544.71	-4,815.08	349.52	225.49	124.03	2.818	
8,700.00	3,764.27	3,660.00	3,678.85	58.66	71.03	-73.31	-544.71	-4,815.08	374.79	250.23	124.56	3.009	
8,750.00	3,763.28	3,660.00	3,678.85	59.20	71.03	-73.31	-544.71	-4,815.08	404.69	279.60	125.08	3.235	
8,800.00	3,762.29	3,660.00	3,678.85	59.75	71.03	-73.31	-544.71	-4,815.08	438.26	312.65	125.61	3.489	
8,850.00	3,761.30	3,660.00	3,678.85	60.30	71.03	-73.31	-544.71	-4,815.08	474.74	348.60	126.14	3.764	
8,900.00	3,760.31	3,660.00	3,678.85	60.85	71.03	-73.31	-544.71	-4,815.08	513.49	386.83	126.66	4.054	
8,950.00	3,759.32	3,660.00	3,678.85	61.39	71.03	-73.31	-544.71	-4,815.08	554.06	426.86	127.19	4.356	
9,000.00	3,758.33	3,660.00	3,678.85	61.94	71.03	-73.31	-544.71	-4,815.08	596.05	468.33	127.72	4.667	
9,050.00	3,757.34	3,660.00	3,678.85	62.49	71.03	-73.31	-544.71	-4,815.08	639.21	510.96	128.25	4.984	
9,100.00	3,756.34	3,660.00	3,678.85	63.04	71.03	-73.31	-544.71	-4,815.08	683.29	554.51	128.78	5.306	
9,150.00	3,755.35	3,660.00	3,678.85	63.59	71.03	-73.31	-544.71	-4,815.08	728.14	598.84	129.30	5.631	
9,200.00	3,754.36	3,660.00	3,678.85	64.14	71.03	-73.31	-544.71	-4,815.08	773.62	643.79	129.83	5.959	
9,250.00	3,753.37	3,660.00	3,678.85	64.69	71.03	-73.31	-544.71	-4,815.08	819.63	689.27	130.36	6.287	
9,300.00	3,752.38	3,660.00	3,678.85	65.24	71.03	-73.31	-544.71	-4,815.08	866.08	735.19	130.89	6.617	
9,350.00	3,751.39	3,660.00	3,678.85	65.79	71.03	-73.31	-544.71	-4,815.08	912.91	781.49	131.42	6.947	
9,370.26	3,750.99	3,660.00	3,678.85	66.01	71.03	-73.31	-544.71	-4,815.08	931.97	800.34	131.63	7.080	
9,400.00	3,750.40	3,660.00	3,678.85	66.34	71.03	-73.31	-544.71	-4,815.08	960.05	828.10	131.95	7.276	
9,420.28	3,750.00	3,660.00	3,678.85	66.56	71.03	-73.31	-544.71	-4,815.08	979.26	847.09	132.16	7.409	

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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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 WELCH CD 28 STATE COM - OFFSET: WELCH RL STATE 1 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 460-INC-ONLY												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
8,350.00	3,771.20	3,505.00	3,565.94	54.84	62.16	77.57	612.71	-5,362.19	1,111.67	997.18	114.49	9.710	
8,400.00	3,770.21	3,505.00	3,565.94	55.38	62.16	77.57	612.71	-5,362.19	1,082.64	967.62	115.02	9.413	
8,450.00	3,769.22	3,505.00	3,565.94	55.93	62.16	77.57	612.71	-5,362.19	1,055.19	939.63	115.56	9.131	
8,500.00	3,768.23	3,505.00	3,565.94	56.47	62.16	77.57	612.71	-5,362.19	1,029.43	913.34	116.09	8.867	
8,550.00	3,767.24	3,505.00	3,565.94	57.02	62.16	77.57	612.71	-5,362.19	1,005.51	888.88	116.63	8.621	
8,600.00	3,766.25	3,505.00	3,565.94	57.56	62.16	77.57	612.71	-5,362.19	983.54	866.37	117.17	8.394	
8,650.00	3,765.26	3,505.00	3,565.94	58.11	62.16	77.57	612.71	-5,362.19	963.67	845.97	117.70	8.187	
8,700.00	3,764.27	3,505.00	3,565.94	58.66	62.16	77.57	612.71	-5,362.19	946.03	827.79	118.24	8.001	
8,750.00	3,763.28	3,505.00	3,565.94	59.20	62.16	77.57	612.71	-5,362.19	930.74	811.96	118.78	7.836	
8,800.00	3,762.29	3,505.00	3,565.94	59.75	62.16	77.57	612.71	-5,362.19	917.93	798.61	119.32	7.693	
8,850.00	3,761.30	3,505.00	3,565.94	60.30	62.16	77.57	612.71	-5,362.19	907.69	787.83	119.86	7.573	
8,900.00	3,760.31	3,505.00	3,565.94	60.85	62.16	77.57	612.71	-5,362.19	900.12	779.72	120.39	7.476	
8,950.00	3,759.32	3,505.00	3,565.94	61.39	62.16	77.57	612.71	-5,362.19	895.28	774.34	120.93	7.403	
9,000.00	3,758.33	3,505.00	3,565.94	61.94	62.16	77.57	612.71	-5,362.19	893.21	771.74	121.47	7.353	
9,011.90	3,758.09	3,505.00	3,565.94	62.07	62.16	77.57	612.71	-5,362.19	893.13	771.53	121.60	7.345 CC, ES	
9,050.00	3,757.34	3,505.00	3,565.94	62.49	62.16	77.57	612.71	-5,362.19	893.94	771.93	122.01	7.327	
9,100.00	3,756.34	3,505.00	3,565.94	63.04	62.16	77.57	612.71	-5,362.19	897.47	774.92	122.55	7.323 SF	
9,150.00	3,755.35	3,505.00	3,565.94	63.59	62.16	77.57	612.71	-5,362.19	903.75	780.66	123.09	7.342	
9,200.00	3,754.36	3,505.00	3,565.94	64.14	62.16	77.57	612.71	-5,362.19	912.72	789.09	123.63	7.383	
9,250.00	3,753.37	3,505.00	3,565.94	64.69	62.16	77.57	612.71	-5,362.19	924.32	800.15	124.17	7.444	
9,300.00	3,752.38	3,505.00	3,565.94	65.24	62.16	77.57	612.71	-5,362.19	938.45	813.74	124.71	7.525	
9,350.00	3,751.39	3,505.00	3,565.94	65.79	62.16	77.57	612.71	-5,362.19	954.98	829.73	125.25	7.625	
9,370.26	3,750.99	3,505.00	3,565.94	66.01	62.16	77.57	612.71	-5,362.19	962.34	836.87	125.47	7.670	
9,400.00	3,750.40	3,505.00	3,565.94	66.34	62.16	77.57	612.71	-5,362.19	973.81	848.02	125.79	7.741	
9,420.28	3,750.00	3,505.00	3,565.94	66.56	62.16	77.57	612.71	-5,362.19	982.07	856.06	126.01	7.794	

