

OCD Hobbs

HOBBS OCD

NOV 02 2015

ATS-15-326

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

RECEIVED

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NMNM-118726
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name N/A
2. Name of Operator ROADRUNNER OIL & GAS LLC (308491)		7. If Unit or CA Agreement, Name and No. N/A
3a. Address 363 N. SAM HOUSTON PKWY EAST, #100 HOUSTON, TX 77060	3b. Phone No. (include area code) 281 674-2584	8. Lease Name and Well No. (315635) ACME FEDERAL 25-33-5 2H
3a. Address 363 N. SAM HOUSTON PKWY EAST, #100 HOUSTON, TX 77060		9. API Well No. 30-025- 42922
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At surface 220' FSL & 235' FEL 5-25S-33E (P) At proposed prod. zone 250' FNL & 430' FEL 5-25S-33E (A.)		10. Field and Pool. or Exploratory RED-HILLS; UPPER BS SHALE (97900)
14. Distance in miles and direction from nearest town or post office* 23 AIR MILES WNW OF JAL, NM		11. Sec., T. R. M. or Blk. and Survey or Area SESE 5-25S-33E
15. Distance from proposed* location to nearest property or lease line, ft. SHL: 220' BHL: 250' (Also to nearest drig. unit line, if any)	16. No. of acres in lease 1,319.75	12. County or Parish LEA
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. SHL: 45' (Acme 1H) BHL: 470' (Bass Fed. 5)	19. Proposed Depth TVD: 10021' MD14601	13. State NM
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3,439' UNGRADED	22. Approximate date work will start* 04/01/2015	17. Spacing Unit dedicated to this well LOT 1, SENE, & E2SE4
		20. BLM/BIA Bond No. on file 022040443 NMB001170
		23. Estimated duration 3 MONTHS

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

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

25. Signature 	Name (Printed/Typed) BRIAN WOOD (PHONE: 505 466-8120)	Date 12/18/2014
Title CONSULTANT (FAX: 505 466-9682)		
Approved by (Signature) /s/ STEPHEN J. CAFFEY	Name (Printed/Typed)	Date DEC 27 2015
Title FOR FIELD MANAGER	Office BLM-CARLSBAD FIELD OFFICE	

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

Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

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

(Continued on page 2)

*(Instructions on page 2)

Carlsbad Controlled Water Basin

K2
11/04/15

Witness Surface &
Intermediate Casing

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS
ATTACHED

NOV 05 2015

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2014**SUNDRY NOTICES AND REPORTS ON WELLS**
Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.5. Lease Serial No.
NMNM118726

6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 2 **HOBBS OCD**

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other**NOV 02 2015**2. Name of Operator
EOG Resources, Inc.

7. If Unit of CA/Agreement, Name and/or No.

3a. Address
P.O. Box 2267
Midland, TX 797023b. Phone No. (include area code)
432-686-36898. Well Name and No.
Acme Federal 25-33-5 2H9. API Well No.
30-025-4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
220' FSL & 235' FEL, SESE (P), Sec 5, T25S, R33E10. Field and Pool or Exploratory Area
WC Lower Avalon Shale 411. County or Parish, State
Lea, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☒ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other _____
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change of Operator _____
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	_____

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

Effective August 1, 2015, EOG Resources, Inc. assumed operatorship of this well from Roadrunner Oil & Gas LLC

EOG Resources, Inc. accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted on the leased land or portion thereof, as described above.

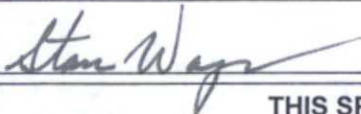
BLM bond number on file is NM 2308.

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)

Stan Wagner

Title Regulatory Specialist

Signature



Date 09/09/2015

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

/s/ STEPHEN J. CAFFEY

FOR

FIELD MANAGER

Date

OCT 27 2015

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

Title

BLM-CARLSBAD FIELD OFFICE

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

(Instructions on page 2)

Roadrunner Oil & Gas LLC
Acme Federal 25-33-5 2H

DRILL PLAN PAGE 1

SHL 220' FSL & 235' FEL Sec. 5, T. 25 S., R. 33 E.
BHL 250' FNL & 430' FEL Sec. 5, T. 25 S., R. 33 E.
Lea County, NM

Drilling Program

HOBBS OCD

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RECEIVED

1. ESTIMATED TOPS

<u>Name</u>	<u>TVD</u>	<u>Content</u>
Quaternary	0'	fresh water
Santa Rosa	296'	brackish water
Rustler	1,104'	anhydrite
Salado (top of salt)	1,444'	salt, brine
Castile	3,414'	brine
Lamar (base of salt)	5,039'	salt
Bell Canyon	5,099'	brine water
Cherry Canyon	6,074'	oil, gas
Brushy Canyon	7,574'	oil, gas
Bone Spring limestone	9,124'	---
Leonard shale	9,194'	---
Avalon carbonate 1	9,284'	---
Avalon shale 1	9,324'	oil, gas
Avalon carbonate 2	9,444'	oil, gas
Avalon shale 2	9,524'	oil, gas
Avalon carbonate 3	9,664'	oil, gas
Avalon shale 3	9,774'	oil, gas
Avalon carbonate 4	9,854'	oil, gas
Avalon shale 4	9,924'	oil, gas
Lower Avalon shale 4 (target)	10,024'	oil, gas
TD (MD = 14,601')	10,021'	---

2. NOTABLE ZONES

Closest water well (C 02313) is 5,802' to the northwest. Depth to water in that 150' deep windmill is 60'.

Roadrunner Oil & Gas LLC
Acme Federal 25-33-5 2H

DRILL PLAN PAGE 2

SHL 220' FSL & 235' FEL Sec. 5, T. 25 S., R. 33 E.

BHL 250' FNL & 430' FEL Sec. 5, T. 25 S., R. 33 E.

Lea County, NM

3. PRESSURE CONTROL

See COA 2500
The initial BOP test will occur before drilling out the 13-3/8" casing shoe. A third party testing service will do all tests. Test pressures will be 250/5,000 psi for rams and 250/3,500 psi for annular (70% of working pressure) for 10 minutes. BOPE stack will be tested every 14 to 21 days. Pipe rams and blind rams will be operationally checked on each trip out of the hole. Upper and lower Kelly cocks will be available at all times. A full opening stabbing valve and inside BOP with the appropriate connections will be on the drill floor at all times.

Surface Casing: 1,000 psi test pressure

Intermediate Casing: 1,500 psi test pressure

Casing Head: 13-3/8" SOW x 13-5/8" 5M

Casing Spool: 13-5/8" 5M x 11" 5M

Tubing Head: 11" 5M x 7-1/16" 10M

BOPE: 13-5/8" 10M (double rams and single rams)

Annular: 13-5/8" 5M

13-5/8" 1,500 psi Rotating head

10M Choke Manifold

X If Helmerich & Payne 227 is used, then Roadrunner requests a variance to use a co-flex line between the BOP and choke manifold. *See COA*

Manufacturer: Continental ContiTech Beattie Co.

Serial Number: 67085

Length: 35' Size: 3" ID

Ends: 3" coupling with 4-1/16" 10K API

Flange end WP rating: 10,000 psi

Anchors required by manufacturer: No

4. CASING & CEMENT

An S shaped hole will be drilled to kick off point at 9558'. A build section

Roadrunner Oil & Gas LLC
Acme Federal 25-33-5 2H

DRILL PLAN PAGE 3

SHL 220' FSL & 235' FEL Sec. 5, T. 25 S., R. 33 E.

BHL 250' FNL & 430' FEL Sec. 5, T. 25 S., R. 33 E.

Lea County, NM

will next be drilled to a landing point at 10,311'. Roadrunner will then drill laterally to a MD of 14,601'(TVD = 9,999'). Hole will extend north of the drilling window to allow for pump installation. All perforations will be inside ($\geq 330'$ from the dedication perimeter) the drilling window.

See COA for Depth Changes

Hole O. D.	Interval (MD)	Casing O. D.	Age	Weight (lb/ft)	Grade	Connection	Collapse	Burst	Tension
17.5"	0' - 1150'	13.375"	New	54.5	J-55	Butt	2.70	4.66	13.6
12.25"	0' - 5165'	9.625"	New	40	N-80	LTC	1.48	1.83	3.56
8.75"	0' - 14601'	5.5"	New	23	L-80 HCE	DWC/C	2.97	1.44	1.72

1,170'
5,040'

The following cement volumes are approximate and are calculated on the assumption that a gauge hole will be achieved. The surface and intermediate casing strings will have centralizers on the bottom 3 joints of casing (minimum of one centralizer per joint) and then every 3rd joint to surface. The production string will have centralizers on every joint in the lateral, then every other joint through the curve and to surface. The casing shoe will not be drilled out until ≥ 500 psi compressive strength is achieved.

Casing	Slurry	Sacks	pounds per gallon	cubic feet per sack	gallons per sack	cubic feet	% excess	TOC
13.375" lead	Premium plus C + 0.005 lb/sk static free + 2% CaCl_2 + 0.005 gps FP-6L + 4% bentonite	661	13.5	1.75	9.16	1156	100	GL
13.375" tail	Premium plus C + 0.005 lb/sk static free + 1% CaCl_2 + 0.005 gps FP-6L	339	14.8	1.34	6.34	454	100	850'
9.625" lead	35:65 poz Premium plus C + 0.005 lb/sk static free + 5%	957	12.9	1.92	10.16	1837	50	GL

Roadrunner Oil & Gas LLC
Acme Federal 25-33-5 2H

DRILL PLAN PAGE 4

SHL 220' FSL & 235' FEL Sec. 5, T. 25 S., R. 33 E.

BHL 250' FNL & 430' FEL Sec. 5, T. 25 S., R. 33 E.

Lea County, NM

	NaCl + 0.6% CD-32 + 0.005 gps FP-6L + 4% bentonite + 0.5% sodium metasilicate + 0.1% FL-52A + 5% MPA							
9.625" tail	Premium plus C + 0.005 lb/sk static free + 0.005 gps FP-6L	368	14.8	1.33	6.32	489	50	4165'
5.5" lead	50:50 poz Premium plus H + 0.005 lb/sk static free + 5% NaCl + 0.005 gps FP-6L + 10% bentonite + 0.2% sodium metasilicate + 0.45% FL-52A	1188	11.9	2.38	13.53	2827	50 in open hole & zero in casing	GL
5.5" tail	50:50 poz Premium plus H + 0.005 lb/sk static free + 5% NaCl + 0.3% CD-32 + 0.3% FL-25 + 0.005 gps FP-6L + 2% bentonite + 0.3% sodium metasilicate + 0.4% FL-52A	1403	14.2	1.30	5.87	1823	30	9058'

5. MUD PROGRAM

An electronic/mechanical mud monitor with a minimum pit volume totalizer, stroke counter, and flow sensor will be used.

Roadrunner Oil & Gas LLC

DRILL PLAN PAGE 5

Acme Federal 25-33-5 2H

SHL 220' FSL & 235' FEL Sec. 5, T. 25 S., R. 33 E.

BHL 250' FNL & 430' FEL Sec. 5, T. 25 S., R. 33 E.

Lea County, NM

Interval	Type	Weight	Viscosity	Fluid Loss
0' - 1150' ^{1170'}	fresh water spud mud	8.6 - 8.9	28 - 36	no control
1150' - 5165' ^{5040'}	brine	9.8 - 10.0	28 - 30	no control
5165' - 10311' KOP-EOB	cut brine	8.8 - 9.3	28 - 30	no control
Lateral 10311' - TD	cut brine	8.8 - 9.3	28 - 30	no control

Sufficient mud materials will be kept on location at all times in order to combat lost circulation or abnormal pressures. If poor hole conditions are encountered, then mud properties may have to be adjusted in order to run casing.

* 6. CORES, TESTS, & LOGS See COA for logging requirements.
GRVN TD (vertical section) to surface

No core, drill stem test, or log is planned.

7. DOWN HOLE CONDITIONS

No abnormal pressure or temperature is expected. Maximum expected bottom hole pressure is 5204 psi. Expected bottom hole temperature is 165° F.

No H₂S is expected. Nevertheless, H₂S plan will be activated at least 500' before drilling into the Delaware formation.

Water and/or brine flows are possible in the Salado, Castile, Delaware, and Bone Spring. Lost circulation is possible in the Bone Spring.

8. OTHER INFORMATION

The anticipated spud date is upon approval. It is expected it will take 3 months to drill and complete the well.

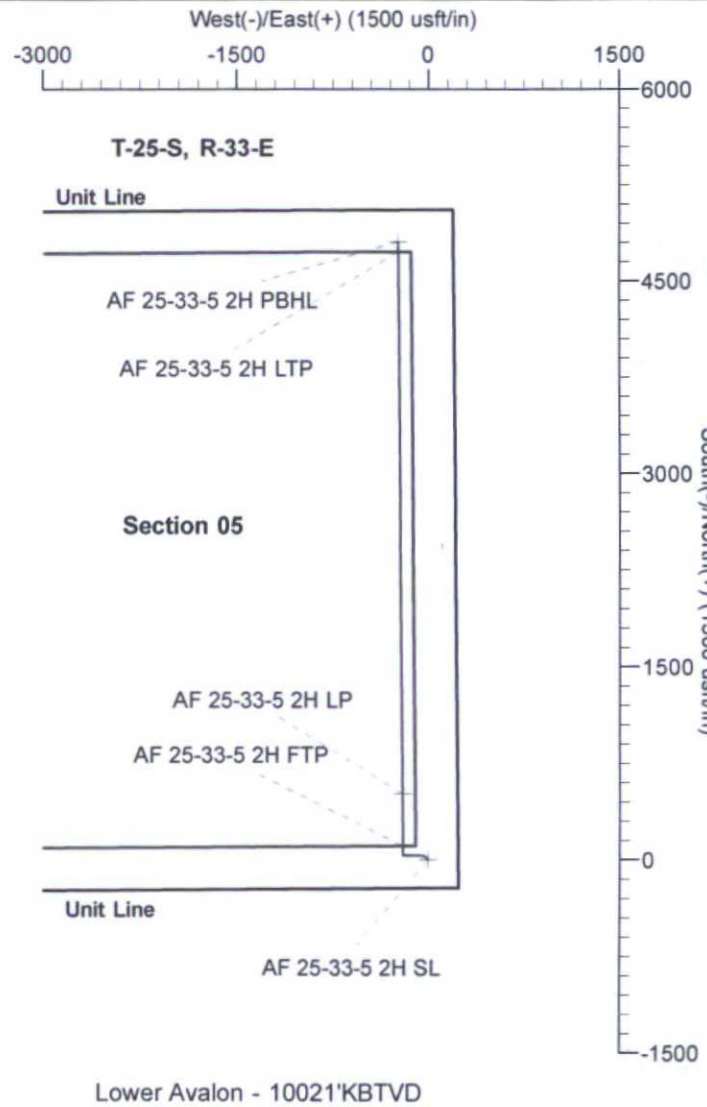
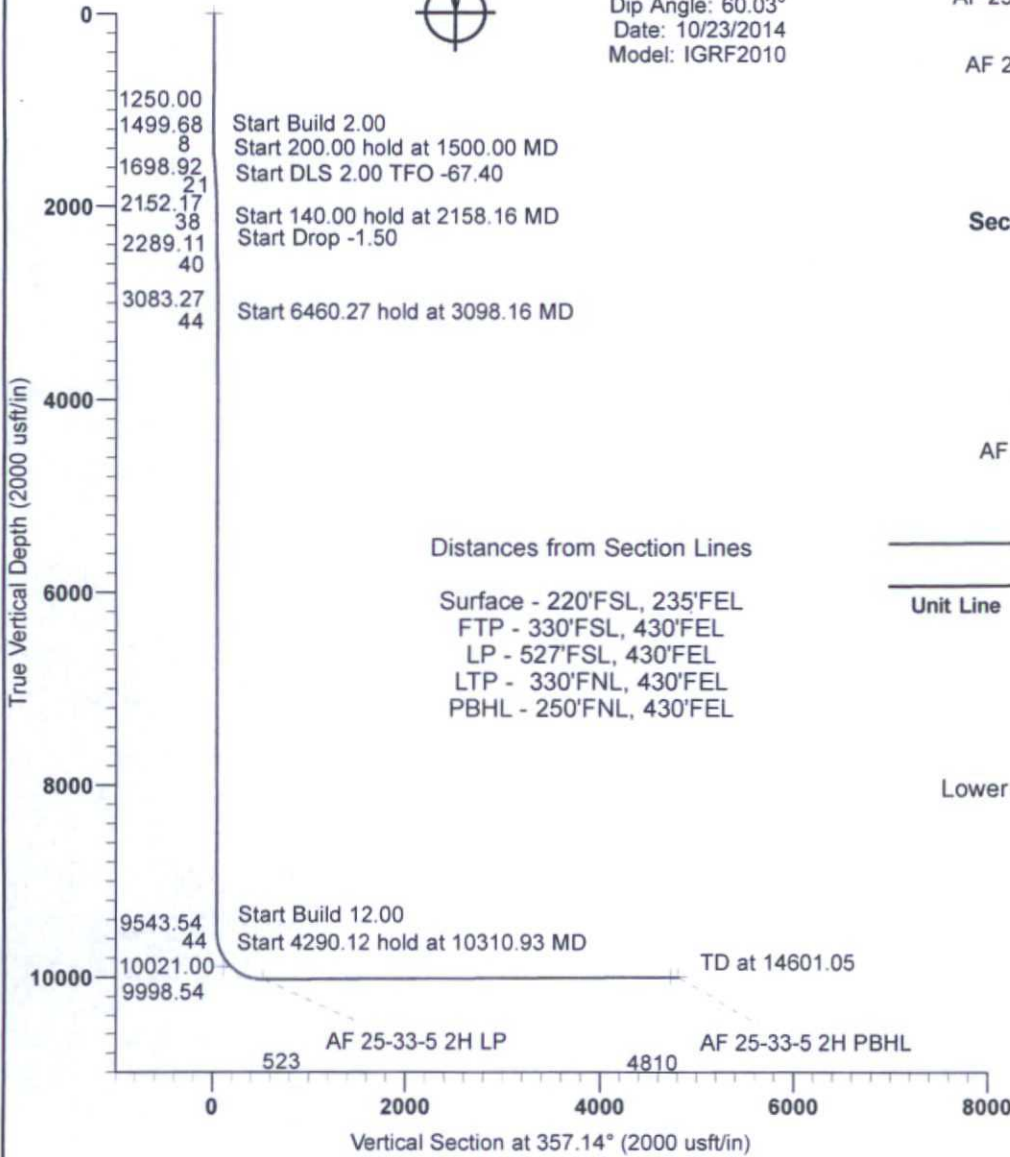
ROADRUNNER OIL & GAS, LLC