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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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												Offset Site Error:	0.00 usft
Survey Program: 193-INC-ONLY												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
6,600.00	3,805.87	3,660.00	3,709.89	36.11	68.80	84.47	670.85	-3,480.94	1,031.98	927.55	104.43	9.882	
6,650.00	3,804.88	3,660.00	3,709.89	36.63	68.80	84.47	670.85	-3,480.94	1,007.35	902.39	104.95	9.598	
6,700.00	3,803.89	3,660.00	3,709.89	37.16	68.80	84.47	670.85	-3,480.94	984.64	879.17	105.47	9.335	
6,750.00	3,802.90	3,660.00	3,709.89	37.68	68.80	84.47	670.85	-3,480.94	964.00	858.00	106.00	9.095	
6,800.00	3,801.91	3,660.00	3,709.89	38.20	68.80	84.47	670.85	-3,480.94	945.55	839.03	106.52	8.877	
6,850.00	3,800.91	3,660.00	3,709.89	38.73	68.80	84.47	670.85	-3,480.94	929.42	822.38	107.04	8.683	
6,900.00	3,799.92	3,660.00	3,709.89	39.26	68.80	84.47	670.85	-3,480.94	915.75	808.18	107.57	8.513	
6,950.00	3,798.93	3,660.00	3,709.89	39.78	68.80	84.47	670.85	-3,480.94	904.64	796.54	108.09	8.369	
7,000.00	3,797.94	3,660.00	3,709.89	40.31	68.80	84.47	670.85	-3,480.94	896.18	787.56	108.62	8.250	
7,050.00	3,796.95	3,660.00	3,709.89	40.84	68.80	84.47	670.85	-3,480.94	890.45	781.30	109.15	8.158	
7,100.00	3,795.96	3,660.00	3,709.89	41.37	68.80	84.47	670.85	-3,480.94	887.51	777.83	109.68	8.092	
7,127.30	3,795.42	3,660.00	3,709.89	41.66	68.80	84.47	670.85	-3,480.94	887.09	777.12	109.97	8.067	CC, ES
7,150.00	3,794.97	3,660.00	3,709.89	41.90	68.80	84.47	670.85	-3,480.94	887.38	777.17	110.21	8.052	
7,200.00	3,793.98	3,660.00	3,709.89	42.43	68.80	84.47	670.85	-3,480.94	890.06	779.33	110.74	8.038	SF
7,250.00	3,792.99	3,660.00	3,709.89	42.97	68.80	84.47	670.85	-3,480.94	895.54	784.27	111.27	8.048	
7,300.00	3,792.00	3,660.00	3,709.89	43.50	68.80	84.47	670.85	-3,480.94	903.74	791.94	111.80	8.083	
7,350.00	3,791.01	3,660.00	3,709.89	44.03	68.80	84.47	670.85	-3,480.94	914.62	802.28	112.33	8.142	
7,400.00	3,790.02	3,660.00	3,709.89	44.57	68.80	84.47	670.85	-3,480.94	928.06	815.19	112.87	8.223	
7,450.00	3,789.03	3,660.00	3,709.89	45.11	68.80	84.47	670.85	-3,480.94	943.96	830.56	113.40	8.324	
7,500.00	3,788.04	3,660.00	3,709.89	45.64	68.80	84.47	670.85	-3,480.94	962.20	848.27	113.94	8.445	
7,550.00	3,787.05	3,660.00	3,709.89	46.18	68.80	84.47	670.85	-3,480.94	982.65	868.18	114.47	8.584	
7,600.00	3,786.06	3,660.00	3,709.89	46.72	68.80	84.47	670.85	-3,480.94	1,005.17	890.16	115.01	8.740	
7,650.00	3,785.07	3,660.00	3,709.89	47.25	68.80	84.47	670.85	-3,480.94	1,029.63	914.09	115.54	8.911	
7,700.00	3,784.08	3,660.00	3,709.89	47.79	68.80	84.47	670.85	-3,480.94	1,055.89	939.81	116.08	9.096	
7,750.00	3,783.09	3,660.00	3,709.89	48.33	68.80	84.47	670.85	-3,480.94	1,083.83	967.21	116.62	9.294	
7,800.00	3,782.10	3,660.00	3,709.89	48.87	68.80	84.47	670.85	-3,480.94	1,113.31	996.15	117.16	9.503	
7,850.00	3,781.11	3,660.00	3,709.89	49.41	68.80	84.47	670.85	-3,480.94	1,144.21	1,026.52	117.70	9.722	
7,900.00	3,780.12	3,660.00	3,709.89	49.95	68.80	84.47	670.85	-3,480.94	1,176.43	1,058.20	118.24	9.950	

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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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												Offset Site Error:	0.00 usft
Survey Program: 517-INC-ONLY												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
7,250.00	3,792.99	3,535.00	3,595.87	42.97	66.65	78.03	650.44	-4,141.38	1,048.58	941.21	107.37	9.766	
7,300.00	3,792.00	3,535.00	3,595.87	43.50	66.65	78.03	650.44	-4,141.38	1,023.72	915.83	107.89	9.488	
7,350.00	3,791.01	3,535.00	3,595.87	44.03	66.65	78.03	650.44	-4,141.38	1,000.74	892.32	108.42	9.230	
7,400.00	3,790.02	3,535.00	3,595.87	44.57	66.65	78.03	650.44	-4,141.38	979.78	870.83	108.95	8.993	
7,450.00	3,789.03	3,535.00	3,595.87	45.11	66.65	78.03	650.44	-4,141.38	960.96	851.49	109.47	8.778	
7,500.00	3,788.04	3,535.00	3,595.87	45.64	66.65	78.03	650.44	-4,141.38	944.42	834.42	110.00	8.585	
7,550.00	3,787.05	3,535.00	3,595.87	46.18	66.65	78.03	650.44	-4,141.38	930.28	819.75	110.53	8.416	
7,600.00	3,786.06	3,535.00	3,595.87	46.72	66.65	78.03	650.44	-4,141.38	918.64	807.58	111.06	8.272	
7,650.00	3,785.07	3,535.00	3,595.87	47.25	66.65	78.03	650.44	-4,141.38	909.60	798.01	111.59	8.151	
7,700.00	3,784.08	3,535.00	3,595.87	47.79	66.65	78.03	650.44	-4,141.38	903.25	791.13	112.12	8.056	
7,750.00	3,783.09	3,535.00	3,595.87	48.33	66.65	78.03	650.44	-4,141.38	899.64	786.99	112.65	7.986	
7,790.18	3,782.29	3,535.00	3,595.87	48.76	66.65	78.03	650.44	-4,141.38	898.74	785.66	113.08	7.948	CC
7,800.00	3,782.10	3,535.00	3,595.87	48.87	66.65	78.03	650.44	-4,141.38	898.79	785.61	113.18	7.941	ES
7,850.00	3,781.11	3,535.00	3,595.87	49.41	66.65	78.03	650.44	-4,141.38	900.73	787.01	113.71	7.921	SF
7,900.00	3,780.12	3,535.00	3,595.87	49.95	66.65	78.03	650.44	-4,141.38	905.42	791.18	114.25	7.925	
7,950.00	3,779.13	3,535.00	3,595.87	50.49	66.65	78.03	650.44	-4,141.38	912.84	798.06	114.78	7.953	
8,000.00	3,778.13	3,535.00	3,595.87	51.03	66.65	78.03	650.44	-4,141.38	922.91	807.59	115.31	8.004	
8,050.00	3,777.14	3,535.00	3,595.87	51.58	66.65	78.03	650.44	-4,141.38	935.54	819.70	115.85	8.076	
8,100.00	3,776.15	3,535.00	3,595.87	52.12	66.65	78.03	650.44	-4,141.38	950.64	834.26	116.38	8.168	
8,150.00	3,775.16	3,535.00	3,595.87	52.66	66.65	78.03	650.44	-4,141.38	968.09	851.18	116.91	8.280	
8,200.00	3,774.17	3,535.00	3,595.87	53.20	66.65	78.03	650.44	-4,141.38	987.77	870.32	117.45	8.410	
8,250.00	3,773.18	3,535.00	3,595.87	53.75	66.65	78.03	650.44	-4,141.38	1,009.54	891.55	117.98	8.557	
8,300.00	3,772.19	3,535.00	3,595.87	54.29	66.65	78.03	650.44	-4,141.38	1,033.27	914.75	118.52	8.718	
8,350.00	3,771.20	3,535.00	3,595.87	54.84	66.65	78.03	650.44	-4,141.38	1,058.84	939.78	119.06	8.894	
8,400.00	3,770.21	3,535.00	3,595.87	55.38	66.65	78.03	650.44	-4,141.38	1,086.10	966.51	119.59	9.082	
8,450.00	3,769.22	3,535.00	3,595.87	55.93	66.65	78.03	650.44	-4,141.38	1,114.94	994.81	120.13	9.281	
8,500.00	3,768.23	3,535.00	3,595.87	56.47	66.65	78.03	650.44	-4,141.38	1,145.24	1,024.58	120.66	9.491	
8,550.00	3,767.24	3,535.00	3,595.87	57.02	66.65	78.03	650.44	-4,141.38	1,176.89	1,055.68	121.20	9.710	
8,600.00	3,766.25	3,535.00	3,595.87	57.56	66.65	78.03	650.44	-4,141.38	1,209.77	1,088.03	121.74	9.937	