Project: Lea County, NM
Site: Acme Federal 25-33-5 1H - 2H
Well: 2H
Wellbore: Lateral
Design: Plan #1



Azimuths to Grid North
True North: -0.40°
Magnetic North: 6.78°

Magnetic Field
Strength: 48236.2snT
Dip Angle: 60.03°
Date: 10/23/2014
Model: IGRF2010



TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
AF 25-33-5 2H SL	0.00	0.00	0.00	420189.27	772466.29	Point
AF 25-33-5 2H FTP	9892.04	108.49	-195.94	420297.76	772270.35	Point
AF 25-33-5 2H PBHL	9998.54	4803.99	-240.28	424993.25	772226.01	Point
AF 25-33-5 2H LTP	9999.00	4724.01	-239.43	424913.27	772226.86	Point
AF 25-33-5 2H LP	10021.00	514.12	-199.10	420703.39	772267.19	Point

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1250.00	0.00	0.00	1250.00	0.00	0.00	0.00	0.00	0.00	
1500.00	5.00	315.00	1499.68	7.71	-7.71	2.00	315.00	8.08	
1700.00	5.00	315.00	1698.92	20.03	-20.03	0.00	0.00	21.01	
2158.16	12.00	270.00	2152.17	34.18	-81.91	2.00	-67.40	38.23	
2289.16	12.00	270.00	2289.11	34.18	-111.02	0.00	0.00	39.68	
3098.16	0.00	270.00	3083.27	34.18	-194.49	1.50	180.00	43.84	
9558.43	0.00	270.00	9543.54	34.18	-194.49	0.00	270.00	43.84	
10310.93	90.30	359.45	10021.00	514.12	-199.10	12.00	359.45	523.42	
14601.05	90.30	359.45	9998.54	4803.99	-240.28	0.00	0.00	4810.00	AF 25-33-5 2H PBHL

Plan: Plan #1 (2H/Lateral)
Created By: Tari Umy
Date: 15:31, November 13 2014

PREMIER DIRECTIONAL DRILLING
12941 North Freeway Suite 400, Houston, TX 77060
Phone: 281-673-4000



Premier Directional Drilling

Planning Report

Database:	EDM 5000.1 MultiUser DB	Local Co-ordinate Reference:	Well 2H - Slot 2H
Company:	ROADRUNNER OIL & GAS, LLC	TVD Reference:	3439 @ 3439.00usft (est)
Project:	Lea County, NM	MD Reference:	3439 @ 3439.00usft (est)
Site:	Acme Federal 25-33-5 1H - 2H	North Reference:	Grid
Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

Project	Lea County, NM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Acme Federal 25-33-5 1H - 2H, centered on 1H				
Site Position:		Northing:	420,189.00 usft	Latitude:	32° 9' 10.710 N
From:	Map	Easting:	772,421.00 usft	Longitude:	103° 35' 11.907 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.40 °

Well	2H - Slot 2H					
Well Position	+N/-S	0.27 usft	Northing:	420,189.26 usft	Latitude:	32° 9' 10.710 N
	+E/-W	45.29 usft	Easting:	772,466.28 usft	Longitude:	103° 35' 11.380 W
Position Uncertainty	0.00 usft		Wellhead Elevation:	Ground Level:		3,439.00 usft

Wellbore	Lateral				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/23/2014	7.17	60.03	48,236

Design	Plan #1			
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	357.14

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,250.00	0.00	0.00	1,250.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,500.00	5.00	315.00	1,499.68	7.71	-7.71	2.00	2.00	0.00	315.00	
1,700.00	5.00	315.00	1,698.92	20.03	-20.03	0.00	0.00	0.00	0.00	
2,158.16	12.00	270.00	2,152.17	34.18	-81.91	2.00	1.53	-9.82	-67.40	
2,298.16	12.00	270.00	2,289.11	34.18	-111.02	0.00	0.00	0.00	0.00	
3,098.16	0.00	270.00	3,083.27	34.18	-194.49	1.50	-1.50	0.00	180.00	
9,558.43	0.00	270.00	9,543.54	34.18	-194.49	0.00	0.00	0.00	270.00	
10,310.93	90.30	359.45	10,021.00	514.12	-199.10	12.00	12.00	0.00	359.45	
14,601.05	90.30	359.45	9,998.54	4,803.99	-240.28	0.00	0.00	0.00	0.00	AF 25-33-5 2H PBHL

Premier Directional Drilling

Planning Report

Database:	EDM 5000.1 MultiUser DB	Local Co-ordinate Reference:	Well 2H - Slot 2H
Company:	ROADRUNNER OIL & GAS, LLC	TVD Reference:	3439 @ 3439.00usft (est)
Project:	Lea County, NM	MD Reference:	3439 @ 3439.00usft (est)
Site:	Acme Federal 25-33-5 1H - 2H	North Reference:	Grid
Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,250.00	0.00	0.00	1,250.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	1.00	315.00	1,300.00	0.31	-0.31	0.32	2.00	2.00	0.00
1,400.00	3.00	315.00	1,399.93	2.78	-2.78	2.91	2.00	2.00	0.00
1,500.00	5.00	315.00	1,499.68	7.71	-7.71	8.08	2.00	2.00	0.00
1,600.00	5.00	315.00	1,599.30	13.87	-13.87	14.55	0.00	0.00	0.00
1,700.00	5.00	315.00	1,698.92	20.03	-20.03	21.01	0.00	0.00	0.00
1,800.00	6.06	297.22	1,798.46	25.53	-27.81	26.88	2.00	1.06	-17.78
1,900.00	7.51	285.46	1,897.77	29.68	-38.79	31.58	2.00	1.45	-11.76
2,000.00	9.16	277.71	1,996.71	32.49	-52.98	35.10	2.00	1.66	-7.76
2,100.00	10.94	272.37	2,095.17	33.95	-70.35	37.42	2.00	1.77	-5.33
2,158.16	12.00	270.00	2,152.17	34.18	-81.91	38.23	2.00	1.83	-4.08
2,200.00	12.00	270.00	2,193.10	34.18	-90.61	38.66	0.00	0.00	0.00
2,298.16	12.00	270.00	2,289.11	34.18	-111.02	39.68	0.00	0.00	0.00
2,300.00	11.97	270.00	2,290.91	34.18	-111.40	39.70	1.50	-1.50	0.00
2,400.00	10.47	270.00	2,389.00	34.18	-130.86	40.67	1.50	-1.50	0.00
2,500.00	8.97	270.00	2,487.56	34.18	-147.75	41.51	1.50	-1.50	0.00
2,600.00	7.47	270.00	2,586.53	34.18	-162.05	42.23	1.50	-1.50	0.00
2,700.00	5.97	270.00	2,685.84	34.18	-173.76	42.81	1.50	-1.50	0.00
2,800.00	4.47	270.00	2,785.42	34.18	-182.86	43.26	1.50	-1.50	0.00
2,900.00	2.97	270.00	2,885.20	34.18	-189.35	43.59	1.50	-1.50	0.00
3,000.00	1.47	270.00	2,985.13	34.18	-193.23	43.78	1.50	-1.50	0.00
3,098.16	0.00	270.00	3,083.27	34.18	-194.49	43.84	1.50	-1.50	0.00
3,100.00	0.00	270.00	3,085.12	34.18	-194.49	43.84	0.00	0.00	0.00
3,200.00	0.00	270.00	3,185.12	34.18	-194.49	43.84	0.00	0.00	0.00
3,300.00	0.00	270.00	3,285.12	34.18	-194.49	43.84	0.00	0.00	0.00
3,400.00	0.00	270.00	3,385.12	34.18	-194.49	43.84	0.00	0.00	0.00
3,500.00	0.00	270.00	3,485.12	34.18	-194.49	43.84	0.00	0.00	0.00
3,600.00	0.00	270.00	3,585.12	34.18	-194.49	43.84	0.00	0.00	0.00
3,700.00	0.00	270.00	3,685.12	34.18	-194.49	43.84	0.00	0.00	0.00
3,800.00	0.00	270.00	3,785.12	34.18	-194.49	43.84	0.00	0.00	0.00
3,900.00	0.00	270.00	3,885.12	34.18	-194.49	43.84	0.00	0.00	0.00
4,000.00	0.00	270.00	3,985.12	34.18	-194.49	43.84	0.00	0.00	0.00
4,100.00	0.00	270.00	4,085.12	34.18	-194.49	43.84	0.00	0.00	0.00
4,200.00	0.00	270.00	4,185.12	34.18	-194.49	43.84	0.00	0.00	0.00
4,300.00	0.00	270.00	4,285.12	34.18	-194.49	43.84	0.00	0.00	0.00
4,400.00	0.00	270.00	4,385.12	34.18	-194.49	43.84	0.00	0.00	0.00
4,500.00	0.00	270.00	4,485.12	34.18	-194.49	43.84	0.00	0.00	0.00
4,600.00	0.00	270.00	4,585.12	34.18	-194.49	43.84	0.00	0.00	0.00
4,700.00	0.00	270.00	4,685.12	34.18	-194.49	43.84	0.00	0.00	0.00
4,800.00	0.00	270.00	4,785.12	34.18	-194.49	43.84	0.00	0.00	0.00
4,900.00	0.00	270.00	4,885.12	34.18	-194.49	43.84	0.00	0.00	0.00

Premier Directional Drilling

Planning Report

Database:	EDM 5000.1 MultiUser DB	Local Co-ordinate Reference:	Well 2H - Slot 2H
Company:	ROADRUNNER OIL & GAS, LLC	TVD Reference:	3439 @ 3439.00usft (est)
Project:	Lea County, NM	MD Reference:	3439 @ 3439.00usft (est)
Site:	Acme Federal 25-33-5 1H - 2H	North Reference:	Grid
Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,000.00	0.00	270.00	4,985.12	34.18	-194.49	43.84	0.00	0.00	0.00
5,100.00	0.00	270.00	5,085.12	34.18	-194.49	43.84	0.00	0.00	0.00
5,200.00	0.00	270.00	5,185.12	34.18	-194.49	43.84	0.00	0.00	0.00
5,300.00	0.00	270.00	5,285.12	34.18	-194.49	43.84	0.00	0.00	0.00
5,400.00	0.00	270.00	5,385.12	34.18	-194.49	43.84	0.00	0.00	0.00
5,500.00	0.00	270.00	5,485.12	34.18	-194.49	43.84	0.00	0.00	0.00
5,600.00	0.00	270.00	5,585.12	34.18	-194.49	43.84	0.00	0.00	0.00
5,700.00	0.00	270.00	5,685.12	34.18	-194.49	43.84	0.00	0.00	0.00
5,800.00	0.00	270.00	5,785.12	34.18	-194.49	43.84	0.00	0.00	0.00
5,900.00	0.00	270.00	5,885.12	34.18	-194.49	43.84	0.00	0.00	0.00
6,000.00	0.00	270.00	5,985.12	34.18	-194.49	43.84	0.00	0.00	0.00
6,100.00	0.00	270.00	6,085.12	34.18	-194.49	43.84	0.00	0.00	0.00
6,200.00	0.00	270.00	6,185.12	34.18	-194.49	43.84	0.00	0.00	0.00
6,300.00	0.00	270.00	6,285.12	34.18	-194.49	43.84	0.00	0.00	0.00
6,400.00	0.00	270.00	6,385.12	34.18	-194.49	43.84	0.00	0.00	0.00
6,500.00	0.00	270.00	6,485.12	34.18	-194.49	43.84	0.00	0.00	0.00
6,600.00	0.00	270.00	6,585.12	34.18	-194.49	43.84	0.00	0.00	0.00
6,700.00	0.00	270.00	6,685.12	34.18	-194.49	43.84	0.00	0.00	0.00
6,800.00	0.00	270.00	6,785.12	34.18	-194.49	43.84	0.00	0.00	0.00
6,900.00	0.00	270.00	6,885.12	34.18	-194.49	43.84	0.00	0.00	0.00
7,000.00	0.00	270.00	6,985.12	34.18	-194.49	43.84	0.00	0.00	0.00
7,100.00	0.00	270.00	7,085.12	34.18	-194.49	43.84	0.00	0.00	0.00
7,200.00	0.00	270.00	7,185.12	34.18	-194.49	43.84	0.00	0.00	0.00
7,300.00	0.00	270.00	7,285.12	34.18	-194.49	43.84	0.00	0.00	0.00
7,400.00	0.00	270.00	7,385.12	34.18	-194.49	43.84	0.00	0.00	0.00
7,500.00	0.00	270.00	7,485.12	34.18	-194.49	43.84	0.00	0.00	0.00
7,600.00	0.00	270.00	7,585.12	34.18	-194.49	43.84	0.00	0.00	0.00
7,700.00	0.00	270.00	7,685.12	34.18	-194.49	43.84	0.00	0.00	0.00
7,800.00	0.00	270.00	7,785.12	34.18	-194.49	43.84	0.00	0.00	0.00
7,900.00	0.00	270.00	7,885.12	34.18	-194.49	43.84	0.00	0.00	0.00
8,000.00	0.00	270.00	7,985.12	34.18	-194.49	43.84	0.00	0.00	0.00
8,100.00	0.00	270.00	8,085.12	34.18	-194.49	43.84	0.00	0.00	0.00
8,200.00	0.00	270.00	8,185.12	34.18	-194.49	43.84	0.00	0.00	0.00
8,300.00	0.00	270.00	8,285.12	34.18	-194.49	43.84	0.00	0.00	0.00
8,400.00	0.00	270.00	8,385.12	34.18	-194.49	43.84	0.00	0.00	0.00
8,500.00	0.00	270.00	8,485.12	34.18	-194.49	43.84	0.00	0.00	0.00
8,600.00	0.00	270.00	8,585.12	34.18	-194.49	43.84	0.00	0.00	0.00
8,700.00	0.00	270.00	8,685.12	34.18	-194.49	43.84	0.00	0.00	0.00
8,800.00	0.00	270.00	8,785.12	34.18	-194.49	43.84	0.00	0.00	0.00
8,900.00	0.00	270.00	8,885.12	34.18	-194.49	43.84	0.00	0.00	0.00
9,000.00	0.00	270.00	8,985.12	34.18	-194.49	43.84	0.00	0.00	0.00
9,100.00	0.00	270.00	9,085.12	34.18	-194.49	43.84	0.00	0.00	0.00
9,200.00	0.00	270.00	9,185.12	34.18	-194.49	43.84	0.00	0.00	0.00
9,300.00	0.00	270.00	9,285.12	34.18	-194.49	43.84	0.00	0.00	0.00
9,400.00	0.00	270.00	9,385.12	34.18	-194.49	43.84	0.00	0.00	0.00
9,500.00	0.00	270.00	9,485.12	34.18	-194.49	43.84	0.00	0.00	0.00
9,558.43	0.00	270.00	9,543.54	34.18	-194.49	43.84	0.00	0.00	0.00
9,575.00	1.99	359.45	9,560.11	34.47	-194.49	44.13	12.00	12.00	539.75
9,600.00	4.99	359.45	9,585.06	35.99	-194.51	45.65	12.00	12.00	0.00
9,625.00	7.99	359.45	9,609.90	38.82	-194.53	48.47	12.00	12.00	0.00
9,650.00	10.99	359.45	9,634.56	42.94	-194.57	52.59	12.00	12.00	0.00
9,675.00	13.99	359.45	9,658.96	48.34	-194.63	57.99	12.00	12.00	0.00
9,700.00	16.99	359.45	9,683.05	55.02	-194.69	64.66	12.00	12.00	0.00
9,725.00	19.99	359.45	9,706.76	62.94	-194.77	72.58	12.00	12.00	0.00

Premier Directional Drilling

Planning Report

Database:	EDM 5000.1 MultiUser DB	Local Co-ordinate Reference:	Well 2H - Slot 2H
Company:	ROADRUNNER OIL & GAS, LLC	TVD Reference:	3439 @ 3439.00usft (est)
Project:	Lea County, NM	MD Reference:	3439 @ 3439.00usft (est)
Site:	Acme Federal 25-33-5 1H - 2H	North Reference:	Grid
Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,750.00	22.99	359.45	9,730.02	72.10	-194.85	81.73	12.00	12.00	0.00
9,775.00	25.99	359.45	9,752.77	82.46	-194.95	92.09	12.00	12.00	0.00
9,800.00	28.99	359.45	9,774.94	94.00	-195.06	103.61	12.00	12.00	0.00
9,825.00	31.99	359.45	9,796.48	106.68	-195.19	116.29	12.00	12.00	0.00
9,850.00	34.99	359.45	9,817.33	120.47	-195.32	130.07	12.00	12.00	0.00
9,875.00	37.99	359.45	9,837.43	135.34	-195.46	144.92	12.00	12.00	0.00
9,900.00	40.99	359.45	9,856.72	151.23	-195.61	160.80	12.00	12.00	0.00
9,925.00	43.99	359.45	9,875.15	168.12	-195.78	177.68	12.00	12.00	0.00
9,950.00	46.99	359.45	9,892.67	185.94	-195.95	195.49	12.00	12.00	0.00
9,975.00	49.99	359.45	9,909.24	204.66	-196.13	214.19	12.00	12.00	0.00
10,000.00	52.99	359.45	9,924.81	224.22	-196.31	233.73	12.00	12.00	0.00
10,025.00	55.99	359.45	9,939.33	244.56	-196.51	254.06	12.00	12.00	0.00
10,050.00	58.99	359.45	9,952.76	265.64	-196.71	275.13	12.00	12.00	0.00
10,075.00	61.99	359.45	9,965.07	287.40	-196.92	296.86	12.00	12.00	0.00
10,100.00	64.99	359.45	9,976.23	309.76	-197.14	319.21	12.00	12.00	0.00
10,125.00	67.99	359.45	9,986.21	332.68	-197.36	342.12	12.00	12.00	0.00
10,150.00	70.99	359.45	9,994.96	356.10	-197.58	365.51	12.00	12.00	0.00
10,175.00	73.99	359.45	10,002.49	379.93	-197.81	389.33	12.00	12.00	0.00
10,200.00	76.99	359.45	10,008.75	404.13	-198.04	413.51	12.00	12.00	0.00
10,225.00	79.99	359.45	10,013.74	428.63	-198.28	437.98	12.00	12.00	0.00
10,250.00	82.99	359.45	10,017.44	453.35	-198.51	462.69	12.00	12.00	0.00
10,275.00	85.99	359.45	10,019.84	478.23	-198.75	487.55	12.00	12.00	0.00
10,300.00	88.99	359.45	10,020.93	503.20	-198.99	512.50	12.00	12.00	0.00
10,310.93	90.30	359.45	10,021.00	514.12	-199.10	523.42	12.00	12.00	0.00
10,400.00	90.30	359.45	10,020.53	603.19	-199.95	612.42	0.00	0.00	0.00
10,500.00	90.30	359.45	10,020.01	703.19	-200.91	712.34	0.00	0.00	0.00
10,600.00	90.30	359.45	10,019.49	803.18	-201.87	812.25	0.00	0.00	0.00
10,700.00	90.30	359.45	10,018.96	903.17	-202.83	912.17	0.00	0.00	0.00
10,800.00	90.30	359.45	10,018.44	1,003.17	-203.79	1,012.09	0.00	0.00	0.00
10,900.00	90.30	359.45	10,017.92	1,103.16	-204.75	1,112.00	0.00	0.00	0.00
11,000.00	90.30	359.45	10,017.39	1,203.16	-205.71	1,211.92	0.00	0.00	0.00
11,100.00	90.30	359.45	10,016.87	1,303.15	-206.67	1,311.84	0.00	0.00	0.00
11,200.00	90.30	359.45	10,016.35	1,403.14	-207.63	1,411.76	0.00	0.00	0.00
11,300.00	90.30	359.45	10,015.82	1,503.14	-208.59	1,511.67	0.00	0.00	0.00
11,400.00	90.30	359.45	10,015.30	1,603.13	-209.55	1,611.59	0.00	0.00	0.00
11,500.00	90.30	359.45	10,014.77	1,703.13	-210.51	1,711.51	0.00	0.00	0.00
11,600.00	90.30	359.45	10,014.25	1,803.12	-211.47	1,811.43	0.00	0.00	0.00
11,700.00	90.30	359.45	10,013.73	1,903.11	-212.43	1,911.34	0.00	0.00	0.00
11,800.00	90.30	359.45	10,013.20	2,003.11	-213.39	2,011.26	0.00	0.00	0.00
11,900.00	90.30	359.45	10,012.68	2,103.10	-214.35	2,111.18	0.00	0.00	0.00
12,000.00	90.30	359.45	10,012.16	2,203.10	-215.31	2,211.10	0.00	0.00	0.00
12,100.00	90.30	359.45	10,011.63	2,303.09	-216.27	2,311.01	0.00	0.00	0.00
12,200.00	90.30	359.45	10,011.11	2,403.08	-217.23	2,410.93	0.00	0.00	0.00
12,300.00	90.30	359.45	10,010.59	2,503.08	-218.19	2,510.85	0.00	0.00	0.00
12,400.00	90.30	359.45	10,010.06	2,603.07	-219.15	2,610.77	0.00	0.00	0.00
12,500.00	90.30	359.45	10,009.54	2,703.07	-220.11	2,710.68	0.00	0.00	0.00
12,600.00	90.30	359.45	10,009.01	2,803.06	-221.07	2,810.60	0.00	0.00	0.00
12,700.00	90.30	359.45	10,008.49	2,903.06	-222.03	2,910.52	0.00	0.00	0.00
12,800.00	90.30	359.45	10,007.97	3,003.05	-222.99	3,010.43	0.00	0.00	0.00
12,900.00	90.30	359.45	10,007.44	3,103.04	-223.95	3,110.35	0.00	0.00	0.00
13,000.00	90.30	359.45	10,006.92	3,203.04	-224.91	3,210.27	0.00	0.00	0.00
13,100.00	90.30	359.45	10,006.40	3,303.03	-225.87	3,310.19	0.00	0.00	0.00
13,200.00	90.30	359.45	10,005.87	3,403.03	-226.83	3,410.10	0.00	0.00	0.00
13,300.00	90.30	359.45	10,005.35	3,503.02	-227.79	3,510.02	0.00	0.00	0.00

Premier Directional Drilling

Planning Report

Database:	EDM 5000.1 MultiUser DB	Local Co-ordinate Reference:	Well 2H - Slot 2H
Company:	ROADRUNNER OIL & GAS, LLC	TVD Reference:	3439 @ 3439.00usft (est)
Project:	Lea County, NM	MD Reference:	3439 @ 3439.00usft (est)
Site:	Acme Federal 25-33-5 1H - 2H	North Reference:	Grid
Well:	2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,400.00	90.30	359.45	10,004.83	3,603.01	-228.75	3,609.94	0.00	0.00	0.00
13,500.00	90.30	359.45	10,004.30	3,703.01	-229.71	3,709.86	0.00	0.00	0.00
13,600.00	90.30	359.45	10,003.78	3,803.00	-230.67	3,809.77	0.00	0.00	0.00
13,700.00	90.30	359.45	10,003.26	3,903.00	-231.63	3,909.69	0.00	0.00	0.00
13,800.00	90.30	359.45	10,002.73	4,002.99	-232.59	4,009.61	0.00	0.00	0.00
13,900.00	90.30	359.45	10,002.21	4,102.98	-233.55	4,109.53	0.00	0.00	0.00
14,000.00	90.30	359.45	10,001.68	4,202.98	-234.51	4,209.44	0.00	0.00	0.00
14,100.00	90.30	359.45	10,001.16	4,302.97	-235.47	4,309.36	0.00	0.00	0.00
14,200.00	90.30	359.45	10,000.64	4,402.97	-236.43	4,409.28	0.00	0.00	0.00
14,300.00	90.30	359.45	10,000.11	4,502.96	-237.39	4,509.20	0.00	0.00	0.00
14,400.00	90.30	359.45	9,999.59	4,602.95	-238.35	4,609.11	0.00	0.00	0.00
14,500.00	90.30	359.45	9,999.07	4,702.95	-239.31	4,709.03	0.00	0.00	0.00
14,601.05	90.30	359.45	9,998.54	4,803.99	-240.28	4,810.00	0.00	0.00	0.00

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
AF 25-33-5 2H SL - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	420,189.26	772,466.28	32° 9' 10.710 N	103° 35' 11.380 W
AF 25-33-5 2H FTP - plan misses target center by 55.45usft at 9900.00usft MD (9856.72 TVD, 151.23 N, -195.61 E) - Point	0.00	0.00	9,892.04	108.49	-195.94	420,297.76	772,270.34	32° 9' 11.797 N	103° 35' 13.651 W
AF 25-33-5 2H PBHL - plan hits target center - Point	0.00	0.00	9,998.54	4,803.99	-240.28	424,993.25	772,226.00	32° 9' 58.263 N	103° 35' 13.788 W
AF 25-33-5 2H LTP - plan misses target center by 21.06usft at 14500.00usft MD (9999.07 TVD, 4702.95 N, -239.31 E) - Point	0.00	0.00	9,999.00	4,724.01	-239.43	424,913.27	772,226.86	32° 9' 57.472 N	103° 35' 13.784 W
AF 25-33-5 2H LP - plan hits target center - Point	0.00	0.00	10,021.00	514.12	-199.10	420,703.38	772,267.18	32° 9' 15.811 N	103° 35' 13.655 W

Premier Directional Drilling

Anticollision Report

Company:	ROADRUNNER OIL & GAS, LLC	Local Co-ordinate Reference:	Well 2H - Slot 2H
Project:	Lea County, NM	TVD Reference:	3439 @ 3439.00usft (est)
Reference Site:	Acme Federal 25-33-5 1H - 2H	MD Reference:	3439 @ 3439.00usft (est)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral	Database:	EDM 5000.1 MultiUser DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 50.00usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.00 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	11/13/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	14,600.78	Plan #1 (Lateral)	MWD	OWSG MWD - Standard	

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						
Acme Federal 25-33-5 1H - 2H						
1H - Lateral - Plan #4	1,876.87	1,874.82	30.56	17.46	2.333	CC
1H - Lateral - Plan #4	1,900.00	1,897.77	30.64	17.38	2.310	ES, SF
1H - Pilot Hole - Plan #4	1,876.87	1,874.82	30.56	17.46	2.333	CC
1H - Pilot Hole - Plan #4	1,900.00	1,897.77	30.64	17.38	2.310	ES, SF

Offset Design	Acme Federal 25-33-5 1H - 2H - 1H - Lateral - Plan #4										Offset Site Error:	0.00 usft
Survey Program:	O-MWD, 10582-MWD										Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		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)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-90.34	-0.27	-45.29	45.29			
50.00	50.00	50.00	50.00	0.09	0.09	-90.34	-0.27	-45.29	45.29	45.11	0.18	252.531
100.00	100.00	100.00	100.00	0.18	0.18	-90.34	-0.27	-45.29	45.29	44.93	0.36	126.336
150.00	150.00	150.00	150.00	0.36	0.36	-90.34	-0.27	-45.29	45.29	44.57	0.72	63.168
200.00	200.00	200.00	200.00	0.54	0.54	-90.34	-0.27	-45.29	45.29	44.21	1.08	42.112
250.00	250.00	250.00	250.00	0.72	0.72	-90.34	-0.27	-45.29	45.29	43.85	1.43	31.584
300.00	300.00	300.00	300.00	0.90	0.90	-90.34	-0.27	-45.29	45.29	43.50	1.79	25.267
350.00	350.00	350.00	350.00	1.08	1.08	-90.34	-0.27	-45.29	45.29	43.14	2.15	21.056
400.00	400.00	400.00	400.00	1.25	1.25	-90.34	-0.27	-45.29	45.29	42.78	2.51	18.048
450.00	450.00	450.00	450.00	1.43	1.43	-90.34	-0.27	-45.29	45.29	42.42	2.87	15.792
500.00	500.00	500.00	500.00	1.61	1.61	-90.34	-0.27	-45.29	45.29	42.06	3.23	14.037
550.00	550.00	550.00	550.00	1.79	1.79	-90.34	-0.27	-45.29	45.29	41.70	3.58	12.634
600.00	600.00	600.00	600.00	1.97	1.97	-90.34	-0.27	-45.29	45.29	41.34	3.94	11.485
650.00	650.00	650.00	650.00	2.15	2.15	-90.34	-0.27	-45.29	45.29	40.99	4.30	10.528
700.00	700.00	700.00	700.00	2.33	2.33	-90.34	-0.27	-45.29	45.29	40.63	4.66	9.718
750.00	750.00	750.00	750.00	2.51	2.51	-90.34	-0.27	-45.29	45.29	40.27	5.02	9.024
800.00	800.00	800.00	800.00	2.69	2.69	-90.34	-0.27	-45.29	45.29	39.91	5.38	8.422
850.00	850.00	850.00	850.00	2.87	2.87	-90.34	-0.27	-45.29	45.29	39.55	5.74	7.896
900.00	900.00	900.00	900.00	3.05	3.05	-90.34	-0.27	-45.29	45.29	39.19	6.09	7.432
950.00	950.00	950.00	950.00	3.23	3.23	-90.34	-0.27	-45.29	45.29	38.84	6.45	7.019
1,000.00	1,000.00	1,000.00	1,000.00	3.41	3.41	-90.34	-0.27	-45.29	45.29	38.48	6.81	6.649
1,050.00	1,050.00	1,050.00	1,050.00	3.58	3.58	-90.34	-0.27	-45.29	45.29	38.12	7.17	6.317
1,100.00	1,100.00	1,100.00	1,100.00	3.76	3.76	-90.34	-0.27	-45.29	45.29	37.76	7.53	6.016

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

Premier Directional Drilling

Anticollision Report

Company: ROADRUNNER OIL & GAS, LLC
 Project: Lea County, NM
 Reference Site: Acme Federal 25-33-5 1H - 2H
 Site Error: 0.00 usft
 Reference Well: 2H
 Well Error: 0.00 usft
 Reference Wellbore: Lateral
 Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H - Slot 2H
 TVD Reference: 3439 @ 3439.00usft (est)
 MD Reference: 3439 @ 3439.00usft (est)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: EDM 5000.1 MultiUser DB
 Offset TVD Reference: Offset Datum