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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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 WELCH CD 28 STATE COM - OFFSET: WELCH RL STATE 21 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 385-INC-ONLY												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
7,700.00	3,784.08	3,650.00	3,705.84	47.79	73.52	86.10	676.98	-4,827.51	1,205.64	1,084.59	121.05	9.960	
7,750.00	3,783.09	3,650.00	3,705.84	48.33	73.52	86.10	676.98	-4,827.51	1,174.21	1,052.62	121.59	9.657	
7,800.00	3,782.10	3,650.00	3,705.84	48.87	73.52	86.10	676.98	-4,827.51	1,144.10	1,021.97	122.13	9.368	
7,850.00	3,781.11	3,650.00	3,705.84	49.41	73.52	86.10	676.98	-4,827.51	1,115.41	992.74	122.67	9.093	
7,900.00	3,780.12	3,650.00	3,705.84	49.95	73.52	86.10	676.98	-4,827.51	1,088.27	965.06	123.21	8.833	
7,950.00	3,779.13	3,650.00	3,705.84	50.49	73.52	86.10	676.98	-4,827.51	1,062.79	939.04	123.75	8.588	
8,000.00	3,778.13	3,650.00	3,705.84	51.03	73.52	86.10	676.98	-4,827.51	1,039.09	914.80	124.29	8.360	
8,050.00	3,777.14	3,650.00	3,705.84	51.58	73.52	86.10	676.98	-4,827.51	1,017.30	892.47	124.83	8.149	
8,100.00	3,776.15	3,650.00	3,705.84	52.12	73.52	86.10	676.98	-4,827.51	997.54	872.17	125.37	7.957	
8,150.00	3,775.16	3,650.00	3,705.84	52.66	73.52	86.10	676.98	-4,827.51	979.94	854.02	125.92	7.782	
8,200.00	3,774.17	3,650.00	3,705.84	53.20	73.52	86.10	676.98	-4,827.51	964.61	838.15	126.46	7.628	
8,250.00	3,773.18	3,650.00	3,705.84	53.75	73.52	86.10	676.98	-4,827.51	951.66	824.66	127.00	7.493	
8,300.00	3,772.19	3,650.00	3,705.84	54.29	73.52	86.10	676.98	-4,827.51	941.19	813.65	127.54	7.379	
8,350.00	3,771.20	3,650.00	3,705.84	54.84	73.52	86.10	676.98	-4,827.51	933.29	805.20	128.09	7.286	
8,400.00	3,770.21	3,650.00	3,705.84	55.38	73.52	86.10	676.98	-4,827.51	928.02	799.39	128.63	7.215	
8,450.00	3,769.22	3,650.00	3,705.84	55.93	73.52	86.10	676.98	-4,827.51	925.43	796.25	129.18	7.164	
8,473.11	3,768.76	3,650.00	3,705.84	56.18	73.52	86.10	676.98	-4,827.51	925.14	795.71	129.43	7.148	CC, ES
8,500.00	3,768.23	3,650.00	3,705.84	56.47	73.52	86.10	676.98	-4,827.51	925.53	795.81	129.72	7.135	
8,550.00	3,767.24	3,650.00	3,705.84	57.02	73.52	86.10	676.98	-4,827.51	928.33	798.06	130.27	7.126	SF
8,600.00	3,766.25	3,650.00	3,705.84	57.56	73.52	86.10	676.98	-4,827.51	933.80	802.99	130.81	7.138	
8,650.00	3,765.26	3,650.00	3,705.84	58.11	73.52	86.10	676.98	-4,827.51	941.90	810.54	131.36	7.170	
8,700.00	3,764.27	3,650.00	3,705.84	58.66	73.52	86.10	676.98	-4,827.51	952.55	820.65	131.90	7.222	
8,750.00	3,763.28	3,650.00	3,705.84	59.20	73.52	86.10	676.98	-4,827.51	965.68	833.23	132.45	7.291	
8,800.00	3,762.29	3,650.00	3,705.84	59.75	73.52	86.10	676.98	-4,827.51	981.19	848.19	133.00	7.378	
8,850.00	3,761.30	3,650.00	3,705.84	60.30	73.52	86.10	676.98	-4,827.51	998.96	865.42	133.54	7.480	
8,900.00	3,760.31	3,650.00	3,705.84	60.85	73.52	86.10	676.98	-4,827.51	1,018.88	884.79	134.09	7.598	
8,950.00	3,759.32	3,650.00	3,705.84	61.39	73.52	86.10	676.98	-4,827.51	1,040.82	906.18	134.64	7.730	
9,000.00	3,758.33	3,650.00	3,705.84	61.94	73.52	86.10	676.98	-4,827.51	1,064.66	929.47	135.19	7.875	
9,050.00	3,757.34	3,650.00	3,705.84	62.49	73.52	86.10	676.98	-4,827.51	1,090.27	954.53	135.73	8.032	
9,100.00	3,756.34	3,650.00	3,705.84	63.04	73.52	86.10	676.98	-4,827.51	1,117.53	981.25	136.28	8.200	
9,150.00	3,755.35	3,650.00	3,705.84	63.59	73.52	86.10	676.98	-4,827.51	1,146.32	1,009.49	136.83	8.378	
9,200.00	3,754.36	3,650.00	3,705.84	64.14	73.52	86.10	676.98	-4,827.51	1,176.54	1,039.16	137.38	8.564	
9,250.00	3,753.37	3,650.00	3,705.84	64.69	73.52	86.10	676.98	-4,827.51	1,208.07	1,070.14	137.93	8.759	
9,300.00	3,752.38	3,650.00	3,705.84	65.24	73.52	86.10	676.98	-4,827.51	1,240.82	1,102.34	138.48	8.960	
9,350.00	3,751.39	3,650.00	3,705.84	65.79	73.52	86.10	676.98	-4,827.51	1,274.68	1,135.66	139.03	9.169	
9,370.26	3,750.99	3,650.00	3,705.84	66.01	73.52	86.10	676.98	-4,827.51	1,288.70	1,149.45	139.25	9.255	
9,400.00	3,750.40	3,650.00	3,705.84	66.34	73.52	86.10	676.98	-4,827.51	1,309.58	1,170.01	139.58	9.383	
9,420.28	3,750.00	3,650.00	3,705.84	66.56	73.52	86.10	676.98	-4,827.51	1,324.01	1,184.22	139.80	9.471	

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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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 WELCH CD 28 STATE COM - OFFSET: WILLIAMS KERSEY A FEDERAL 9 - Wellbore #1 - Wellbore #													Offset Site Error:	0.00 usft
Survey Program: 450-INC-ONLY													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	
6,100.00	3,815.77	3,655.00	3,709.88	30.98	70.49	83.90	717.92	-2,865.33	1,007.31	906.40	100.90	9.983		
6,150.00	3,814.78	3,655.00	3,709.88	31.49	70.49	83.90	717.92	-2,865.33	987.97	886.56	101.41	9.742		
6,200.00	3,813.79	3,655.00	3,709.88	32.00	70.49	83.90	717.92	-2,865.33	970.82	868.91	101.91	9.526		
6,250.00	3,812.80	3,655.00	3,709.88	32.51	70.49	83.90	717.92	-2,865.33	955.99	853.57	102.42	9.334		
6,300.00	3,811.81	3,655.00	3,709.88	33.02	70.49	83.90	717.92	-2,865.33	943.58	840.65	102.93	9.167		
6,350.00	3,810.82	3,655.00	3,709.88	33.53	70.49	83.90	717.92	-2,865.33	933.68	830.23	103.44	9.026		
6,400.00	3,809.83	3,655.00	3,709.88	34.04	70.49	83.90	717.92	-2,865.33	926.37	822.42	103.95	8.911		
6,450.00	3,808.84	3,655.00	3,709.88	34.56	70.49	83.90	717.92	-2,865.33	921.73	817.26	104.47	8.823		
6,500.00	3,807.85	3,655.00	3,709.88	35.07	70.49	83.90	717.92	-2,865.33	919.78	814.80	104.98	8.761		
6,510.83	3,807.63	3,655.00	3,709.88	35.19	70.49	83.90	717.92	-2,865.33	919.72	814.63	105.09	8.751	CC, ES	
6,550.00	3,806.86	3,655.00	3,709.88	35.59	70.49	83.90	717.92	-2,865.33	920.56	815.05	105.50	8.726		
6,600.00	3,805.87	3,655.00	3,709.88	36.11	70.49	83.90	717.92	-2,865.33	924.03	818.02	106.02	8.716	SF	
6,650.00	3,804.88	3,655.00	3,709.88	36.63	70.49	83.90	717.92	-2,865.33	930.19	823.65	106.54	8.731		
6,700.00	3,803.89	3,655.00	3,709.88	37.16	70.49	83.90	717.92	-2,865.33	938.98	831.92	107.06	8.771		
6,750.00	3,802.90	3,655.00	3,709.88	37.68	70.49	83.90	717.92	-2,865.33	950.31	842.73	107.58	8.834		
6,800.00	3,801.91	3,655.00	3,709.88	38.20	70.49	83.90	717.92	-2,865.33	964.11	856.01	108.10	8.919		
6,850.00	3,800.91	3,655.00	3,709.88	38.73	70.49	83.90	717.92	-2,865.33	980.27	871.64	108.63	9.024		
6,900.00	3,799.92	3,655.00	3,709.88	39.26	70.49	83.90	717.92	-2,865.33	998.67	889.52	109.15	9.149		
6,950.00	3,798.93	3,655.00	3,709.88	39.78	70.49	83.90	717.92	-2,865.33	1,019.20	909.52	109.68	9.293		
7,000.00	3,797.94	3,655.00	3,709.88	40.31	70.49	83.90	717.92	-2,865.33	1,041.72	931.52	110.20	9.453		
7,050.00	3,796.95	3,655.00	3,709.88	40.84	70.49	83.90	717.92	-2,865.33	1,066.11	955.38	110.73	9.628		
7,100.00	3,795.96	3,655.00	3,709.88	41.37	70.49	83.90	717.92	-2,865.33	1,092.25	980.99	111.26	9.817		