Offset Design Acme Federal 25-33-5 1H - 2H - 1H - Lateral - Plan #4													Offset Site Error: 0.00 usft
Survey Program: 0-MWD, 10582-MWD													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
1,150.00	1,150.00	1,150.00	1,150.00	3.94	3.94	-90.34	-0.27	-45.29	45.29	37.40	7.89	5.743	
1,200.00	1,200.00	1,200.00	1,200.00	4.12	4.12	-90.34	-0.27	-45.29	45.29	37.04	8.24	5.493	
1,250.00	1,250.00	1,250.00	1,250.00	4.30	4.30	-90.34	-0.27	-45.29	45.29	36.68	8.60	5.264	
1,300.00	1,300.00	1,300.00	1,300.00	4.48	4.48	-45.73	-0.27	-45.29	44.98	36.02	8.96	5.020	
1,350.00	1,349.98	1,349.98	1,349.98	4.66	4.66	-46.97	-0.27	-45.29	44.08	34.76	9.31	4.732	
1,400.00	1,399.93	1,399.93	1,399.93	4.83	4.84	-49.13	-0.27	-45.29	42.62	32.95	9.67	4.408	
1,450.00	1,449.84	1,449.84	1,449.84	5.01	5.02	-52.41	-0.27	-45.29	40.69	30.66	10.02	4.060	
1,500.00	1,499.68	1,499.68	1,499.68	5.19	5.20	-57.08	-0.27	-45.29	38.42	28.04	10.38	3.703	
1,550.00	1,549.49	1,549.49	1,549.49	5.37	5.38	-62.86	-0.27	-45.29	36.23	25.49	10.73	3.374	
1,600.00	1,599.30	1,599.30	1,599.30	5.55	5.55	-69.30	-0.27	-45.29	34.45	23.35	11.10	3.105	
1,650.00	1,649.11	1,649.11	1,649.11	5.73	5.73	-76.34	-0.27	-45.29	33.16	21.70	11.46	2.894	
1,700.00	1,698.92	1,698.92	1,698.92	5.91	5.91	-83.82	-0.27	-45.29	32.40	20.58	11.82	2.741	
1,750.00	1,748.71	1,748.71	1,748.71	6.09	6.09	-82.13	-0.27	-45.29	31.82	19.64	12.18	2.612	
1,800.00	1,798.46	1,798.46	1,798.46	6.28	6.27	-83.13	-0.27	-45.29	31.16	18.62	12.54	2.484	
1,850.00	1,848.15	1,848.15	1,848.15	6.46	6.45	-86.90	-0.27	-45.29	30.65	17.75	12.91	2.375	
1,876.87	1,874.82	1,874.82	1,874.82	6.56	6.54	-90.00	-0.27	-45.29	30.56	17.46	13.10	2.333 CC	
1,900.00	1,897.77	1,897.77	1,897.77	6.64	6.62	-93.20	-0.27	-45.29	30.64	17.38	13.27	2.310 ES, SF	
1,950.00	1,947.29	1,947.29	1,947.29	6.83	6.80	-101.45	-0.27	-45.29	31.52	17.90	13.62	2.314	
2,000.00	1,996.71	1,996.71	1,996.71	7.02	6.98	-110.68	-0.27	-45.29	33.65	19.89	13.96	2.410	
2,050.00	2,046.01	2,046.01	2,046.01	7.21	7.16	-119.83	-0.27	-45.29	37.26	22.97	14.29	2.607	
2,100.00	2,095.17	2,095.17	2,095.17	7.40	7.33	-128.09	-0.27	-45.29	42.42	27.81	14.60	2.904	
2,150.00	2,144.19	2,144.19	2,144.19	7.60	7.51	-135.10	-0.27	-45.29	49.06	34.15	14.91	3.291	
2,200.00	2,193.10	2,193.10	2,193.10	7.80	7.68	-142.15	-0.27	-45.29	56.93	41.71	15.22	3.740	
2,250.00	2,242.00	2,242.00	2,242.00	8.01	7.86	-147.71	-0.27	-45.29	65.51	49.96	15.55	4.213	
2,300.00	2,290.91	2,290.91	2,290.91	8.21	8.03	-151.96	-0.27	-45.29	74.55	58.67	15.88	4.695	
2,350.00	2,339.89	2,339.89	2,339.89	8.42	8.21	-155.25	-0.27	-45.29	83.59	67.35	16.24	5.146	
2,400.00	2,389.00	2,389.00	2,389.00	8.63	8.38	-157.74	-0.27	-45.29	92.25	75.64	16.61	5.553	
2,450.00	2,438.22	2,438.22	2,438.22	8.83	8.56	-159.67	-0.27	-45.29	100.43	83.45	16.98	5.914	
2,500.00	2,487.56	2,487.56	2,487.56	9.03	8.74	-161.20	-0.27	-45.29	108.10	90.74	17.36	6.228	
2,550.00	2,537.00	2,537.00	2,537.00	9.24	8.92	-162.43	-0.27	-45.29	115.21	97.48	17.73	6.498	
2,600.00	2,586.53	2,586.53	2,586.53	9.44	9.09	-163.43	-0.27	-45.29	121.74	103.64	18.10	6.725	
2,650.00	2,636.14	2,636.14	2,636.14	9.63	9.27	-164.24	-0.27	-45.29	127.68	109.20	18.47	6.911	
2,700.00	2,685.84	2,685.84	2,685.84	9.83	9.45	-164.91	-0.27	-45.29	133.01	114.16	18.84	7.058	
2,750.00	2,735.60	2,735.60	2,735.60	10.02	9.63	-165.46	-0.27	-45.29	137.72	118.51	19.21	7.168	
2,800.00	2,785.42	2,785.42	2,785.42	10.21	9.81	-165.90	-0.27	-45.29	141.82	122.24	19.58	7.243	
2,850.00	2,835.29	2,835.29	2,835.29	10.39	9.98	-166.26	-0.27	-45.29	145.29	125.34	19.94	7.285	
2,900.00	2,885.20	2,885.20	2,885.20	10.57	10.16	-166.54	-0.27	-45.29	148.13	127.82	20.30	7.296	
2,950.00	2,935.15	2,935.15	2,935.15	10.75	10.34	-166.74	-0.27	-45.29	150.33	129.67	20.66	7.276	
3,000.00	2,985.13	2,985.13	2,985.13	10.93	10.52	-166.89	-0.27	-45.29	151.90	130.88	21.02	7.228	
3,050.00	3,035.12	3,035.12	3,035.12	11.10	10.70	-166.97	-0.27	-45.29	152.83	131.46	21.37	7.153	
3,100.00	3,085.12	3,085.12	3,085.12	11.27	10.88	103.00	-0.27	-45.29	153.13	130.98	22.14	6.915	
3,150.00	3,135.12	3,135.12	3,135.12	11.44	11.06	103.00	-0.27	-45.29	153.13	130.64	22.49	6.808	
3,200.00	3,185.12	3,185.12	3,185.12	11.61	11.24	103.00	-0.27	-45.29	153.13	130.29	22.84	6.704	
3,250.00	3,235.12	3,235.12	3,235.12	11.78	11.42	103.00	-0.27	-45.29	153.13	129.94	23.19	6.603	
3,300.00	3,285.12	3,285.12	3,285.12	11.95	11.60	103.00	-0.27	-45.29	153.13	129.59	23.54	6.506	
3,350.00	3,335.12	3,335.12	3,335.12	12.12	11.78	103.00	-0.27	-45.29	153.13	129.24	23.89	6.410	
3,400.00	3,385.12	3,385.12	3,385.12	12.29	11.96	103.00	-0.27	-45.29	153.13	128.89	24.24	6.318	
3,450.00	3,435.12	3,435.12	3,435.12	12.46	12.13	103.00	-0.27	-45.29	153.13	128.54	24.59	6.228	
3,500.00	3,485.12	3,485.12	3,485.12	12.63	12.31	103.00	-0.27	-45.29	153.13	128.19	24.94	6.141	
3,550.00	3,535.12	3,535.12	3,535.12	12.80	12.49	103.00	-0.27	-45.29	153.13	127.84	25.29	6.056	
3,600.00	3,585.12	3,585.12	3,585.12	12.97	12.67	103.00	-0.27	-45.29	153.13	127.49	25.64	5.973	
3,650.00	3,635.12	3,635.12	3,635.12	13.14	12.85	103.00	-0.27	-45.29	153.13	127.14	25.99	5.892	

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

Premier Directional Drilling

Anticollision Report

Company:	ROADRUNNER OIL & GAS, LLC	Local Co-ordinate Reference:	Well 2H - Slot 2H
Project:	Lea County, NM	TVD Reference:	3439 @ 3439.00usft (est)
Reference Site:	Acme Federal 25-33-5 1H - 2H	MD Reference:	3439 @ 3439.00usft (est)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral	Database:	EDM 5000.1 MultiUser DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Acme Federal 25-33-5 1H - 2H - 1H - Lateral - Plan #4													Offset Site Error:	0.00 usft
Survey Program: 0-MWD, 10582-MWD													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		
3,700.00	3,685.12	3,685.12	3,685.12	13.31	13.03	103.00	-0.27	-45.29	153.13	126.79	26.34	5.814		
3,750.00	3,735.12	3,735.12	3,735.12	13.49	13.21	103.00	-0.27	-45.29	153.13	126.44	26.69	5.737		
3,800.00	3,785.12	3,785.12	3,785.12	13.66	13.39	103.00	-0.27	-45.29	153.13	126.09	27.04	5.663		
3,850.00	3,835.12	3,835.12	3,835.12	13.83	13.57	103.00	-0.27	-45.29	153.13	125.73	27.39	5.590		
3,900.00	3,885.12	3,885.12	3,885.12	14.00	13.75	103.00	-0.27	-45.29	153.13	125.38	27.74	5.519		
3,950.00	3,935.12	3,935.12	3,935.12	14.18	13.93	103.00	-0.27	-45.29	153.13	125.03	28.10	5.450		
4,000.00	3,985.12	3,985.12	3,985.12	14.35	14.11	103.00	-0.27	-45.29	153.13	124.68	28.45	5.383		
4,050.00	4,035.12	4,035.12	4,035.12	14.52	14.29	103.00	-0.27	-45.29	153.13	124.33	28.80	5.317		
4,100.00	4,085.12	4,085.12	4,085.12	14.69	14.46	103.00	-0.27	-45.29	153.13	123.97	29.15	5.253		
4,150.00	4,135.12	4,135.12	4,135.12	14.87	14.64	103.00	-0.27	-45.29	153.13	123.62	29.51	5.190		
4,200.00	4,185.12	4,185.12	4,185.12	15.04	14.82	103.00	-0.27	-45.29	153.13	123.27	29.86	5.129		
4,250.00	4,235.12	4,235.12	4,235.12	15.22	15.00	103.00	-0.27	-45.29	153.13	122.92	30.21	5.069		
4,300.00	4,285.12	4,285.12	4,285.12	15.39	15.18	103.00	-0.27	-45.29	153.13	122.56	30.56	5.010		
4,350.00	4,335.12	4,335.12	4,335.12	15.56	15.36	103.00	-0.27	-45.29	153.13	122.21	30.92	4.953		
4,400.00	4,385.12	4,385.12	4,385.12	15.74	15.54	103.00	-0.27	-45.29	153.13	121.86	31.27	4.897		
4,450.00	4,435.12	4,435.12	4,435.12	15.91	15.72	103.00	-0.27	-45.29	153.13	121.50	31.62	4.842		
4,500.00	4,485.12	4,485.12	4,485.12	16.08	15.90	103.00	-0.27	-45.29	153.13	121.15	31.98	4.789		
4,550.00	4,535.12	4,535.12	4,535.12	16.26	16.08	103.00	-0.27	-45.29	153.13	120.80	32.33	4.736		
4,600.00	4,585.12	4,585.12	4,585.12	16.43	16.26	103.00	-0.27	-45.29	153.13	120.44	32.68	4.685		
4,650.00	4,635.12	4,635.12	4,635.12	16.61	16.44	103.00	-0.27	-45.29	153.13	120.09	33.04	4.635		
4,700.00	4,685.12	4,685.12	4,685.12	16.78	16.62	103.00	-0.27	-45.29	153.13	119.74	33.39	4.586		
4,750.00	4,735.12	4,735.12	4,735.12	16.96	16.79	103.00	-0.27	-45.29	153.13	119.38	33.74	4.538		
4,800.00	4,785.12	4,785.12	4,785.12	17.13	16.97	103.00	-0.27	-45.29	153.13	119.03	34.10	4.491		
4,850.00	4,835.12	4,835.12	4,835.12	17.31	17.15	103.00	-0.27	-45.29	153.13	118.67	34.45	4.445		
4,900.00	4,885.12	4,885.12	4,885.12	17.48	17.33	103.00	-0.27	-45.29	153.13	118.32	34.81	4.399		
4,950.00	4,935.12	4,935.12	4,935.12	17.66	17.51	103.00	-0.27	-45.29	153.13	117.97	35.16	4.355		
5,000.00	4,985.12	4,985.12	4,985.12	17.83	17.69	103.00	-0.27	-45.29	153.13	117.61	35.52	4.312		
5,050.00	5,035.12	5,035.12	5,035.12	18.01	17.87	103.00	-0.27	-45.29	153.13	117.26	35.87	4.269		
5,100.00	5,085.12	5,085.12	5,085.12	18.18	18.05	103.00	-0.27	-45.29	153.13	116.90	36.22	4.227		
5,150.00	5,135.12	5,135.12	5,135.12	18.36	18.23	103.00	-0.27	-45.29	153.13	116.55	36.58	4.186		
5,200.00	5,185.12	5,185.12	5,185.12	18.53	18.41	103.00	-0.27	-45.29	153.13	116.19	36.93	4.146		
5,250.00	5,235.12	5,235.78	5,235.78	18.71	18.58	103.06	-0.39	-45.40	153.05	115.77	37.28	4.105		
5,300.00	5,285.12	5,286.71	5,286.70	18.88	18.76	103.33	-1.01	-45.93	152.68	115.05	37.63	4.057		
5,350.00	5,335.12	5,337.61	5,337.58	19.06	18.93	103.83	-2.15	-46.90	152.02	114.04	37.98	4.003		
5,400.00	5,385.12	5,388.46	5,388.38	19.24	19.09	104.56	-3.80	-48.31	151.07	112.75	38.32	3.942		
5,450.00	5,435.12	5,439.24	5,439.09	19.41	19.26	105.54	-5.96	-50.15	149.87	111.20	38.66	3.876		
5,500.00	5,485.12	5,489.94	5,489.66	19.59	19.43	106.77	-8.62	-52.44	148.43	109.43	39.00	3.806		
5,550.00	5,535.12	5,540.54	5,540.09	19.76	19.60	108.26	-11.79	-55.15	146.82	107.48	39.34	3.732		
5,600.00	5,585.12	5,590.51	5,589.84	19.94	19.77	109.94	-15.28	-58.13	145.13	105.45	39.68	3.658		
5,650.00	5,635.12	5,640.29	5,639.42	20.11	19.94	111.66	-18.77	-61.11	143.57	103.55	40.01	3.588		
5,700.00	5,685.12	5,690.08	5,688.99	20.29	20.10	113.41	-22.27	-64.10	142.14	101.79	40.35	3.523		
5,750.00	5,735.12	5,739.87	5,738.57	20.47	20.27	115.19	-25.76	-67.08	140.84	100.16	40.68	3.462		
5,800.00	5,785.12	5,789.65	5,788.14	20.64	20.45	117.01	-29.25	-70.07	139.69	98.67	41.02	3.406		
5,850.00	5,835.12	5,839.44	5,837.72	20.82	20.62	118.86	-32.74	-73.05	138.68	97.33	41.35	3.354		
5,900.00	5,885.12	5,889.23	5,887.29	21.00	20.79	120.73	-36.23	-76.04	137.81	96.13	41.69	3.306		
5,950.00	5,935.12	5,939.01	5,936.86	21.17	20.97	122.62	-39.72	-79.03	137.10	95.08	42.02	3.263		
6,000.00	5,985.12	5,988.80	5,986.44	21.35	21.14	124.53	-43.21	-82.01	136.54	94.19	42.35	3.224		
6,050.00	6,035.12	6,038.59	6,036.01	21.53	21.32	126.45	-46.70	-85.00	136.13	93.45	42.68	3.189		
6,100.00	6,085.12	6,088.37	6,085.59	21.70	21.49	128.39	-50.19	-87.98	135.88	92.86	43.02	3.159		
6,150.00	6,135.12	6,138.16	6,135.16	21.88	21.67	130.32	-53.69	-90.97	135.79	92.44	43.35	3.132		
6,155.41	6,140.53	6,143.55	6,140.53	21.90	21.69	130.53	-54.06	-91.29	135.79	92.40	43.39	3.130		
6,200.00	6,185.12	6,187.95	6,184.74	22.05	21.85	132.26	-57.18	-93.95	135.85	92.16	43.68	3.110		

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

Premier Directional Drilling Anticollision Report

Company:	ROADRUNNER OIL & GAS, LLC	Local Co-ordinate Reference:	Well 2H - Slot 2H
Project:	Lea County, NM	TVD Reference:	3439 @ 3439.00usft (est)
Reference Site:	Acme Federal 25-33-5 1H - 2H	MD Reference:	3439 @ 3439.00usft (est)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral	Database:	EDM 5000.1 MultiUser DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Acme Federal 25-33-5 1H - 2H - 1H - Lateral - Plan #4													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD, 10582-MWD													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		
6,250.00	6,235.12	6,237.73	6,234.31	22.23	22.03	134.19	-60.67	-96.94	136.07	92.05	44.02	3.091		
6,300.00	6,285.12	6,287.52	6,283.88	22.41	22.21	136.12	-64.16	-99.92	136.44	92.09	44.35	3.076		
6,350.00	6,335.12	6,337.31	6,333.46	22.58	22.39	138.03	-67.65	-102.91	136.97	92.28	44.69	3.065		
6,400.00	6,385.12	6,387.09	6,383.03	22.76	22.57	139.93	-71.14	-105.89	137.65	92.63	45.02	3.057		
6,450.00	6,435.12	6,436.88	6,432.61	22.94	22.76	141.81	-74.63	-108.88	138.48	93.12	45.36	3.053		
6,500.00	6,485.12	6,486.67	6,482.18	23.11	22.94	143.66	-78.12	-111.86	139.46	93.76	45.70	3.052		
6,550.00	6,535.12	6,536.45	6,531.76	23.29	23.13	145.48	-81.61	-114.85	140.58	94.55	46.04	3.054		
6,600.00	6,585.12	6,586.24	6,581.33	23.47	23.31	147.27	-85.11	-117.83	141.85	95.47	46.38	3.059		
6,650.00	6,635.12	6,636.03	6,630.91	23.65	23.50	149.03	-88.60	-120.82	143.25	96.53	46.72	3.066		
6,700.00	6,685.12	6,685.81	6,680.48	23.82	23.68	150.76	-92.09	-123.80	144.78	97.72	47.06	3.076		
6,750.00	6,735.12	6,735.60	6,730.05	24.00	23.87	152.45	-95.58	-126.79	146.45	99.04	47.41	3.089		
6,800.00	6,785.12	6,785.39	6,779.63	24.18	24.06	154.10	-99.07	-129.77	148.24	100.48	47.76	3.104		
6,850.00	6,835.12	6,835.17	6,829.20	24.35	24.25	155.70	-102.56	-132.76	150.15	102.04	48.11	3.121		
6,900.00	6,885.12	6,884.96	6,878.78	24.53	24.44	157.27	-106.05	-135.74	152.17	103.72	48.46	3.140		
6,950.00	6,935.12	6,934.75	6,928.35	24.71	24.63	158.80	-109.54	-138.73	154.31	105.50	48.81	3.161		
7,000.00	6,985.12	6,984.53	6,977.93	24.88	24.82	160.28	-113.03	-141.71	156.56	107.39	49.17	3.184		
7,050.00	7,035.12	7,034.32	7,027.50	25.06	25.01	161.72	-116.53	-144.70	158.90	109.38	49.52	3.209		
7,100.00	7,085.12	7,084.11	7,077.08	25.24	25.20	163.12	-120.02	-147.68	161.35	111.46	49.88	3.235		
7,150.00	7,135.12	7,133.89	7,126.65	25.42	25.39	164.47	-123.51	-150.67	163.88	113.64	50.24	3.262		
7,200.00	7,185.12	7,183.68	7,176.22	25.59	25.59	165.78	-127.00	-153.66	166.51	115.91	50.60	3.290		
7,250.00	7,235.12	7,233.47	7,225.80	25.77	25.78	167.06	-130.49	-156.64	169.22	118.25	50.97	3.320		
7,300.00	7,285.12	7,283.25	7,275.37	25.95	25.97	168.29	-133.98	-159.63	172.02	120.68	51.33	3.351		
7,350.00	7,335.12	7,333.04	7,324.95	26.13	26.17	169.48	-137.47	-162.61	174.89	123.19	51.70	3.383		
7,400.00	7,385.12	7,382.83	7,374.52	26.30	26.36	170.63	-140.96	-165.60	177.83	125.76	52.07	3.415		
7,450.00	7,435.12	7,432.61	7,424.10	26.48	26.56	171.75	-144.45	-168.58	180.84	128.40	52.44	3.449		
7,500.00	7,485.12	7,482.40	7,473.67	26.66	26.76	172.83	-147.95	-171.57	183.92	131.11	52.81	3.483		
7,550.00	7,535.12	7,532.19	7,523.24	26.84	26.95	173.87	-151.44	-174.55	187.06	133.88	53.18	3.518		
7,600.00	7,585.12	7,581.98	7,572.82	27.01	27.15	174.88	-154.93	-177.54	190.27	136.71	53.55	3.553		
7,650.00	7,635.12	7,631.76	7,622.39	27.19	27.35	175.85	-158.42	-180.52	193.53	139.60	53.93	3.589		
7,700.00	7,685.12	7,682.50	7,672.92	27.37	27.55	176.80	-161.91	-183.51	196.78	142.48	54.30	3.624		
7,750.00	7,735.12	7,734.30	7,724.56	27.55	27.75	177.61	-165.02	-186.16	199.65	144.97	54.68	3.651		
7,800.00	7,785.12	7,786.20	7,776.35	27.72	27.95	178.26	-167.59	-188.37	202.06	147.00	55.06	3.670		
7,850.00	7,835.12	7,838.19	7,828.27	27.90	28.14	178.77	-169.64	-190.12	203.98	148.55	55.43	3.680		
7,900.00	7,885.12	7,890.24	7,880.28	28.08	28.33	179.14	-171.15	-191.41	205.41	149.61	55.80	3.681		
7,950.00	7,935.12	7,942.34	7,932.36	28.26	28.51	179.37	-172.12	-192.24	206.33	150.17	56.16	3.674		
8,000.00	7,985.12	7,994.46	7,984.48	28.43	28.69	179.48	-172.55	-192.61	206.74	150.22	56.53	3.657		
8,050.00	8,035.12	8,045.09	8,035.12	28.61	28.87	179.48	-172.58	-192.63	206.77	149.88	56.88	3.635		
8,100.00	8,085.12	8,095.09	8,085.12	28.79	29.04	179.48	-172.58	-192.63	206.77	149.53	57.23	3.613		
8,150.00	8,135.12	8,145.09	8,135.12	28.97	29.21	179.48	-172.58	-192.63	206.77	149.18	57.59	3.590		
8,200.00	8,185.12	8,195.09	8,185.12	29.14	29.39	179.48	-172.58	-192.63	206.77	148.83	57.94	3.569		
8,250.00	8,235.12	8,245.09	8,235.12	29.32	29.56	179.48	-172.58	-192.63	206.77	148.47	58.29	3.547		
8,300.00	8,285.12	8,295.09	8,285.12	29.50	29.73	179.48	-172.58	-192.63	206.77	148.12	58.64	3.526		
8,350.00	8,335.12	8,345.09	8,335.12	29.68	29.90	179.48	-172.58	-192.63	206.77	147.77	59.00	3.505		
8,400.00	8,385.12	8,395.09	8,385.12	29.86	30.08	179.48	-172.58	-192.63	206.77	147.42	59.35	3.484		
8,450.00	8,435.12	8,445.09	8,435.12	30.03	30.25	179.48	-172.58	-192.63	206.77	147.06	59.70	3.463		
8,500.00	8,485.12	8,495.09	8,485.12	30.21	30.42	179.48	-172.58	-192.63	206.77	146.71	60.06	3.443		
8,550.00	8,535.12	8,545.09	8,535.12	30.39	30.59	179.48	-172.58	-192.63	206.77	146.36	60.41	3.423		
8,600.00	8,585.12	8,595.09	8,585.12	30.57	30.77	179.48	-172.58	-192.63	206.77	146.00	60.76	3.403		
8,650.00	8,635.12	8,645.09	8,635.12	30.74	30.94	179.48	-172.58	-192.63	206.77	145.65	61.11	3.383		
8,700.00	8,685.12	8,695.09	8,685.12	30.92	31.11	179.48	-172.58	-192.63	206.77	145.30	61.47	3.364		
8,750.00	8,735.12	8,745.09	8,735.12	31.10	31.29	179.48	-172.58	-192.63	206.77	144.94	61.82	3.345		
8,800.00	8,785.12	8,795.09	8,785.12	31.28	31.46	179.48	-172.58	-192.63	206.77	144.59	62.17	3.326		

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

Premier Directional Drilling

Anticollision Report

Company: ROADRUNNER OIL & GAS, LLC
 Project: Lea County, NM
 Reference Site: Acme Federal 25-33-5 1H - 2H
 Site Error: 0.00 usft
 Reference Well: 2H
 Well Error: 0.00 usft
 Reference Wellbore: Lateral
 Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H - Slot 2H
 TVD Reference: 3439 @ 3439.00usft (est)
 MD Reference: 3439 @ 3439.00usft (est)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: EDM 5000.1 MultiUser DB
 Offset TVD Reference: Offset Datum

Offset Design Acme Federal 25-33-5 1H - 2H - 1H - Lateral - Plan #4													Offset Site Error: 0.00 usft
Survey Program: 0-MWD, 10582-MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Distance		Minimum Separation		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	
8.850.00	8.835.12	8.845.09	8.835.12	31.46	31.63	179.48	-172.58	-192.63	206.77	144.24	62.53	3.307	
8.900.00	8.885.12	8.895.09	8.885.12	31.63	31.81	179.48	-172.58	-192.63	206.77	143.88	62.88	3.288	
8.950.00	8.935.12	8.945.09	8.935.12	31.81	31.98	179.48	-172.58	-192.63	206.77	143.53	63.23	3.270	
9.000.00	8.985.12	8.995.09	8.985.12	31.99	32.15	179.48	-172.58	-192.63	206.77	143.18	63.59	3.252	
9.050.00	9.035.12	9.045.09	9.035.12	32.17	32.33	179.48	-172.58	-192.63	206.77	142.82	63.94	3.234	
9.100.00	9.085.12	9.095.09	9.085.12	32.35	32.50	179.48	-172.58	-192.63	206.77	142.47	64.30	3.216	
9.150.00	9.135.12	9.145.09	9.135.12	32.52	32.67	179.48	-172.58	-192.63	206.77	142.12	64.65	3.198	
9.200.00	9.185.12	9.195.09	9.185.12	32.70	32.85	179.48	-172.58	-192.63	206.77	141.76	65.00	3.181	
9.250.00	9.235.12	9.245.09	9.235.12	32.88	33.02	179.48	-172.58	-192.63	206.77	141.41	65.36	3.164	
9.300.00	9.285.12	9.295.09	9.285.12	33.06	33.20	179.48	-172.58	-192.63	206.77	141.06	65.71	3.147	
9.350.00	9.335.12	9.345.09	9.335.12	33.24	33.37	179.48	-172.58	-192.63	206.77	140.70	66.06	3.130	
9.400.00	9.385.12	9.395.09	9.385.12	33.41	33.54	179.48	-172.58	-192.63	206.77	140.35	66.42	3.113	
9.450.00	9.435.12	9.445.09	9.435.12	33.59	33.72	179.48	-172.58	-192.63	206.77	139.99	66.77	3.097	
9.500.00	9.485.12	9.495.09	9.485.12	33.77	33.89	179.48	-172.58	-192.63	206.77	139.64	67.13	3.080	
9.550.00	9.535.12	9.545.09	9.535.12	33.95	34.07	179.48	-172.58	-192.63	206.77	139.29	67.48	3.064	
9.600.00	9.585.06	9.595.04	9.585.06	34.12	34.24	-179.97	-172.58	-192.63	208.57	140.74	67.83	3.075	
9.650.00	9.634.56	9.644.53	9.634.56	34.30	34.41	-179.97	-172.58	-192.63	215.52	148.09	67.43	3.196	
9.700.00	9.683.05	9.693.03	9.683.05	34.46	34.58	-179.97	-172.58	-192.63	227.60	161.10	66.50	3.423	
9.750.00	9.730.02	9.740.00	9.730.02	34.62	34.75	-179.97	-172.58	-192.63	244.68	179.63	65.05	3.761	
9.800.00	9.774.94	9.784.92	9.774.94	34.77	34.90	-179.97	-172.58	-192.63	266.58	203.46	63.13	4.223	
9.850.00	9.817.33	9.827.31	9.817.33	34.91	35.05	-179.97	-172.58	-192.63	293.06	232.28	60.78	4.822	
9.900.00	9.856.72	9.866.70	9.856.72	35.05	35.19	-179.97	-172.58	-192.63	323.82	265.77	58.06	5.578	
9.950.00	9.892.67	9.902.65	9.892.67	35.18	35.31	-179.97	-172.58	-192.63	358.53	303.48	55.05	6.512	
10.000.00	9.924.81	9.934.78	9.924.81	35.33	35.43	-179.97	-172.58	-192.63	396.81	344.94	51.87	7.649	
10.050.00	9.952.76	9.962.74	9.952.76	35.49	35.52	-179.97	-172.58	-192.63	438.24	389.59	48.65	9.008	
10.100.00	9.976.23	9.986.21	9.976.23	35.66	35.61	-179.97	-172.58	-192.63	482.36	436.82	45.54	10.591	
10.150.00	9.994.96	10.004.94	9.994.96	35.84	35.87	-179.96	-172.58	-192.63	528.69	485.95	42.75	12.368	
10.200.00	10.008.75	10.018.73	10.008.75	36.02	35.72	-179.95	-172.58	-192.63	576.73	536.26	40.47	14.250	
10.250.00	10.017.44	10.027.42	10.017.44	36.20	35.75	-179.91	-172.58	-192.63	625.95	587.01	38.94	16.077	
10.300.00	10.020.93	10.030.91	10.020.93	36.39	35.76	-179.41	-172.58	-192.63	675.80	637.50	38.30	17.645	
10.350.00	10.020.80	10.030.77	10.020.80	36.59	35.76	-1.84	-172.58	-192.63	725.80	687.32	38.48	18.862	
10.400.00	10.020.53	10.030.51	10.020.53	36.80	35.76	-1.72	-172.58	-192.63	775.80	737.26	38.54	20.129	
10.450.00	10.020.27	10.030.25	10.020.27	37.03	35.76	-1.62	-172.58	-192.63	825.80	787.18	38.62	21.383	
10.500.00	10.020.01	10.029.99	10.020.01	37.27	35.76	-1.52	-172.58	-192.63	875.80	837.10	38.70	22.631	
10.550.00	10.019.75	10.029.73	10.019.75	37.55	35.76	-1.44	-172.58	-192.63	925.80	887.01	38.79	23.865	
10.600.00	10.019.49	10.029.47	10.019.49	37.82	35.76	-1.37	-172.58	-192.63	975.80	936.91	38.89	25.092	

Premier Directional Drilling

Anticollision Report

Company: ROADRUNNER OIL & GAS, LLC
 Project: Lea County, NM
 Reference Site: Acme Federal 25-33-5 1H - 2H
 Site Error: 0.00 usft
 Reference Well: 2H
 Well Error: 0.00 usft
 Reference Wellbore: Lateral
 Reference Design: Plan #1