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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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 WELCH CD 28 STATE COM - SA 10H - Wellbore #1 - PERMIT												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+SAG+FDIR												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
350.00	350.00	349.87	349.86	1.03	1.03	89.80	-19.00	-6.89	20.20	18.14	2.07	9.773	CC, ES
400.00	399.98	399.73	399.71	1.21	1.21	90.07	-19.90	-5.94	20.69	18.28	2.41	8.575	
450.00	449.93	449.59	449.52	1.38	1.38	90.49	-21.39	-4.37	21.52	18.76	2.76	7.804	
500.00	499.84	499.43	499.27	1.56	1.55	91.03	-23.48	-2.17	22.67	19.57	3.10	7.310	
550.00	549.68	549.26	548.95	1.74	1.73	91.65	-26.16	0.66	24.15	20.70	3.45	6.995	
600.00	599.45	599.08	598.54	1.91	1.90	92.30	-29.44	4.11	25.96	22.16	3.80	6.826	
615.87	615.23	614.89	614.26	1.97	1.96	92.51	-30.60	5.34	26.61	22.69	3.92	6.794	
650.00	649.15	648.88	648.02	2.09	2.08	92.58	-33.31	8.19	28.10	23.94	4.16	6.753	SF
700.00	698.85	698.64	697.36	2.27	2.26	91.38	-37.77	12.88	30.53	26.01	4.52	6.759	
750.00	748.55	748.34	746.51	2.45	2.43	88.97	-42.81	18.19	33.31	28.43	4.88	6.829	
800.00	798.24	797.95	795.44	2.63	2.61	85.72	-48.42	24.11	36.51	31.27	5.24	6.971	
850.00	847.94	847.43	844.10	2.81	2.80	81.93	-54.60	30.62	40.23	34.63	5.60	7.186	
900.00	897.64	896.76	892.45	2.99	2.98	77.88	-61.34	37.71	44.58	38.62	5.96	7.481	
950.00	947.33	945.91	940.45	3.17	3.17	73.80	-68.62	45.38	49.64	43.32	6.32	7.854	
1,000.00	997.03	995.03	988.24	3.35	3.35	69.84	-76.44	53.62	55.45	48.77	6.68	8.301	
1,050.00	1,046.72	1,044.52	1,036.34	3.54	3.54	66.47	-84.47	62.08	61.64	54.60	7.04	8.757	
1,100.00	1,096.42	1,094.02	1,084.44	3.72	3.73	63.72	-92.50	70.54	68.00	60.60	7.40	9.193	
1,150.00	1,146.12	1,143.52	1,132.55	3.90	3.93	61.44	-100.54	79.00	74.49	66.74	7.75	9.606	
1,200.00	1,195.81	1,193.02	1,180.65	4.08	4.12	59.53	-108.57	87.46	81.08	72.96	8.11	9.995	

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



Anticollision Report

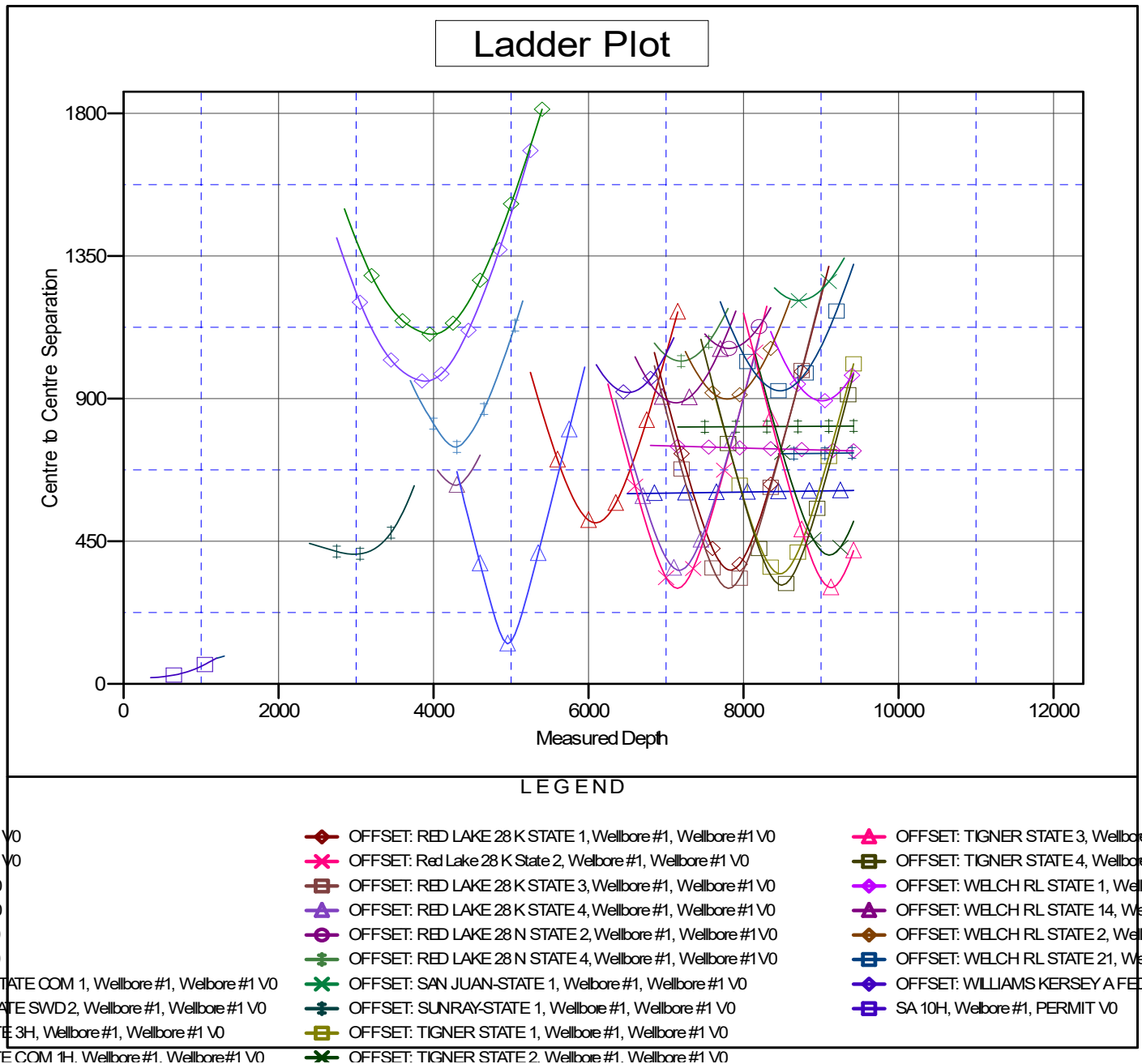
Company:	SPUR ENERGY PARTNERS, LLC	Local Co-ordinate Reference:	Well 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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' @ 3701.00usft (AKITA 57) Coordinates are relative to: 20H

Offset Depths are relative to Offset Datum

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

Grid Convergence at Surface is: 0.09°



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 20H
Project:	EDDY COUNTY, NM (NAD 83 - NME)	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Reference Site:	WELCH CD 28 STATE COM	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	20H	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' @ 3701.00usft (AKITA 57) Coordinates are relative to: 20H

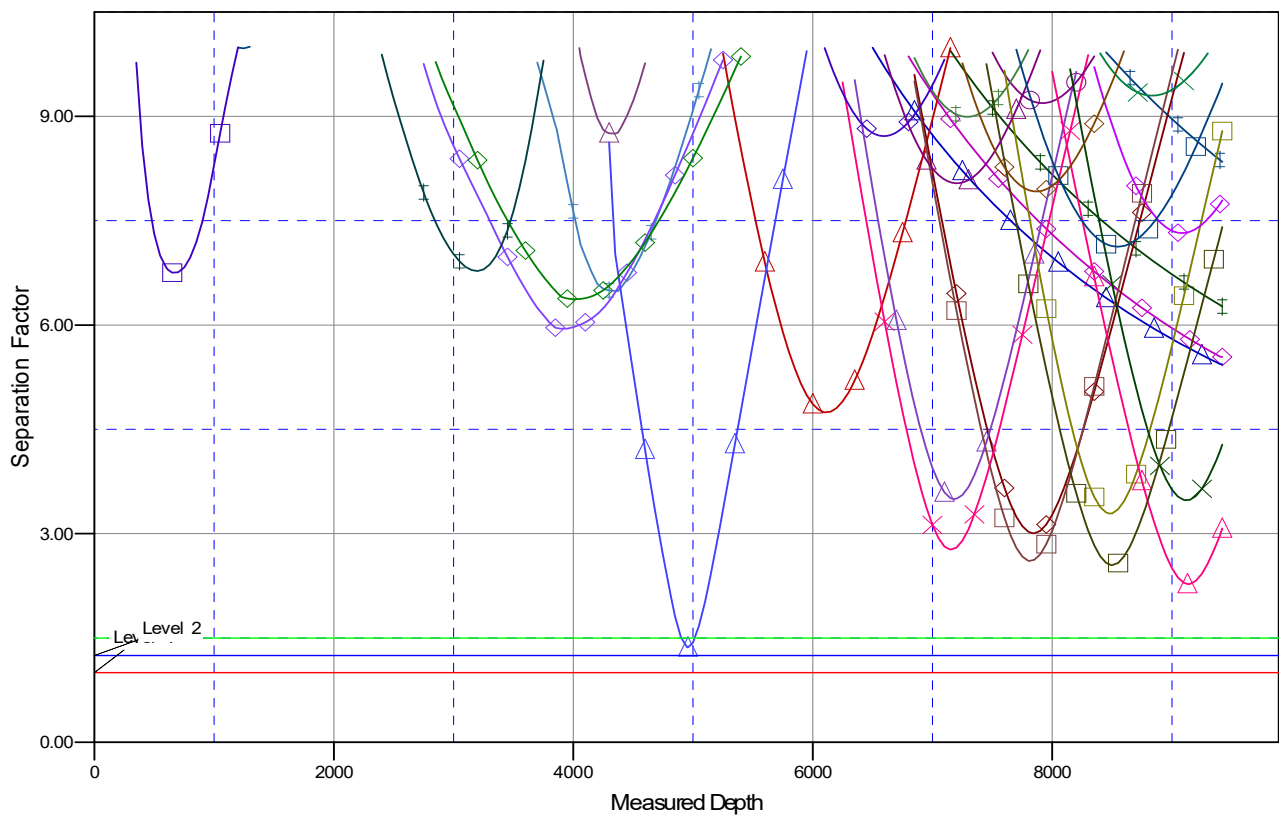
Offset Depths are relative to Offset Datum