Local Co-ordinate Reference: Well 2H - Slot 2H
 TVD Reference: 3439 @ 3439.00usft (est)
 MD Reference: 3439 @ 3439.00usft (est)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: EDM 5000.1 MultiUser DB
 Offset TVD Reference: Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Acme Federal 25-33-5 1H - 2H - 1H - Pilot Hole - Plan #4												Offset Well Error:	0.00 usft
Survey Program: 0-MWD													
Reference		Offset		Semi Major Axis		Distance		Minimum		Separation		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	-90.34	-0.27	-45.29	45.29				
50.00	50.00	50.00	50.00	0.09	0.09	-90.34	-0.27	-45.29	45.29	45.11	0.18	252.531	
100.00	100.00	100.00	100.00	0.18	0.18	-90.34	-0.27	-45.29	45.29	44.93	0.36	126.336	
150.00	150.00	150.00	150.00	0.36	0.36	-90.34	-0.27	-45.29	45.29	44.57	0.72	63.168	
200.00	200.00	200.00	200.00	0.54	0.54	-90.34	-0.27	-45.29	45.29	44.21	1.08	42.112	
250.00	250.00	250.00	250.00	0.72	0.72	-90.34	-0.27	-45.29	45.29	43.85	1.43	31.584	
300.00	300.00	300.00	300.00	0.90	0.90	-90.34	-0.27	-45.29	45.29	43.50	1.79	25.267	
350.00	350.00	350.00	350.00	1.08	1.08	-90.34	-0.27	-45.29	45.29	43.14	2.15	21.056	
400.00	400.00	400.00	400.00	1.25	1.25	-90.34	-0.27	-45.29	45.29	42.78	2.51	18.048	
450.00	450.00	450.00	450.00	1.43	1.43	-90.34	-0.27	-45.29	45.29	42.42	2.87	15.792	
500.00	500.00	500.00	500.00	1.61	1.61	-90.34	-0.27	-45.29	45.29	42.06	3.23	14.037	
550.00	550.00	550.00	550.00	1.79	1.79	-90.34	-0.27	-45.29	45.29	41.70	3.58	12.634	
600.00	600.00	600.00	600.00	1.97	1.97	-90.34	-0.27	-45.29	45.29	41.34	3.94	11.485	
650.00	650.00	650.00	650.00	2.15	2.15	-90.34	-0.27	-45.29	45.29	40.99	4.30	10.528	
700.00	700.00	700.00	700.00	2.33	2.33	-90.34	-0.27	-45.29	45.29	40.63	4.66	9.718	
750.00	750.00	750.00	750.00	2.51	2.51	-90.34	-0.27	-45.29	45.29	40.27	5.02	9.024	
800.00	800.00	800.00	800.00	2.69	2.69	-90.34	-0.27	-45.29	45.29	39.91	5.38	8.422	
850.00	850.00	850.00	850.00	2.87	2.87	-90.34	-0.27	-45.29	45.29	39.55	5.74	7.896	
900.00	900.00	900.00	900.00	3.05	3.05	-90.34	-0.27	-45.29	45.29	39.19	6.09	7.432	
950.00	950.00	950.00	950.00	3.23	3.23	-90.34	-0.27	-45.29	45.29	38.84	6.45	7.019	
1,000.00	1,000.00	1,000.00	1,000.00	3.41	3.41	-90.34	-0.27	-45.29	45.29	38.48	6.81	6.649	
1,050.00	1,050.00	1,050.00	1,050.00	3.58	3.58	-90.34	-0.27	-45.29	45.29	38.12	7.17	6.317	
1,100.00	1,100.00	1,100.00	1,100.00	3.76	3.76	-90.34	-0.27	-45.29	45.29	37.76	7.53	6.016	
1,150.00	1,150.00	1,150.00	1,150.00	3.94	3.94	-90.34	-0.27	-45.29	45.29	37.40	7.89	5.743	
1,200.00	1,200.00	1,200.00	1,200.00	4.12	4.12	-90.34	-0.27	-45.29	45.29	37.04	8.24	5.493	
1,250.00	1,250.00	1,250.00	1,250.00	4.30	4.30	-90.34	-0.27	-45.29	45.29	36.68	8.60	5.264	
1,300.00	1,300.00	1,300.00	1,300.00	4.48	4.48	-45.73	-0.27	-45.29	44.98	36.02	8.96	5.020	
1,350.00	1,349.98	1,349.98	1,349.98	4.66	4.66	-46.97	-0.27	-45.29	44.08	34.76	9.31	4.732	
1,400.00	1,399.93	1,399.93	1,399.93	4.83	4.84	-49.13	-0.27	-45.29	42.62	32.95	9.67	4.408	
1,450.00	1,449.84	1,449.84	1,449.84	5.01	5.02	-52.41	-0.27	-45.29	40.69	30.66	10.02	4.060	
1,500.00	1,499.68	1,499.68	1,499.68	5.19	5.20	-57.08	-0.27	-45.29	38.42	28.04	10.38	3.703	
1,550.00	1,549.49	1,549.49	1,549.49	5.37	5.38	-62.86	-0.27	-45.29	36.23	25.49	10.73	3.374	
1,600.00	1,599.30	1,599.30	1,599.30	5.55	5.55	-69.30	-0.27	-45.29	34.45	23.35	11.10	3.105	
1,650.00	1,649.11	1,649.11	1,649.11	5.73	5.73	-76.34	-0.27	-45.29	33.16	21.70	11.46	2.894	
1,700.00	1,698.92	1,698.92	1,698.92	5.91	5.91	-83.82	-0.27	-45.29	32.40	20.58	11.82	2.741	
1,750.00	1,748.71	1,748.71	1,748.71	6.09	6.09	-82.13	-0.27	-45.29	31.82	19.84	12.18	2.612	
1,800.00	1,798.46	1,798.46	1,798.46	6.28	6.27	-83.13	-0.27	-45.29	31.16	18.62	12.54	2.484	
1,850.00	1,848.15	1,848.15	1,848.15	6.46	6.45	-86.90	-0.27	-45.29	30.65	17.75	12.91	2.375	
1,876.87	1,874.82	1,874.82	1,874.82	6.56	6.54	-90.00	-0.27	-45.29	30.56	17.46	13.10	2.333 CC	
1,900.00	1,897.77	1,897.77	1,897.77	6.64	6.62	-93.20	-0.27	-45.29	30.64	17.38	13.27	2.310 ES, SF	
1,950.00	1,947.29	1,947.29	1,947.29	6.83	6.80	-101.45	-0.27	-45.29	31.52	17.90	13.62	2.314	
2,000.00	1,996.71	1,996.71	1,996.71	7.02	6.98	-110.68	-0.27	-45.29	33.65	19.69	13.96	2.410	
2,050.00	2,046.01	2,046.01	2,046.01	7.21	7.16	-119.83	-0.27	-45.29	37.26	22.97	14.29	2.607	
2,100.00	2,095.17	2,095.17	2,095.17	7.40	7.33	-128.09	-0.27	-45.29	42.42	27.81	14.60	2.904	
2,150.00	2,144.19	2,144.19	2,144.19	7.60	7.51	-135.10	-0.27	-45.29	49.06	34.15	14.91	3.291	
2,200.00	2,193.10	2,193.10	2,193.10	7.80	7.68	-142.15	-0.27	-45.29	56.93	41.71	15.22	3.740	
2,250.00	2,242.00	2,242.00	2,242.00	8.01	7.86	-147.71	-0.27	-45.29	65.51	49.96	15.55	4.213	
2,300.00	2,290.91	2,290.91	2,290.91	8.21	8.03	-151.96	-0.27	-45.29	74.55	58.67	15.88	4.695	
2,350.00	2,339.89	2,339.89	2,339.89	8.42	8.21	-155.25	-0.27	-45.29	83.59	67.35	16.24	5.146	
2,400.00	2,389.00	2,389.00	2,389.00	8.63	8.38	-157.74	-0.27	-45.29	92.25	75.64	16.61	5.553	
2,450.00	2,438.22	2,438.22	2,438.22	8.83	8.56	-159.67	-0.27	-45.29	100.43	83.45	16.98	5.914	
2,500.00	2,487.56	2,487.56	2,487.56	9.03	8.74	-161.20	-0.27	-45.29	108.10	90.74	17.36	6.228	

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

Premier Directional Drilling

Anticollision Report

Company:	ROADRUNNER OIL & GAS, LLC	Local Co-ordinate Reference:	Well 2H - Slot 2H
Project:	Lea County, NM	TVD Reference:	3439 @ 3439.00usft (est)
Reference Site:	Acme Federal 25-33-5 1H - 2H	MD Reference:	3439 @ 3439.00usft (est)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral	Database:	EDM 5000.1 MultiUser DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
2,550.00	2,537.00	2,537.00	2,537.00	9.24	8.92	-162.43	-0.27	-45.29	115.21	97.48	17.73	6.498		
2,600.00	2,586.53	2,586.53	2,586.53	9.44	9.09	-163.43	-0.27	-45.29	121.74	103.64	18.10	6.725		
2,650.00	2,636.14	2,636.14	2,636.14	9.63	9.27	-164.24	-0.27	-45.29	127.68	109.20	18.47	6.911		
2,700.00	2,685.84	2,685.84	2,685.84	9.83	9.45	-164.91	-0.27	-45.29	133.01	114.16	18.84	7.058		
2,750.00	2,735.60	2,735.60	2,735.60	10.02	9.63	-165.46	-0.27	-45.29	137.72	118.51	19.21	7.168		
2,800.00	2,785.42	2,785.42	2,785.42	10.21	9.81	-165.90	-0.27	-45.29	141.82	122.24	19.58	7.243		
2,850.00	2,835.29	2,835.29	2,835.29	10.39	9.98	-166.26	-0.27	-45.29	145.29	125.34	19.94	7.285		
2,900.00	2,885.20	2,885.20	2,885.20	10.57	10.16	-166.54	-0.27	-45.29	148.13	127.82	20.30	7.296		
2,950.00	2,935.15	2,935.15	2,935.15	10.75	10.34	-166.74	-0.27	-45.29	150.33	129.67	20.66	7.276		
3,000.00	2,985.13	2,985.13	2,985.13	10.93	10.52	-166.89	-0.27	-45.29	151.90	130.88	21.02	7.228		
3,050.00	3,035.12	3,035.12	3,035.12	11.10	10.70	-166.97	-0.27	-45.29	152.83	131.46	21.37	7.153		
3,100.00	3,085.12	3,085.12	3,085.12	11.27	10.88	103.00	-0.27	-45.29	153.13	130.98	22.14	6.915		
3,150.00	3,135.12	3,135.12	3,135.12	11.44	11.06	103.00	-0.27	-45.29	153.13	130.64	22.49	6.808		
3,200.00	3,185.12	3,185.12	3,185.12	11.61	11.24	103.00	-0.27	-45.29	153.13	130.29	22.84	6.704		
3,250.00	3,235.12	3,235.12	3,235.12	11.78	11.42	103.00	-0.27	-45.29	153.13	129.94	23.19	6.603		
3,300.00	3,285.12	3,285.12	3,285.12	11.95	11.60	103.00	-0.27	-45.29	153.13	129.59	23.54	6.506		
3,350.00	3,335.12	3,335.12	3,335.12	12.12	11.78	103.00	-0.27	-45.29	153.13	129.24	23.89	6.410		
3,400.00	3,385.12	3,385.12	3,385.12	12.29	11.96	103.00	-0.27	-45.29	153.13	128.89	24.24	6.318		
3,450.00	3,435.12	3,435.12	3,435.12	12.46	12.13	103.00	-0.27	-45.29	153.13	128.54	24.59	6.228		
3,500.00	3,485.12	3,485.12	3,485.12	12.63	12.31	103.00	-0.27	-45.29	153.13	128.19	24.94	6.141		
3,550.00	3,535.12	3,535.12	3,535.12	12.80	12.49	103.00	-0.27	-45.29	153.13	127.84	25.29	6.056		
3,600.00	3,585.12	3,585.12	3,585.12	12.97	12.67	103.00	-0.27	-45.29	153.13	127.49	25.64	5.973		
3,650.00	3,635.12	3,635.12	3,635.12	13.14	12.85	103.00	-0.27	-45.29	153.13	127.14	25.99	5.892		
3,700.00	3,685.12	3,685.12	3,685.12	13.31	13.03	103.00	-0.27	-45.29	153.13	126.79	26.34	5.814		
3,750.00	3,735.12	3,735.12	3,735.12	13.49	13.21	103.00	-0.27	-45.29	153.13	126.44	26.69	5.737		
3,800.00	3,785.12	3,785.12	3,785.12	13.66	13.39	103.00	-0.27	-45.29	153.13	126.09	27.04	5.663		
3,850.00	3,835.12	3,835.12	3,835.12	13.83	13.57	103.00	-0.27	-45.29	153.13	125.73	27.39	5.590		
3,900.00	3,885.12	3,885.12	3,885.12	14.00	13.75	103.00	-0.27	-45.29	153.13	125.38	27.74	5.519		
3,950.00	3,935.12	3,935.12	3,935.12	14.18	13.93	103.00	-0.27	-45.29	153.13	125.03	28.10	5.450		
4,000.00	3,985.12	3,985.12	3,985.12	14.35	14.11	103.00	-0.27	-45.29	153.13	124.68	28.45	5.383		
4,050.00	4,035.12	4,035.12	4,035.12	14.52	14.29	103.00	-0.27	-45.29	153.13	124.33	28.80	5.317		
4,100.00	4,085.12	4,085.12	4,085.12	14.69	14.46	103.00	-0.27	-45.29	153.13	123.97	29.15	5.253		
4,150.00	4,135.12	4,135.12	4,135.12	14.87	14.64	103.00	-0.27	-45.29	153.13	123.62	29.51	5.190		
4,200.00	4,185.12	4,185.12	4,185.12	15.04	14.82	103.00	-0.27	-45.29	153.13	123.27	29.86	5.129		
4,250.00	4,235.12	4,235.12	4,235.12	15.22	15.00	103.00	-0.27	-45.29	153.13	122.92	30.21	5.069		
4,300.00	4,285.12	4,285.12	4,285.12	15.39	15.18	103.00	-0.27	-45.29	153.13	122.56	30.56	5.010		
4,350.00	4,335.12	4,335.12	4,335.12	15.56	15.36	103.00	-0.27	-45.29	153.13	122.21	30.92	4.953		
4,400.00	4,385.12	4,385.12	4,385.12	15.74	15.54	103.00	-0.27	-45.29	153.13	121.86	31.27	4.897		
4,450.00	4,435.12	4,435.12	4,435.12	15.91	15.72	103.00	-0.27	-45.29	153.13	121.50	31.62	4.842		
4,500.00	4,485.12	4,485.12	4,485.12	16.08	15.90	103.00	-0.27	-45.29	153.13	121.15	31.98	4.789		
4,550.00	4,535.12	4,535.12	4,535.12	16.26	16.08	103.00	-0.27	-45.29	153.13	120.80	32.33	4.736		
4,600.00	4,585.12	4,585.12	4,585.12	16.43	16.26	103.00	-0.27	-45.29	153.13	120.44	32.68	4.685		
4,650.00	4,635.12	4,635.12	4,635.12	16.61	16.44	103.00	-0.27	-45.29	153.13	120.09	33.04	4.635		
4,700.00	4,685.12	4,685.12	4,685.12	16.78	16.62	103.00	-0.27	-45.29	153.13	119.74	33.39	4.586		
4,750.00	4,735.12	4,735.12	4,735.12	16.96	16.79	103.00	-0.27	-45.29	153.13	119.38	33.74	4.538		
4,800.00	4,785.12	4,785.12	4,785.12	17.13	16.97	103.00	-0.27	-45.29	153.13	119.03	34.10	4.491		
4,850.00	4,835.12	4,835.12	4,835.12	17.31	17.15	103.00	-0.27	-45.29	153.13	118.67	34.45	4.445		
4,900.00	4,885.12	4,885.12	4,885.12	17.48	17.33	103.00	-0.27	-45.29	153.13	118.32	34.81	4.399		
4,950.00	4,935.12	4,935.12	4,935.12	17.66	17.51	103.00	-0.27	-45.29	153.13	117.97	35.16	4.355		
5,000.00	4,985.12	4,985.12	4,985.12	17.83	17.69	103.00	-0.27	-45.29	153.13	117.61	35.52	4.312		
5,050.00	5,035.12	5,035.12	5,035.12	18.01	17.87	103.00	-0.27	-45.29	153.13	117.26	35.87	4.269		
5,100.00	5,085.12	5,085.12	5,085.12	18.18	18.05	103.00	-0.27	-45.29	153.13	116.90	36.22	4.227		

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

Premier Directional Drilling

Anticollision Report

Company:	ROADRUNNER OIL & GAS, LLC	Local Co-ordinate Reference:	Well 2H - Slot 2H
Project:	Lea County, NM	TVD Reference:	3439 @ 3439.00usft (est)
Reference Site:	Acme Federal 25-33-5 1H - 2H	MD Reference:	3439 @ 3439.00usft (est)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral	Database:	EDM 5000.1 MultiUser DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Acme Federal 25-33-5 1H - 2H - 1H - Pilot Hole - Plan #4													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)					
5,150.00	5,135.12	5,135.12	5,135.12	18.36	18.23	103.00	-0.27	-45.29	153.13	116.55	36.58	4.186			
5,200.00	5,185.12	5,185.12	5,185.12	18.53	18.41	103.00	-0.27	-45.29	153.13	116.19	36.93	4.146			
5,250.00	5,235.12	5,235.78	5,235.78	18.71	18.58	103.06	-0.39	-45.40	153.05	115.77	37.28	4.105			
5,300.00	5,285.12	5,286.71	5,286.70	18.88	18.76	103.33	-1.01	-45.93	152.68	115.05	37.63	4.057			
5,350.00	5,335.12	5,337.61	5,337.58	19.06	18.93	103.83	-2.15	-46.90	152.02	114.04	37.98	4.003			
5,400.00	5,385.12	5,388.46	5,388.38	19.24	19.09	104.56	-3.80	-48.31	151.07	112.75	38.32	3.942			
5,450.00	5,435.12	5,439.24	5,439.09	19.41	19.26	105.54	-5.96	-50.15	149.87	111.20	38.66	3.876			
5,500.00	5,485.12	5,489.94	5,489.66	19.59	19.43	106.77	-8.62	-52.44	148.43	109.43	39.00	3.806			
5,550.00	5,535.12	5,540.54	5,540.09	19.76	19.60	108.26	-11.79	-55.15	146.82	107.48	39.34	3.732			
5,600.00	5,585.12	5,590.51	5,589.84	19.94	19.77	109.94	-15.28	-58.13	145.13	105.45	39.68	3.658			
5,650.00	5,635.12	5,640.29	5,639.42	20.11	19.94	111.66	-18.77	-61.11	143.57	103.55	40.01	3.588			
5,700.00	5,685.12	5,690.08	5,688.99	20.29	20.10	113.41	-22.27	-64.10	142.14	101.79	40.35	3.523			
5,750.00	5,735.12	5,739.87	5,738.57	20.47	20.27	115.19	-25.76	-67.08	140.84	100.16	40.68	3.462			
5,800.00	5,785.12	5,789.65	5,788.14	20.64	20.45	117.01	-29.25	-70.07	139.69	98.67	41.02	3.406			
5,850.00	5,835.12	5,839.44	5,837.72	20.82	20.62	118.86	-32.74	-73.05	138.68	97.33	41.35	3.354			
5,900.00	5,885.12	5,889.23	5,887.29	21.00	20.79	120.73	-36.23	-76.04	137.81	96.13	41.69	3.306			
5,950.00	5,935.12	5,939.01	5,936.86	21.17	20.97	122.62	-39.72	-79.03	137.10	95.08	42.02	3.263			
6,000.00	5,985.12	5,988.80	5,986.44	21.35	21.14	124.53	-43.21	-82.01	136.54	94.19	42.35	3.224			
6,050.00	6,035.12	6,038.59	6,036.01	21.53	21.32	126.45	-46.70	-85.00	136.13	93.45	42.68	3.189			
6,100.00	6,085.12	6,088.37	6,085.59	21.70	21.49	128.39	-50.19	-87.98	135.88	92.86	43.02	3.159			
6,150.00	6,135.12	6,138.16	6,135.16	21.88	21.67	130.32	-53.69	-90.97	135.79	92.44	43.35	3.132			
6,155.41	6,140.53	6,143.55	6,140.53	21.90	21.69	130.53	-54.06	-91.29	135.79	92.40	43.39	3.130			
6,200.00	6,185.12	6,187.95	6,184.74	22.05	21.85	132.26	-57.18	-93.95	135.85	92.16	43.68	3.110			
6,250.00	6,235.12	6,237.73	6,234.31	22.23	22.03	134.19	-60.67	-96.94	136.07	92.05	44.02	3.091			
6,300.00	6,285.12	6,287.52	6,283.88	22.41	22.21	136.12	-64.16	-99.92	136.44	92.09	44.35	3.076			
6,350.00	6,335.12	6,337.31	6,333.46	22.58	22.39	138.03	-67.65	-102.91	136.97	92.28	44.69	3.065			
6,400.00	6,385.12	6,387.09	6,383.03	22.76	22.57	139.93	-71.14	-105.89	137.65	92.63	45.02	3.057			
6,450.00	6,435.12	6,436.88	6,432.61	22.94	22.76	141.81	-74.63	-108.88	138.48	93.12	45.36	3.053			
6,500.00	6,485.12	6,486.67	6,482.18	23.11	22.94	143.66	-78.12	-111.86	139.46	93.76	45.70	3.052			
6,550.00	6,535.12	6,536.45	6,531.76	23.29	23.13	145.48	-81.61	-114.85	140.58	94.55	46.04	3.054			
6,600.00	6,585.12	6,586.24	6,581.33	23.47	23.31	147.27	-85.11	-117.83	141.85	95.47	46.38	3.059			
6,650.00	6,635.12	6,636.03	6,630.91	23.65	23.50	149.03	-88.60	-120.82	143.25	96.53	46.72	3.066			
6,700.00	6,685.12	6,685.81	6,680.48	23.82	23.68	150.76	-92.09	-123.80	144.78	97.72	47.06	3.076			
6,750.00	6,735.12	6,735.60	6,730.05	24.00	23.87	152.45	-95.58	-126.79	146.45	99.04	47.41	3.089			
6,800.00	6,785.12	6,785.39	6,779.63	24.18	24.06	154.10	-99.07	-129.77	148.24	100.48	47.76	3.104			
6,850.00	6,835.12	6,835.17	6,829.20	24.35	24.25	155.70	-102.56	-132.76	150.15	102.04	48.11	3.121			
6,900.00	6,885.12	6,884.96	6,878.78	24.53	24.44	157.27	-106.05	-135.74	152.17	103.72	48.46	3.140			
6,950.00	6,935.12	6,934.75	6,928.35	24.71	24.63	158.80	-109.54	-138.73	154.31	105.50	48.81	3.161			
7,000.00	6,985.12	6,984.53	6,977.93	24.88	24.82	160.28	-113.03	-141.71	156.56	107.39	49.17	3.184			
7,050.00	7,035.12	7,034.32	7,027.50	25.06	25.01	161.72	-116.53	-144.70	158.90	109.38	49.52	3.209			
7,100.00	7,085.12	7,084.11	7,077.08	25.24	25.20	163.12	-120.02	-147.68	161.35	111.46	49.88	3.235			
7,150.00	7,135.12	7,133.89	7,126.65	25.42	25.39	164.47	-123.51	-150.67	163.88	113.64	50.24	3.262			
7,200.00	7,185.12	7,183.68	7,176.22	25.59	25.59	165.78	-127.00	-153.66	166.51	115.91	50.60	3.290			
7,250.00	7,235.12	7,233.47	7,225.80	25.77	25.78	167.06	-130.49	-156.64	169.22	118.25	50.97	3.320			
7,300.00	7,285.12	7,283.25	7,275.37	25.95	25.97	168.29	-133.98	-159.63	172.02	120.68	51.33	3.351			
7,350.00	7,335.12	7,333.04	7,324.95	26.13	26.17	169.48	-137.47	-162.61	174.89	123.19	51.70	3.383			
7,400.00	7,385.12	7,382.83	7,374.52	26.30	26.36	170.63	-140.96	-165.60	177.83	125.76	52.07	3.415			
7,450.00	7,435.12	7,432.61	7,424.10	26.48	26.56	171.75	-144.45	-168.58	180.84	128.40	52.44	3.449			
7,500.00	7,485.12	7,482.40	7,473.67	26.66	26.76	172.83	-147.95	-171.57	183.92	131.11	52.81	3.483			
7,550.00	7,535.12	7,532.19	7,523.24	26.84	26.95	173.87	-151.44	-174.55	187.06	133.88	53.18	3.518			
7,600.00	7,585.12	7,581.98	7,572.82	27.01	27.15	174.88	-154.93	-177.54	190.27	136.71	53.55	3.553			
7,650.00	7,635.12	7,631.76	7,622.39	27.19	27.35	175.85	-158.42	-180.52	193.53	139.60	53.93	3.589			

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

Premier Directional Drilling

Anticollision Report

Company:	ROADRUNNER OIL & GAS, LLC	Local Co-ordinate Reference:	Well 2H - Slot 2H
Project:	Lea County, NM	TVD Reference:	3439 @ 3439.00usft (est)
Reference Site:	Acme Federal 25-33-5 1H - 2H	MD Reference:	3439 @ 3439.00usft (est)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral	Database:	EDM 5000.1 MultiUser DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Acme Federal 25-33-5 1H - 2H - 1H - Pilot Hole - Plan #4													Offset Site Error:	0.00 usft
Survey Program: O-MWD													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		
7,700.00	7,685.12	7,682.50	7,672.92	27.37	27.55	176.80	-161.91	-183.51	196.78	142.48	54.30	3.624		
7,750.00	7,735.12	7,734.30	7,724.56	27.55	27.75	177.61	-165.02	-186.16	199.65	144.97	54.68	3.651		
7,800.00	7,785.12	7,786.20	7,776.35	27.72	27.95	178.26	-167.59	-188.37	202.06	147.00	55.06	3.670		
7,850.00	7,835.12	7,838.19	7,828.27	27.90	28.14	178.77	-169.64	-190.12	203.98	148.55	55.43	3.680		
7,900.00	7,885.12	7,890.24	7,880.28	28.08	28.33	179.14	-171.15	-191.41	205.41	149.61	55.80	3.681		
7,950.00	7,935.12	7,942.34	7,932.36	28.25	28.51	179.37	-172.12	-192.24	206.33	150.17	56.16	3.674		
8,000.00	7,985.12	7,994.46	7,984.48	28.43	28.69	179.48	-172.55	-192.61	206.74	150.22	56.53	3.657		
8,050.00	8,035.12	8,045.09	8,035.12	28.61	28.87	179.48	-172.58	-192.63	206.77	149.88	56.88	3.635		
8,100.00	8,085.12	8,095.09	8,085.12	28.79	29.04	179.48	-172.58	-192.63	206.77	149.53	57.23	3.613		
8,150.00	8,135.12	8,145.09	8,135.12	28.97	29.21	179.48	-172.58	-192.63	206.77	149.18	57.59	3.590		
8,200.00	8,185.12	8,195.09	8,185.12	29.14	29.39	179.48	-172.58	-192.63	206.77	148.83	57.94	3.569		
8,250.00	8,235.12	8,245.09	8,235.12	29.32	29.56	179.48	-172.58	-192.63	206.77	148.47	58.29	3.547		
8,300.00	8,285.12	8,295.09	8,285.12	29.50	29.73	179.48	-172.58	-192.63	206.77	148.12	58.64	3.526		
8,350.00	8,335.12	8,345.09	8,335.12	29.68	29.90	179.48	-172.58	-192.63	206.77	147.77	59.00	3.505		
8,400.00	8,385.12	8,395.09	8,385.12	29.86	30.08	179.48	-172.58	-192.63	206.77	147.42	59.35	3.484		
8,450.00	8,435.12	8,445.09	8,435.12	30.03	30.25	179.48	-172.58	-192.63	206.77	147.06	59.70	3.463		
8,500.00	8,485.12	8,495.09	8,485.12	30.21	30.42	179.48	-172.58	-192.63	206.77	146.71	60.06	3.443		
8,550.00	8,535.12	8,545.09	8,535.12	30.39	30.59	179.48	-172.58	-192.63	206.77	146.36	60.41	3.423		
8,600.00	8,585.12	8,595.09	8,585.12	30.57	30.77	179.48	-172.58	-192.63	206.77	146.00	60.76	3.403		
8,650.00	8,635.12	8,645.09	8,635.12	30.74	30.94	179.48	-172.58	-192.63	206.77	145.65	61.11	3.383		
8,700.00	8,685.12	8,695.09	8,685.12	30.92	31.11	179.48	-172.58	-192.63	206.77	145.30	61.47	3.364		
8,750.00	8,735.12	8,745.09	8,735.12	31.10	31.29	179.48	-172.58	-192.63	206.77	144.94	61.82	3.345		
8,800.00	8,785.12	8,795.09	8,785.12	31.28	31.46	179.48	-172.58	-192.63	206.77	144.59	62.17	3.326		
8,850.00	8,835.12	8,845.09	8,835.12	31.46	31.63	179.48	-172.58	-192.63	206.77	144.24	62.53	3.307		
8,900.00	8,885.12	8,895.09	8,885.12	31.63	31.81	179.48	-172.58	-192.63	206.77	143.88	62.88	3.288		
8,950.00	8,935.12	8,945.09	8,935.12	31.81	31.98	179.48	-172.58	-192.63	206.77	143.53	63.23	3.270		
9,000.00	8,985.12	8,995.09	8,985.12	31.99	32.15	179.48	-172.58	-192.63	206.77	143.18	63.59	3.252		
9,050.00	9,035.12	9,045.09	9,035.12	32.17	32.33	179.48	-172.58	-192.63	206.77	142.82	63.94	3.234		
9,100.00	9,085.12	9,095.09	9,085.12	32.35	32.50	179.48	-172.58	-192.63	206.77	142.47	64.30	3.216		
9,150.00	9,135.12	9,145.09	9,135.12	32.52	32.67	179.48	-172.58	-192.63	206.77	142.12	64.65	3.198		
9,200.00	9,185.12	9,195.09	9,185.12	32.70	32.85	179.48	-172.58	-192.63	206.77	141.76	65.00	3.181		
9,250.00	9,235.12	9,245.09	9,235.12	32.88	33.02	179.48	-172.58	-192.63	206.77	141.41	65.36	3.164		
9,300.00	9,285.12	9,295.09	9,285.12	33.06	33.20	179.48	-172.58	-192.63	206.77	141.06	65.71	3.147		
9,350.00	9,335.12	9,345.09	9,335.12	33.24	33.37	179.48	-172.58	-192.63	206.77	140.70	66.06	3.130		
9,400.00	9,385.12	9,395.09	9,385.12	33.41	33.54	179.48	-172.58	-192.63	206.77	140.35	66.42	3.113		
9,450.00	9,435.12	9,445.09	9,435.12	33.59	33.72	179.48	-172.58	-192.63	206.77	139.99	66.77	3.097		
9,500.00	9,485.12	9,495.09	9,485.12	33.77	33.89	179.48	-172.58	-192.63	206.77	139.64	67.13	3.080		
9,550.00	9,535.12	9,545.09	9,535.12	33.95	34.07	179.48	-172.58	-192.63	206.77	139.29	67.48	3.064		
9,600.00	9,585.06	9,595.04	9,585.06	34.12	34.24	-179.97	-172.58	-192.63	208.57	140.74	67.83	3.075		
9,650.00	9,634.56	9,644.53	9,634.56	34.30	34.41	-179.97	-172.58	-192.63	215.52	148.09	67.43	3.196		
9,700.00	9,683.05	9,693.03	9,683.05	34.46	34.58	-179.97	-172.58	-192.63	227.60	161.10	66.50	3.423		
9,750.00	9,730.02	9,740.00	9,730.02	34.62	34.75	-179.97	-172.58	-192.63	244.68	179.63	65.05	3.761		
9,800.00	9,774.94	9,784.92	9,774.94	34.77	34.90	-179.97	-172.58	-192.63	266.58	203.46	63.13	4.223		
9,850.00	9,817.33	9,827.31	9,817.33	34.91	35.05	-179.97	-172.58	-192.63	293.06	232.28	60.78	4.822		
9,900.00	9,856.72	9,866.70	9,856.72	35.05	35.19	-179.97	-172.58	-192.63	323.82	265.77	58.06	5.578		
9,950.00	9,892.67	9,902.65	9,892.67	35.18	35.31	-179.97	-172.58	-192.63	358.53	303.48	55.05	6.512		
10,000.00	9,924.81	9,934.78	9,924.81	35.33	35.43	-179.97	-172.58	-192.63	396.81	344.94	51.87	7.649		
10,050.00	9,952.76	9,962.74	9,952.76	35.49	35.52	-179.97	-172.58	-192.63	438.24	389.59	48.65	9.008		
10,100.00	9,976.23	9,986.21	9,976.23	35.66	35.61	-179.97	-172.58	-192.63	482.36	436.82	45.54	10.591		
10,150.00	9,994.96	10,004.94	9,994.96	35.84	35.67	-179.96	-172.58	-192.63	528.69	485.95	42.75	12.368		
10,200.00	10,008.75	10,018.73	10,008.75	36.02	35.72	-179.95	-172.58	-192.63	576.73	536.26	40.47	14.250		
10,250.00	10,017.44	10,027.42	10,017.44	36.20	35.75	-179.91	-172.58	-192.63	625.95	587.01	38.94	16.077		

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

Premier Directional Drilling

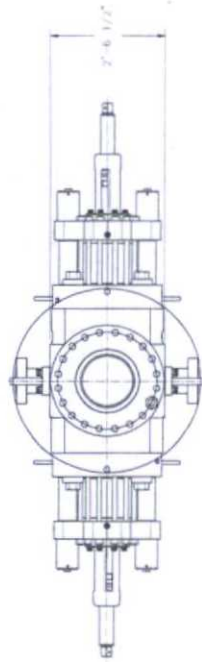
Anticollision Report

Company:	ROADRUNNER OIL & GAS, LLC	Local Co-ordinate Reference:	Well 2H - Slot 2H
Project:	Lea County, NM	TVD Reference:	3439 @ 3439.00usft (est)
Reference Site:	Acme Federal 25-33-5 1H - 2H	MD Reference:	3439 @ 3439.00usft (est)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	2H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Lateral	Database:	EDM 5000.1 MultiUser DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

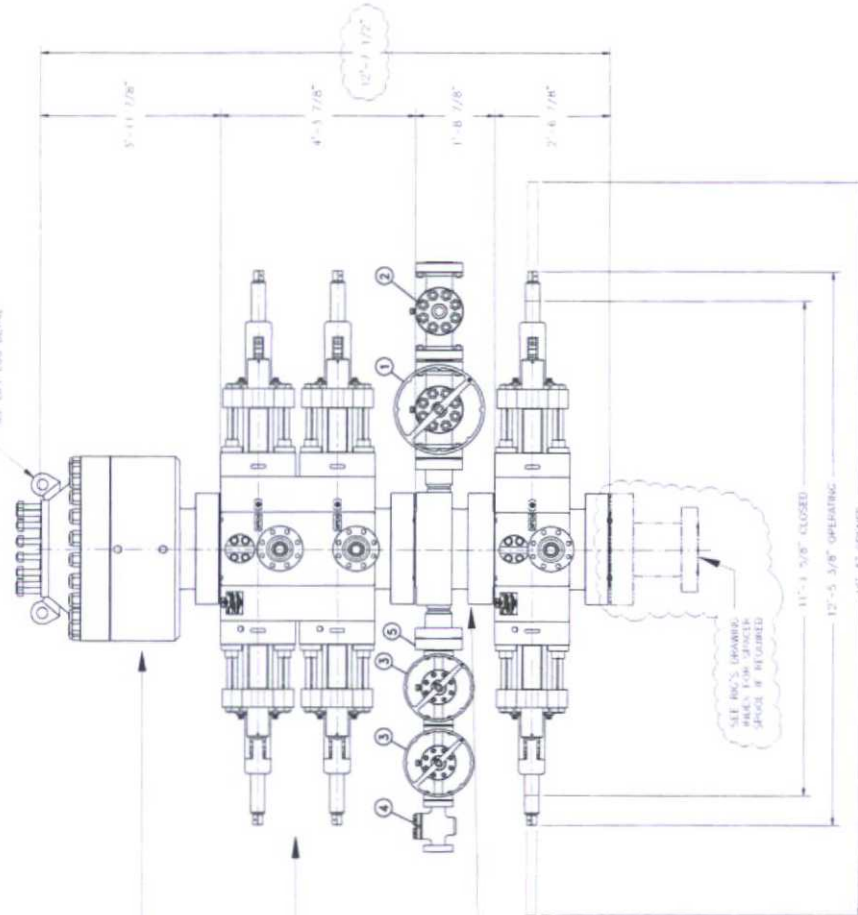
Offset Design Acme Federal 25-33-5 1H - 2H - 1H - Pilot Hole - Plan #4												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical 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	
10,300.00	10,020.93	10,030.91	10,020.93	36.39	35.76	-179.41	-172.58	-192.63	675.80	637.50	38.30	17.645	
10,350.00	10,020.80	10,030.77	10,020.80	36.59	35.76	-1.84	-172.58	-192.63	725.80	687.32	38.48	18.862	
10,400.00	10,020.53	10,030.51	10,020.53	36.80	35.76	-1.72	-172.58	-192.63	775.80	737.26	38.54	20.129	
10,450.00	10,020.27	10,030.25	10,020.27	37.03	35.76	-1.62	-172.58	-192.63	825.80	787.18	38.62	21.383	
10,500.00	10,020.01	10,029.99	10,020.01	37.27	35.76	-1.52	-172.58	-192.63	875.80	837.10	38.70	22.631	
10,550.00	10,019.75	10,029.73	10,019.75	37.55	35.76	-1.44	-172.58	-192.63	925.80	887.01	38.79	23.865	
10,600.00	10,019.49	10,029.47	10,019.49	37.82	35.76	-1.37	-172.58	-192.63	975.80	936.91	38.89	25.092	

LEGEND

- ① 4 1/16"-10M FLANGED END VALVE WITH DOUBLE ACTING HYDRAULIC ACTUATOR
- ② 4 1/16"-10M FLANGED END VALVE WITH DOUBLE ACTING HYDRAULIC ACTUATOR
- ③ 2 1/16"-10M FLANGED END VALVE WITH DOUBLE ACTING HYDRAULIC ACTUATOR
- ④ 2 1/16"-10M FLANGED END CHECK VALVE
- ⑤ DOUBLE STAGED ADAPTER



SEE LEFT SIDE DETAIL



ADAPTER BLOCKED - DOUBLE STAGED ADAPTER PREVENTS LIFT TANK FROM BOTTOM FLANGE - 5M. STUCKED TOP - (LIFT TANK) - 14.250 LBS. WITH SPACER AND LIFT TANK. (WEIGHT APPROXIMATELY 6000 LBS.)