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

Central Meridian is -104.3333333

Grid Convergence at Surface is: 0.09°

Separation Factor Plot



LEGEND

1 V0	OFFSET: RED LAKE 28 K STATE 1, Wellbore #1, Wellbore #1 V0	OFFSET: TIGNER STATE 3, Wellbore #1, Wellbore #1 V0
1 V0	OFFSET: RED LAKE 28 K STATE 2, Wellbore #1, Wellbore #1 V0	OFFSET: TIGNER STATE 4, Wellbore #1, Wellbore #1 V0
0	OFFSET: RED LAKE 28 K STATE 3, Wellbore #1, Wellbore #1 V0	OFFSET: WELCH RL STATE 1, Wellbore #1, Wellbore #1 V0
0	OFFSET: RED LAKE 28 K STATE 4, Wellbore #1, Wellbore #1 V0	OFFSET: WELCH RL STATE 14, Wellbore #1, Wellbore #1 V0
0	OFFSET: RED LAKE 28 N STATE 2, Wellbore #1, Wellbore #1 V0	OFFSET: WELCH RL STATE 2, Wellbore #1, Wellbore #1 V0
0	OFFSET: RED LAKE 28 N STATE 4, Wellbore #1, Wellbore #1 V0	OFFSET: WELCH RL STATE 21, Wellbore #1, Wellbore #1 V0
STATE COM 1, Wellbore #1, Wellbore #1 V0	OFFSET: SAN JUAN-STATE 1, Wellbore #1, Wellbore #1 V0	OFFSET: WILLIAMS KERSEY A FEDERAL, Wellbore #1, Wellbore #1 V0
TATE SWD2, Wellbore #1, Wellbore #1 V0	OFFSET: SUNRAY-STATE 1, Wellbore #1, Wellbore #1 V0	SA 10H, Wellbore #1, PERMIT V0
ITE 3H, Wellbore #1, Wellbore #1 V0	OFFSET: TIGNER STATE 1, Wellbore #1, Wellbore #1 V0	
ITE COM 1H, Wellbore #1, Wellbore #1 V0	OFFSET: TIGNER STATE 2, Wellbore #1, Wellbore #1 V0	

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



SPUR ENERGY PARTNERS, LLC

EDDY COUNTY, NM (NAD 83 - NME)

WELCH CD 28 STATE COM

20H

Wellbore #1

Plan: PERMIT

Standard Planning Report

20 March, 2023



Planning Report

Database:	EDM 5000.1.13 Single User Db	Local Co-ordinate Reference:	Well 20H
Company:	SPUR ENERGY PARTNERS, LLC	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Project:	EDDY COUNTY, NM (NAD 83 - NME)	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site:	WELCH CD 28 STATE COM	North Reference:	Grid
Well:	20H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	PERMIT		

Project	EDDY 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		WELCH CD 28 STATE COM			
Site Position:		Northing:	654,982.70 usft	Latitude:	32.8004739
From:	Map	Easting:	590,935.80 usft	Longitude:	-104.1719146
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.09 °

Well	20H					
Well Position	+N/-S	1,401.60 usft	Northing:	656,384.30 usft	Latitude:	32.8043246
	+E/-W	433.60 usft	Easting:	591,369.40 usft	Longitude:	-104.1704964
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,681.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	03/15/23	6.67	60.28	47,591

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	268.56	

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	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
615.87	6.32	111.35	615.23	-6.33	16.20	2.00	2.00	0.00	111.35	
2,763.23	6.32	111.35	2,749.55	-92.38	236.27	0.00	0.00	0.00	0.00	
3,860.74	60.00	268.56	3,673.35	-130.64	-235.72	6.00	4.89	14.32	158.42	
4,060.74	60.00	268.56	3,773.35	-135.00	-408.87	0.00	0.00	0.00	0.00	
4,372.09	91.14	268.56	3,850.00	-142.50	-706.60	10.00	10.00	0.00	0.00	WELCH CD 28 STA
9,370.26	91.14	268.56	3,750.99	-268.34	-5,702.20	0.00	0.00	0.00	0.00	WELCH CD 28 STA
9,420.28	91.14	268.56	3,750.00	-269.60	-5,752.20	0.00	0.00	0.00	0.00	WELCH CD 28 STA



Planning Report

Database:	EDM 5000.1.13 Single User Db	Local Co-ordinate Reference:	Well 20H
Company:	SPUR ENERGY PARTNERS, LLC	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Project:	EDDY COUNTY, NM (NAD 83 - NME)	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site:	WELCH CD 28 STATE COM	North Reference:	Grid
Well:	20H	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
WELCH CD 28 STATE COM #20H SHL:2143' FSL, 605' 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	111.35	399.98	-0.64	1.63	-1.61	2.00	2.00	0.00
500.00	4.00	111.35	499.84	-2.54	6.50	-6.43	2.00	2.00	0.00
600.00	6.00	111.35	599.45	-5.71	14.62	-14.47	2.00	2.00	0.00
615.87	6.32	111.35	615.23	-6.33	16.20	-16.04	2.00	2.00	0.00
700.00	6.32	111.35	698.85	-9.71	24.82	-24.57	0.00	0.00	0.00
800.00	6.32	111.35	798.24	-13.71	35.07	-34.72	0.00	0.00	0.00
900.00	6.32	111.35	897.64	-17.72	45.32	-44.86	0.00	0.00	0.00
1,000.00	6.32	111.35	997.03	-21.73	55.57	-55.01	0.00	0.00	0.00
1,100.00	6.32	111.35	1,096.42	-25.73	65.82	-65.15	0.00	0.00	0.00
1,200.00	6.32	111.35	1,195.81	-29.74	76.07	-75.29	0.00	0.00	0.00
1,300.00	6.32	111.35	1,295.21	-33.75	86.31	-85.44	0.00	0.00	0.00
1,400.00	6.32	111.35	1,394.60	-37.75	96.56	-95.58	0.00	0.00	0.00
1,500.00	6.32	111.35	1,493.99	-41.76	106.81	-105.73	0.00	0.00	0.00
1,600.00	6.32	111.35	1,593.38	-45.77	117.06	-115.87	0.00	0.00	0.00
1,700.00	6.32	111.35	1,692.78	-49.77	127.31	-126.02	0.00	0.00	0.00
1,800.00	6.32	111.35	1,792.17	-53.78	137.55	-136.16	0.00	0.00	0.00
1,900.00	6.32	111.35	1,891.56	-57.79	147.80	-146.30	0.00	0.00	0.00
2,000.00	6.32	111.35	1,990.96	-61.79	158.05	-156.45	0.00	0.00	0.00
2,100.00	6.32	111.35	2,090.35	-65.80	168.30	-166.59	0.00	0.00	0.00
2,200.00	6.32	111.35	2,189.74	-69.81	178.55	-176.74	0.00	0.00	0.00
2,300.00	6.32	111.35	2,289.13	-73.81	188.80	-186.88	0.00	0.00	0.00
2,400.00	6.32	111.35	2,388.53	-77.82	199.04	-197.03	0.00	0.00	0.00
2,500.00	6.32	111.35	2,487.92	-81.83	209.29	-207.17	0.00	0.00	0.00
2,600.00	6.32	111.35	2,587.31	-85.84	219.54	-217.31	0.00	0.00	0.00
2,700.00	6.32	111.35	2,686.70	-89.84	229.79	-227.46	0.00	0.00	0.00
2,763.23	6.32	111.35	2,749.55	-92.38	236.27	-233.87	0.00	0.00	0.00
WELCH CD 28 STATE COM #20H KOP:2763.23' MD									
2,800.00	4.34	122.13	2,786.16	-93.85	239.33	-236.90	6.00	-5.37	29.31
2,850.00	2.41	163.74	2,836.08	-95.87	241.23	-238.74	6.00	-3.85	83.22
2,900.00	3.29	225.04	2,886.03	-97.90	240.51	-237.98	6.00	1.74	122.58
2,950.00	5.81	246.44	2,935.87	-99.92	237.18	-234.59	6.00	5.05	42.81
3,000.00	8.64	254.45	2,985.47	-101.94	231.24	-228.60	6.00	5.67	16.00
3,050.00	11.56	258.48	3,034.69	-103.95	222.71	-220.02	6.00	5.83	8.06
3,100.00	14.51	260.89	3,083.39	-105.94	211.61	-208.88	6.00	5.90	4.83
3,150.00	17.48	262.51	3,131.45	-107.91	197.98	-195.20	6.00	5.93	3.23
3,200.00	20.45	263.66	3,178.73	-109.85	181.84	-179.03	6.00	5.95	2.31
3,250.00	23.44	264.54	3,225.10	-111.77	163.26	-160.40	6.00	5.96	1.75
3,300.00	26.42	265.22	3,270.44	-113.64	142.27	-139.37	6.00	5.97	1.37
3,350.00	29.41	265.78	3,314.62	-115.47	118.93	-115.99	6.00	5.98	1.11
3,400.00	32.40	266.24	3,357.51	-117.25	93.32	-90.34	6.00	5.98	0.92
3,450.00	35.39	266.63	3,399.01	-118.99	65.49	-62.48	6.00	5.98	0.78
3,500.00	38.39	266.97	3,438.99	-120.66	35.52	-32.48	6.00	5.99	0.67
3,550.00	41.38	267.26	3,477.36	-122.27	3.50	-0.43	6.00	5.99	0.59
3,600.00	44.38	267.52	3,513.99	-123.81	-30.48	33.58	6.00	5.99	0.52
3,650.00	47.37	267.76	3,548.80	-125.29	-66.34	69.46	6.00	5.99	0.47
3,700.00	50.37	267.97	3,581.68	-126.69	-103.97	107.12	6.00	5.99	0.43
3,750.00	53.36	268.17	3,612.56	-128.01	-143.27	146.44	6.00	5.99	0.39
3,800.00	56.36	268.35	3,641.33	-129.25	-184.13	187.32	6.00	5.99	0.36
3,850.00	59.36	268.52	3,667.93	-130.40	-226.45	229.65	6.00	5.99	0.34



Planning Report

Database:	EDM 5000.1.13 Single User Db	Local Co-ordinate Reference:	Well 20H
Company:	SPUR ENERGY PARTNERS, LLC	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Project:	EDDY COUNTY, NM (NAD 83 - NME)	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site:	WELCH CD 28 STATE COM	North Reference:	Grid
Well:	20H	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)	
3,860.74	60.00	268.56	3,673.35	-130.64	-235.72	238.92	6.00	5.99	0.33	
3,900.00	60.00	268.56	3,692.98	-131.49	-269.71	272.92	0.00	0.00	0.00	
4,000.00	60.00	268.56	3,742.98	-133.68	-356.28	359.53	0.00	0.00	0.00	
4,060.74	60.00	268.56	3,773.35	-135.00	-408.87	412.13	0.00	0.00	0.00	
4,100.00	63.93	268.56	3,791.80	-135.87	-443.50	446.78	10.00	10.00	0.00	
4,150.00	68.93	268.56	3,811.79	-137.03	-489.30	492.59	10.00	10.00	0.00	
4,200.00	73.93	268.56	3,827.71	-138.22	-536.66	539.97	10.00	10.00	0.00	
4,250.00	78.93	268.56	3,839.44	-139.44	-585.24	588.56	10.00	10.00	0.00	
4,300.00	83.93	268.56	3,846.90	-140.69	-634.65	637.98	10.00	10.00	0.00	
4,350.00	88.93	268.56	3,850.01	-141.94	-684.52	687.87	10.00	10.00	0.00	
4,372.09	91.14	268.56	3,850.00	-142.50	-706.60	709.96	10.00	10.00	0.00	
WELCH CD 28 STATE COM #20H FTP:100' FEL										
4,400.00	91.14	268.56	3,849.45	-143.20	-734.50	737.86	0.00	0.00	0.00	
4,500.00	91.14	268.56	3,847.47	-145.72	-834.44	837.84	0.00	0.00	0.00	
4,600.00	91.14	268.56	3,845.49	-148.24	-934.39	937.82	0.00	0.00	0.00	
4,700.00	91.14	268.56	3,843.50	-150.76	-1,034.34	1,037.80	0.00	0.00	0.00	
4,800.00	91.14	268.56	3,841.52	-153.27	-1,134.29	1,137.78	0.00	0.00	0.00	
4,900.00	91.14	268.56	3,839.54	-155.79	-1,234.24	1,237.76	0.00	0.00	0.00	
5,000.00	91.14	268.56	3,837.56	-158.31	-1,334.19	1,337.74	0.00	0.00	0.00	
5,100.00	91.14	268.56	3,835.58	-160.83	-1,434.14	1,437.72	0.00	0.00	0.00	
5,200.00	91.14	268.56	3,833.60	-163.34	-1,534.08	1,537.70	0.00	0.00	0.00	
5,300.00	91.14	268.56	3,831.62	-165.86	-1,634.03	1,637.69	0.00	0.00	0.00	
5,400.00	91.14	268.56	3,829.64	-168.38	-1,733.98	1,737.67	0.00	0.00	0.00	
5,500.00	91.14	268.56	3,827.66	-170.90	-1,833.93	1,837.65	0.00	0.00	0.00	
5,600.00	91.14	268.56	3,825.68	-173.42	-1,933.88	1,937.63	0.00	0.00	0.00	
5,700.00	91.14	268.56	3,823.70	-175.93	-2,033.83	2,037.61	0.00	0.00	0.00	
5,800.00	91.14	268.56	3,821.71	-178.45	-2,133.78	2,137.59	0.00	0.00	0.00	
5,900.00	91.14	268.56	3,819.73	-180.97	-2,233.73	2,237.57	0.00	0.00	0.00	
6,000.00	91.14	268.56	3,817.75	-183.49	-2,333.67	2,337.55	0.00	0.00	0.00	
6,100.00	91.14	268.56	3,815.77	-186.00	-2,433.62	2,437.53	0.00	0.00	0.00	
6,200.00	91.14	268.56	3,813.79	-188.52	-2,533.57	2,537.51	0.00	0.00	0.00	
6,300.00	91.14	268.56	3,811.81	-191.04	-2,633.52	2,637.49	0.00	0.00	0.00	
6,400.00	91.14	268.56	3,809.83	-193.56	-2,733.47	2,737.47	0.00	0.00	0.00	
6,500.00	91.14	268.56	3,807.85	-196.08	-2,833.42	2,837.45	0.00	0.00	0.00	
6,600.00	91.14	268.56	3,805.87	-198.59	-2,933.37	2,937.43	0.00	0.00	0.00	
6,700.00	91.14	268.56	3,803.89	-201.11	-3,033.31	3,037.41	0.00	0.00	0.00	
6,800.00	91.14	268.56	3,801.91	-203.63	-3,133.26	3,137.39	0.00	0.00	0.00	
6,900.00	91.14	268.56	3,799.92	-206.15	-3,233.21	3,237.37	0.00	0.00	0.00	
7,000.00	91.14	268.56	3,797.94	-208.66	-3,333.16	3,337.35	0.00	0.00	0.00	
7,100.00	91.14	268.56	3,795.96	-211.18	-3,433.11	3,437.33	0.00	0.00	0.00	
7,200.00	91.14	268.56	3,793.98	-213.70	-3,533.06	3,537.31	0.00	0.00	0.00	
7,300.00	91.14	268.56	3,792.00	-216.22	-3,633.01	3,637.29	0.00	0.00	0.00	
7,400.00	91.14	268.56	3,790.02	-218.73	-3,732.96	3,737.27	0.00	0.00	0.00	
7,500.00	91.14	268.56	3,788.04	-221.25	-3,832.90	3,837.25	0.00	0.00	0.00	
7,600.00	91.14	268.56	3,786.06	-223.77	-3,932.85	3,937.23	0.00	0.00	0.00	
7,700.00	91.14	268.56	3,784.08	-226.29	-4,032.80	4,037.21	0.00	0.00	0.00	
7,800.00	91.14	268.56	3,782.10	-228.81	-4,132.75	4,137.19	0.00	0.00	0.00	
7,900.00	91.14	268.56	3,780.12	-231.32	-4,232.70	4,237.18	0.00	0.00	0.00	
8,000.00	91.14	268.56	3,778.13	-233.84	-4,332.65	4,337.16	0.00	0.00	0.00	
8,100.00	91.14	268.56	3,776.15	-236.36	-4,432.60	4,437.14	0.00	0.00	0.00	
8,200.00	91.14	268.56	3,774.17	-238.88	-4,532.54	4,537.12	0.00	0.00	0.00	
8,300.00	91.14	268.56	3,772.19	-241.39	-4,632.49	4,637.10	0.00	0.00	0.00	
8,400.00	91.14	268.56	3,770.21	-243.91	-4,732.44	4,737.08	0.00	0.00	0.00	
8,500.00	91.14	268.56	3,768.23	-246.43	-4,832.39	4,837.06	0.00	0.00	0.00	



Planning Report

Database:	EDM 5000.1.13 Single User Db	Local Co-ordinate Reference:	Well 20H
Company:	SPUR ENERGY PARTNERS, LLC	TVD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Project:	EDDY COUNTY, NM (NAD 83 - NME)	MD Reference:	RKB = 20' @ 3701.00usft (AKITA 57)
Site:	WELCH CD 28 STATE COM	North Reference:	Grid
Well:	20H	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)
8,600.00	91.14	268.56	3,766.25	-248.95	-4,932.34	4,937.04	0.00	0.00	0.00
8,700.00	91.14	268.56	3,764.27	-251.47	-5,032.29	5,037.02	0.00	0.00	0.00
8,800.00	91.14	268.56	3,762.29	-253.98	-5,132.24	5,137.00	0.00	0.00	0.00
8,900.00	91.14	268.56	3,760.31	-256.50	-5,232.19	5,236.98	0.00	0.00	0.00
9,000.00	91.14	268.56	3,758.33	-259.02	-5,332.13	5,336.96	0.00	0.00	0.00
9,100.00	91.14	268.56	3,756.34	-261.54	-5,432.08	5,436.94	0.00	0.00	0.00
9,200.00	91.14	268.56	3,754.36	-264.05	-5,532.03	5,536.92	0.00	0.00	0.00
9,300.00	91.14	268.56	3,752.38	-266.57	-5,631.98	5,636.90	0.00	0.00	0.00
9,370.26	91.14	268.56	3,750.99	-268.34	-5,702.20	5,707.14	0.00	0.00	0.00
WELCH CD 28 STATE COM #20H LTP:100' FWL									
9,400.00	91.14	268.56	3,750.40	-269.09	-5,731.93	5,736.88	0.00	0.00	0.00
9,420.28	91.14	268.56	3,750.00	-269.60	-5,752.20	5,757.16	0.00	0.00	0.00
WELCH CD 28 STATE COM #20H BHL:2010' FSL, 50' FWL									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
WELCH CD 28 STATE - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	656,384.30	591,369.40	32.8043246	-104.1704964
WELCH CD 28 STATE - plan hits target center - Point	0.00	0.00	2,749.55	-92.38	236.27	656,291.93	591,605.67	32.8040697	-104.1697279
WELCH CD 28 STATE - plan hits target center - Point	0.00	0.00	3,750.00	-269.60	-5,752.20	656,114.70	585,617.20	32.8036065	-104.1892190
WELCH CD 28 STATE - plan misses target center by 0.06usft at 9370.26usft MD (3750.99 TVD, -268.34 N, -5702.20 E) - Point	0.00	0.00	3,750.99	-268.40	-5,702.20	656,115.90	585,667.20	32.8036096	-104.1890563
WELCH CD 28 STATE - plan hits target center - Point	0.00	0.00	3,850.00	-142.50	-706.60	656,241.80	590,662.80	32.8039359	-104.1727969



Project: EDDY COUNTY, NM (NAD 83 - NME)
Site: WELCH CD 28 STATE COM
Well: 20H
Wellbore: Wellbore #1
Design: PERMIT

WELL DETAILS: 20H

Rig Name:		AKITA 57		RKB = 20' @ 3701.00usft (AKITA 57)	
Ground Level:		3681.00			
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	656384.30	591369.40	32.8043246	-104.1704965

PROJECT DETAILS: EDDY COUNTY, NM (NAD 83 - NME)

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

Start Build 2.00

SECTION DETAILS									Target
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSect	
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	
3	615.87	6.32	111.35	615.23	-6.33	16.20	2.00	-16.04	
4	2763.23	6.32	111.35	2749.55	-92.38	236.27	0.00	-233.87	
5	3860.74	60.00	268.56	3673.35	-130.64	-235.72	6.00	238.92	
6	4060.74	60.00	268.56	3773.35	-135.00	-408.87	0.00	412.13	
7	4372.09	91.14	268.56	3850.00	-142.50	-706.60	10.00	709.96	
8	9370.26	91.14	268.56	3750.99	-268.34	-5702.20	0.00	5707.14	
9	9420.28	91.14	268.56	3750.00	-269.60	-5752.20	0.00	5757.16	

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
WELCH CD 28 STATE COM #20H SHL:2143' FSL, 605' FWL	0.00	0.00	0.00	656384.30	591369.40	32.8043246	-104.1704965
WELCH CD 28 STATE COM #20H KOP:2763.23' MD	2749.55	-92.38	236.27	656291.92	591605.67	32.8040697	-104.1697280
WELCH CD 28 STATE COM #20H BHL:2010' FSL, 50' FWL	3750.00	-269.60	-5752.20	656114.70	585617.20	32.8036065	-104.1892191
WELCH CD 28 STATE COM #20H LTP:100' FWL	3750.99	-268.40	-5702.20	656115.90	585667.20	32.8036096	-104.1890563
WELCH CD 28 STATE COM #20H FTP:100' FEL	3850.00	-142.50	-706.60	656241.80	590662.80	32.8039359	-104.1727969

WELCH CD 28 STATE COM #20H KOP:2763.23' MD

Start DLS 6.00 TFO 158.42

Start 200.00 hold at 3860.74 MD

Start Build 10.00

LP at 4372.09 MD

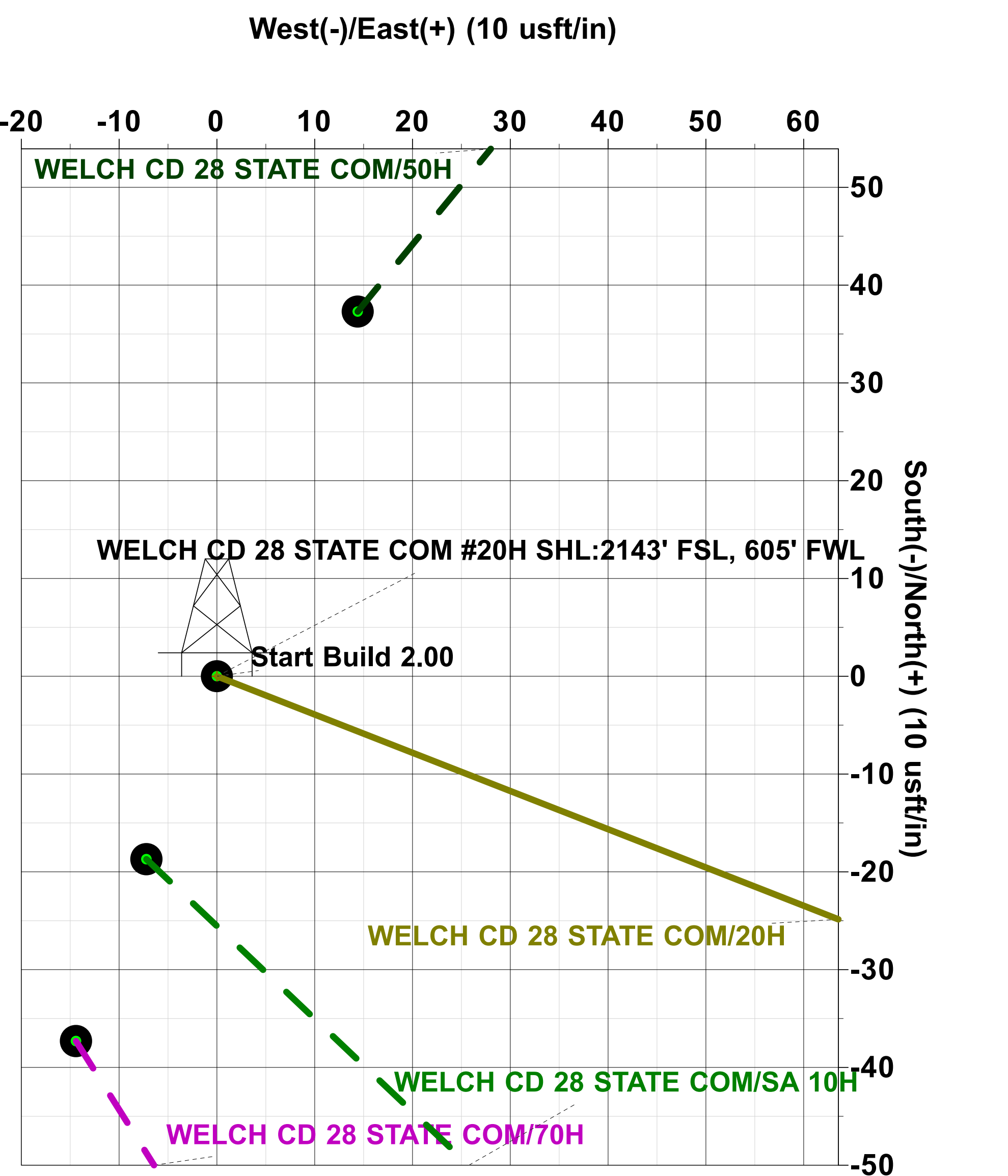
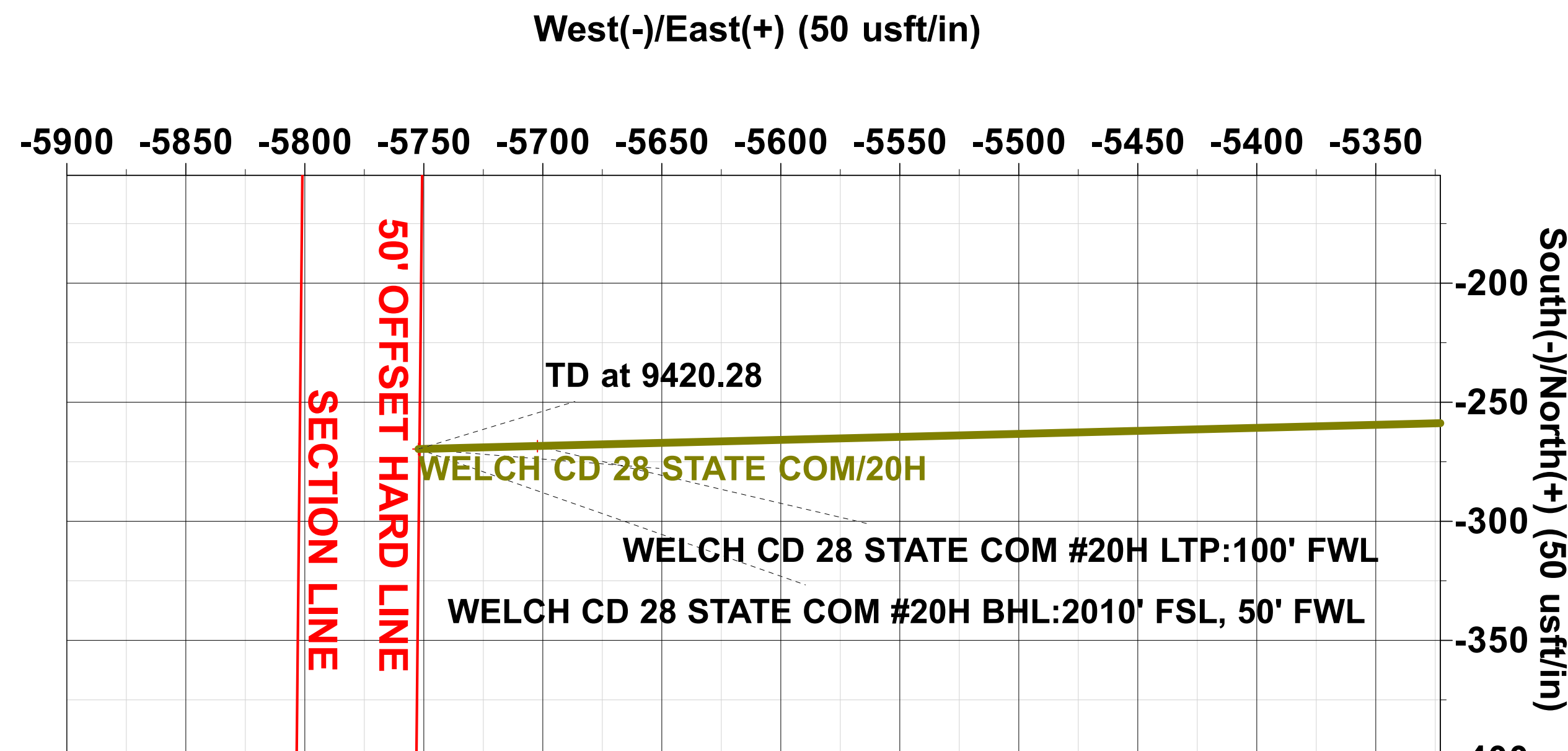
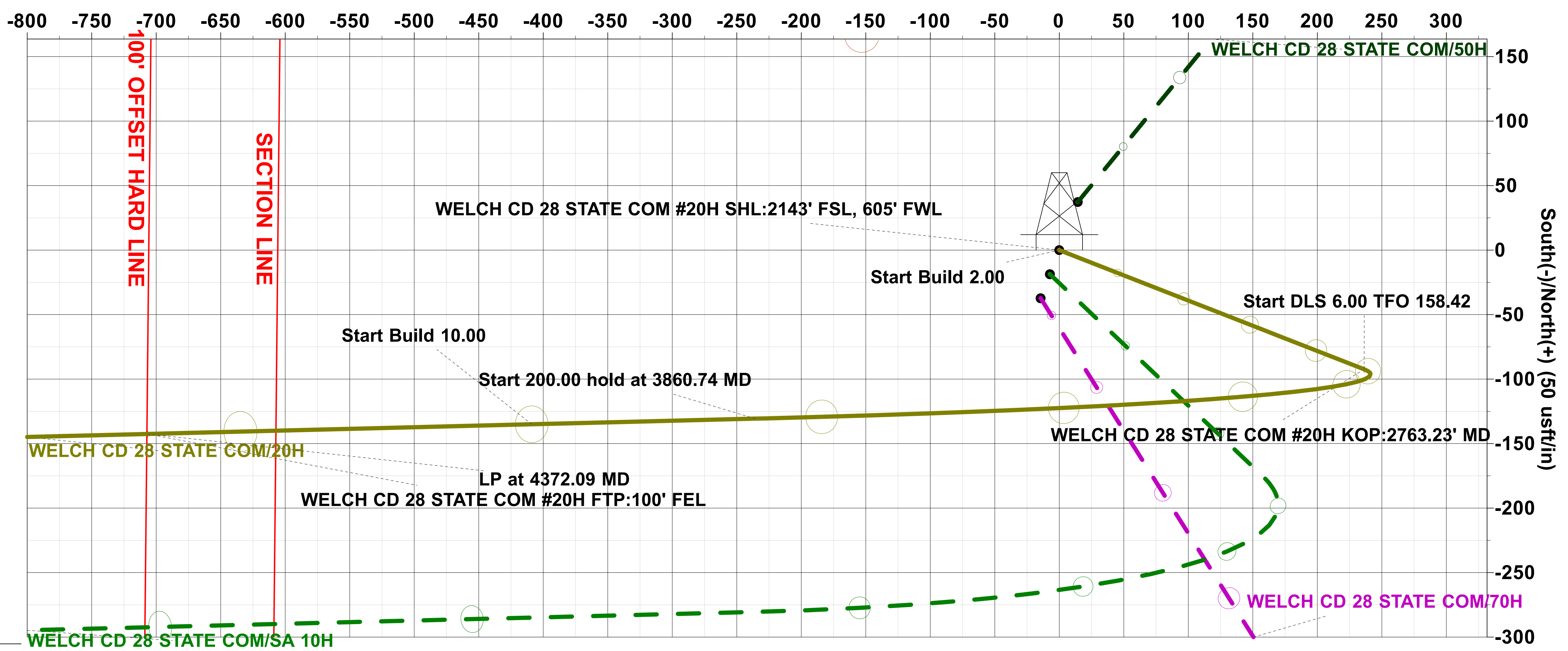
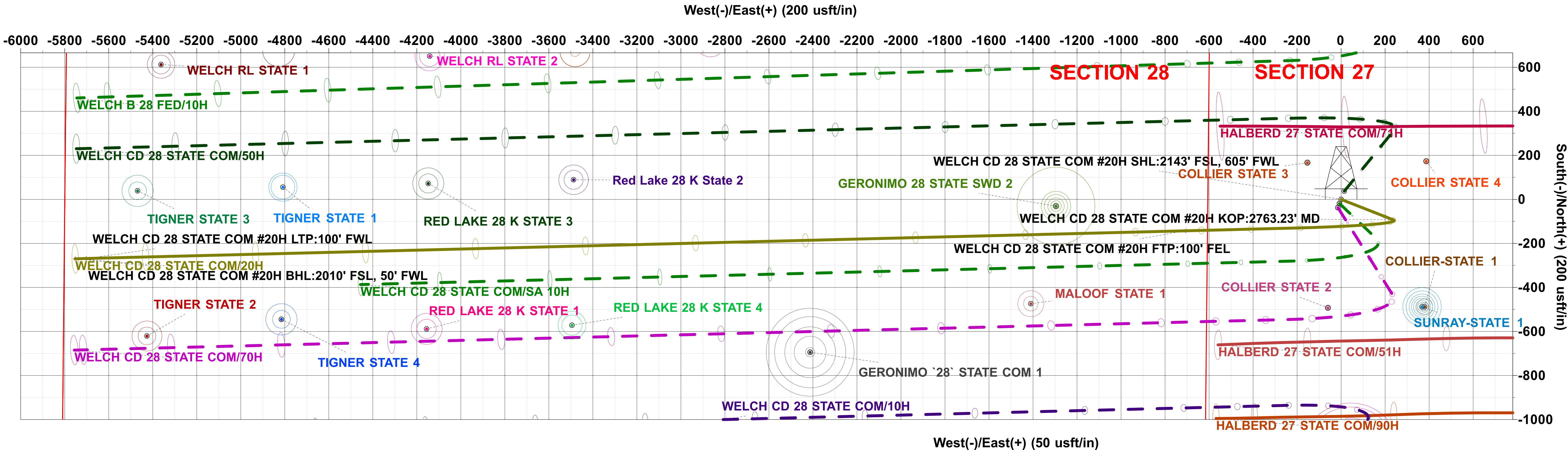
WELCH CD 28 STATE COM #20H FTP:100' FEL

WELCH CD 28 STATE COM #20H LTP:100' FWL

WELCH CD 28 STATE COM #20H BHL:2010' FSL, 50' FWL

TD at 9420.28

Vertical Section at 268.56° (200 usft/in)



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Plan: PERMIT (20H/Wellbore #1)

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