CAMERON 10M DOUBLE RAM-TYPE HYDRAULIC (LIFT TANK) MOVED - 13 5/8"-10M RAM-TYPE, WITH DOUBLE ACTING HYDRAULIC ACTUATOR AND CAMERON 10M DOUBLE STAGED ADAPTER. (WEIGHT APPROXIMATELY 6000 LBS.)

13 5/8"-10M RAM-TYPE CAMERON DRILLING - (LIFT TANK) MOVED - 13 5/8"-10M RAM-TYPE, WITH DOUBLE ACTING HYDRAULIC ACTUATOR AND CAMERON 10M DOUBLE STAGED ADAPTER. (WEIGHT APPROXIMATELY 6000 LBS.)

CAMERON 10M DOUBLE RAM-TYPE HYDRAULIC (LIFT TANK) MOVED - 13 5/8"-10M RAM-TYPE, WITH DOUBLE ACTING HYDRAULIC ACTUATOR AND CAMERON 10M DOUBLE STAGED ADAPTER. (WEIGHT APPROXIMATELY 6000 LBS.)

ANY GA. MODIFIED CAMERON CHECK AND 10M RAM-TYPE VALVE ASSEMBLY ARE NOT SHOWN FOR CLARITY.

WEIGHTS DO NOT INCLUDE HOSES, ADAPTER SPOOLS OR QUICK CONNECT FITTINGS.

ISSUED FOR FABRICATION
January 04-2012
DRAFTSMAN
ENGINEER

HELMEIRICH & PAYNE
INTERNATIONAL DRILLING CO.

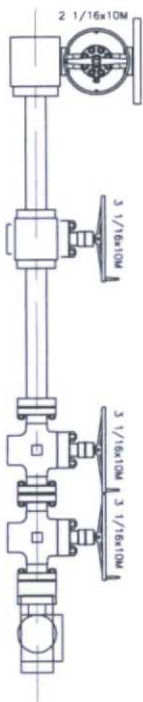
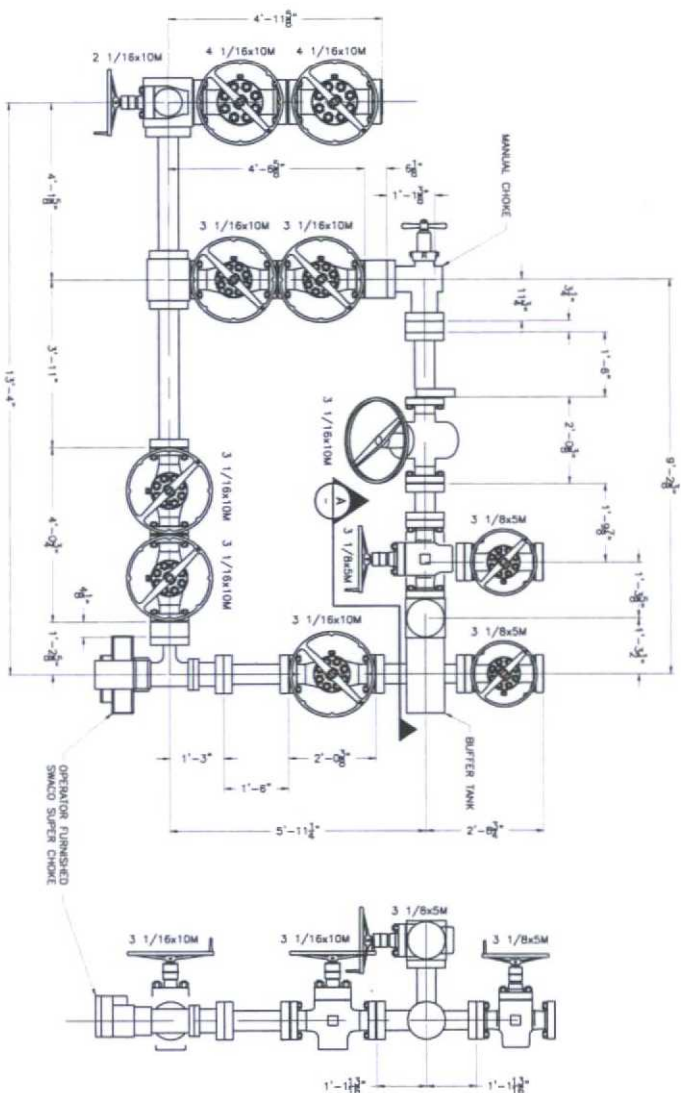
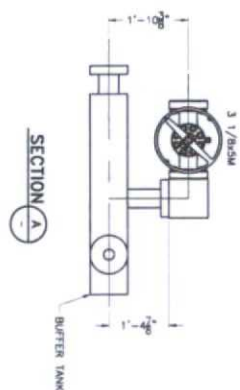
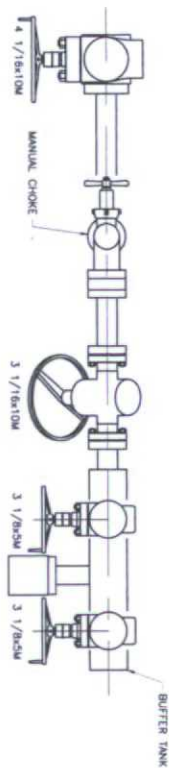
13 5/8"-10M BOP 3 RAM STACK
FLEXRIG3

REV	DATE	DESCRIPTION	BY
1	12/18/07	ADDED SHEET 03	AM
2	4-10-07	REVISIONS TO DOUBLE STAGED ADAPTER	AM
3	4-24-07	ADDED TO SPINER ADAPTER SPOOL	AM
4	10-07-07	ADDED ADAPTER SPOOL	MM
5	1-4-11	REVISED NOTE & ADDED SHEETS 4 & 5	MM

PROPRIETARY

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CUSTOMER: H&P	PROJECT: FLEXRIG3	DATE: 6-5-02	SHEET: 1 OF 5
DRIVER: MTS	SCALE: 3/4"=1'	DATE: 6-5-02	210-P1-07
REV: F			

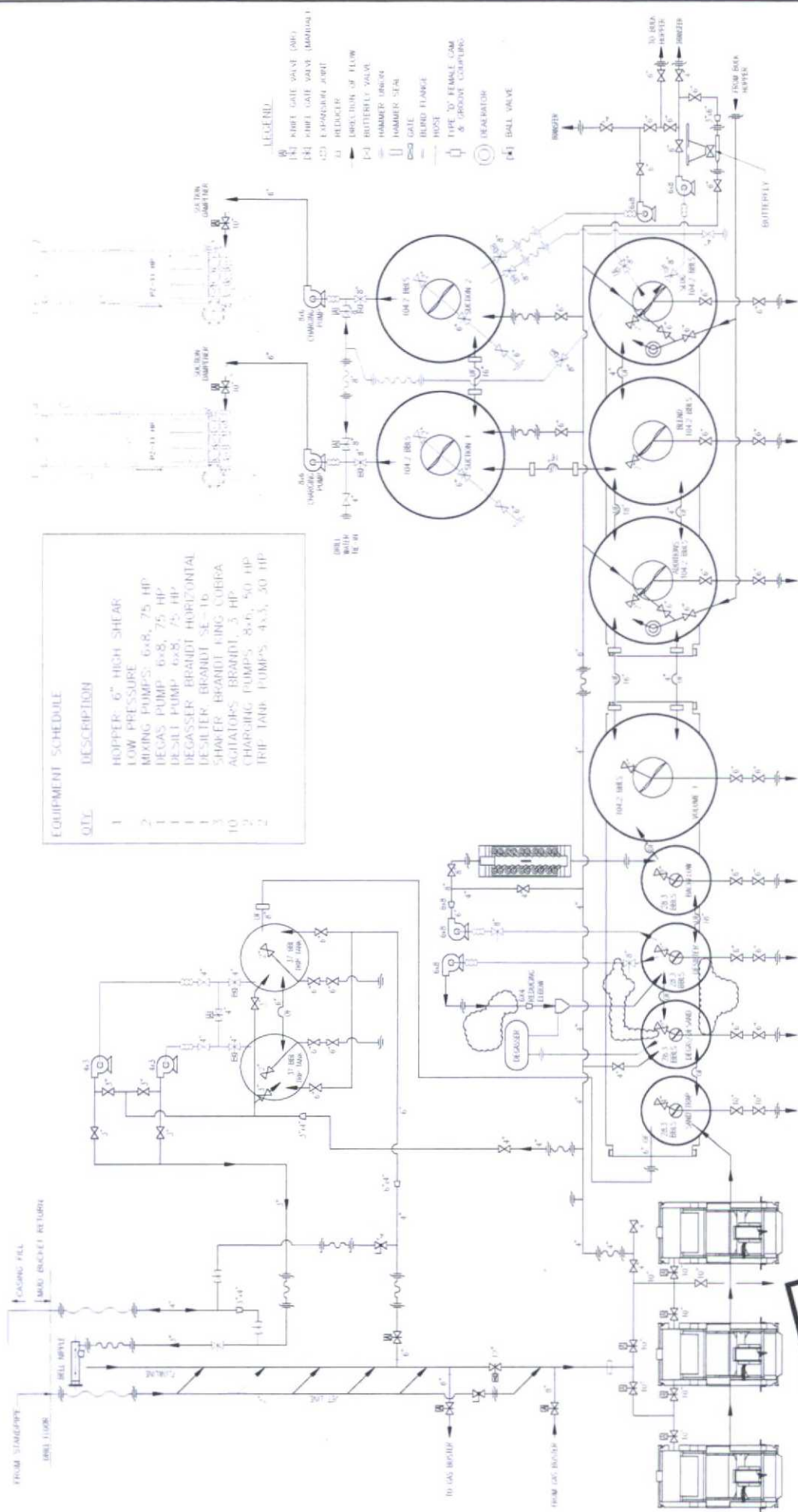


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REV	DATE	DESCRIPTION	BY	DATE	DESCRIPTION
1	10/15/02	ADJUST DIM TO FIELD CONDITIONS DIM	AW		
2					
3					
4					
5					

HELMERICH & PAYNE INTERNATIONAL DRILLING CO.	
PROJECT: FLEXNCS	DATE: 2-28-02
DRAWN: MTS	SHEET: 1 OF 1
SCALE: 3/4"=1'	216-P1-05
REV: A	



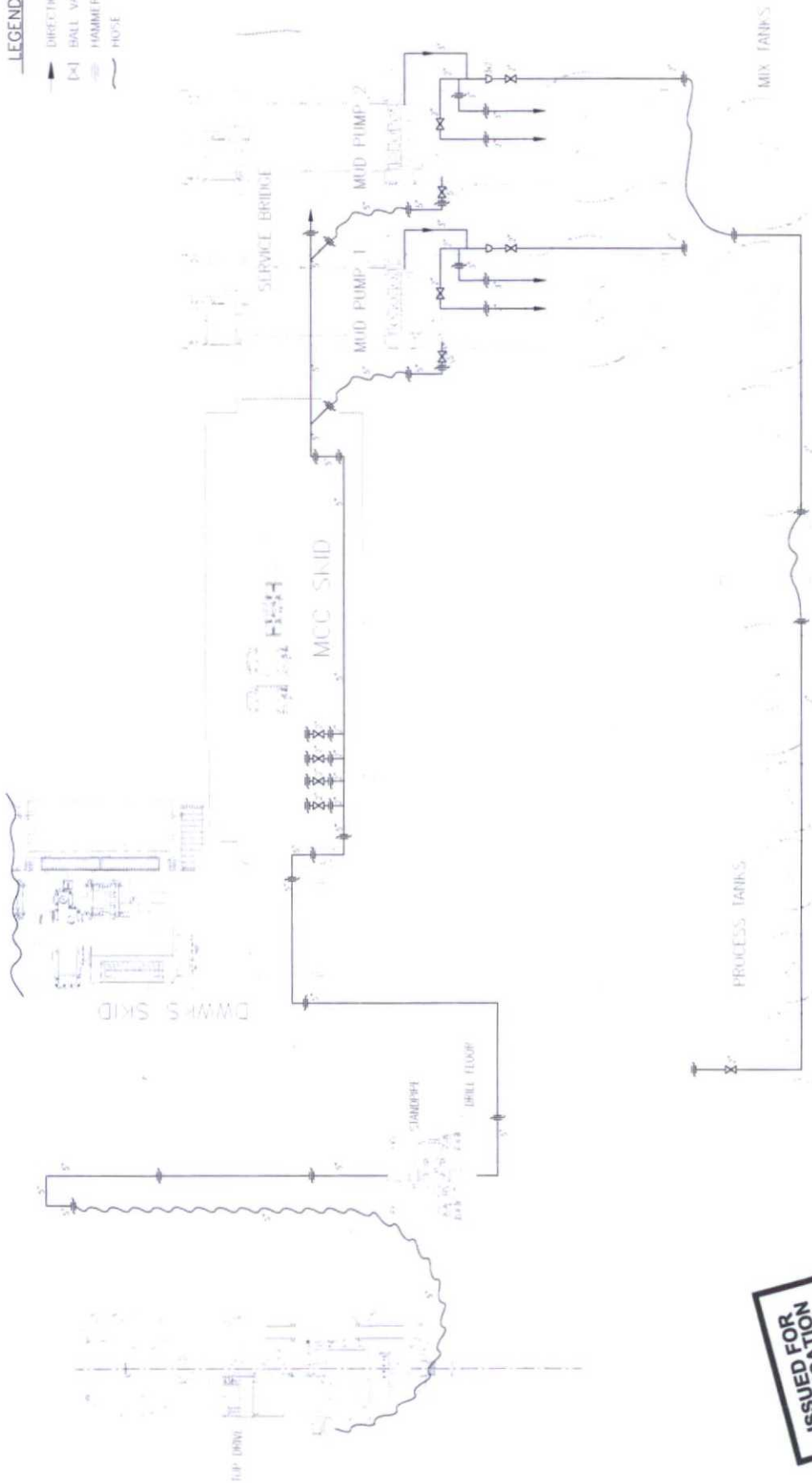
	HELMERT & PAYNE INTERNATIONAL DRILLING CO.	
	TITLE	F3 LOW PRESSURE 738.8BL MUD SYSTEM SCHEMATIC
CUSTOMER	H&P	PROJECT: F3aRq-3
DRAWN: MRL	DATE: 05-10-03	DWG. NO.: 210-P4-34
SCALE: 1/4"=1'	SHEET: 1 of 2	REV: M

ENGINEERING APPROVAL		DATE
AA	5-07-12	JBG
AA	12/15/11	UPDATED SCHEMATIC
AA	02-06-09	CORRECTED 180° TANK PIPING FLOW
AA	05-06-09	DECT WIRE TO 3" BLUE WIRE TAP, WASTE CANCEL
AA	7/6/12	UPDATED SCHEMATIC
AA	05-07-12	UPDARED FLOWLINE, ADDED 24" VALVE BELOW LEGEND
REV	DATE	DESCRIPTION
JBG		

ACTIVE CAPACITY	
PROCESS	113.2 BBS
VOLUME	104.2 BBS
ADDITIONS	104.2 BBS
BLENDING	104.2 BBS
SUBTOTAL (2)	208.4 BBS
SLUG	104.2 BBS
TOTAL	758.4 BBS

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July-06-2012
DRAFTSMAN
ENGINEER

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PROCESS TANKS

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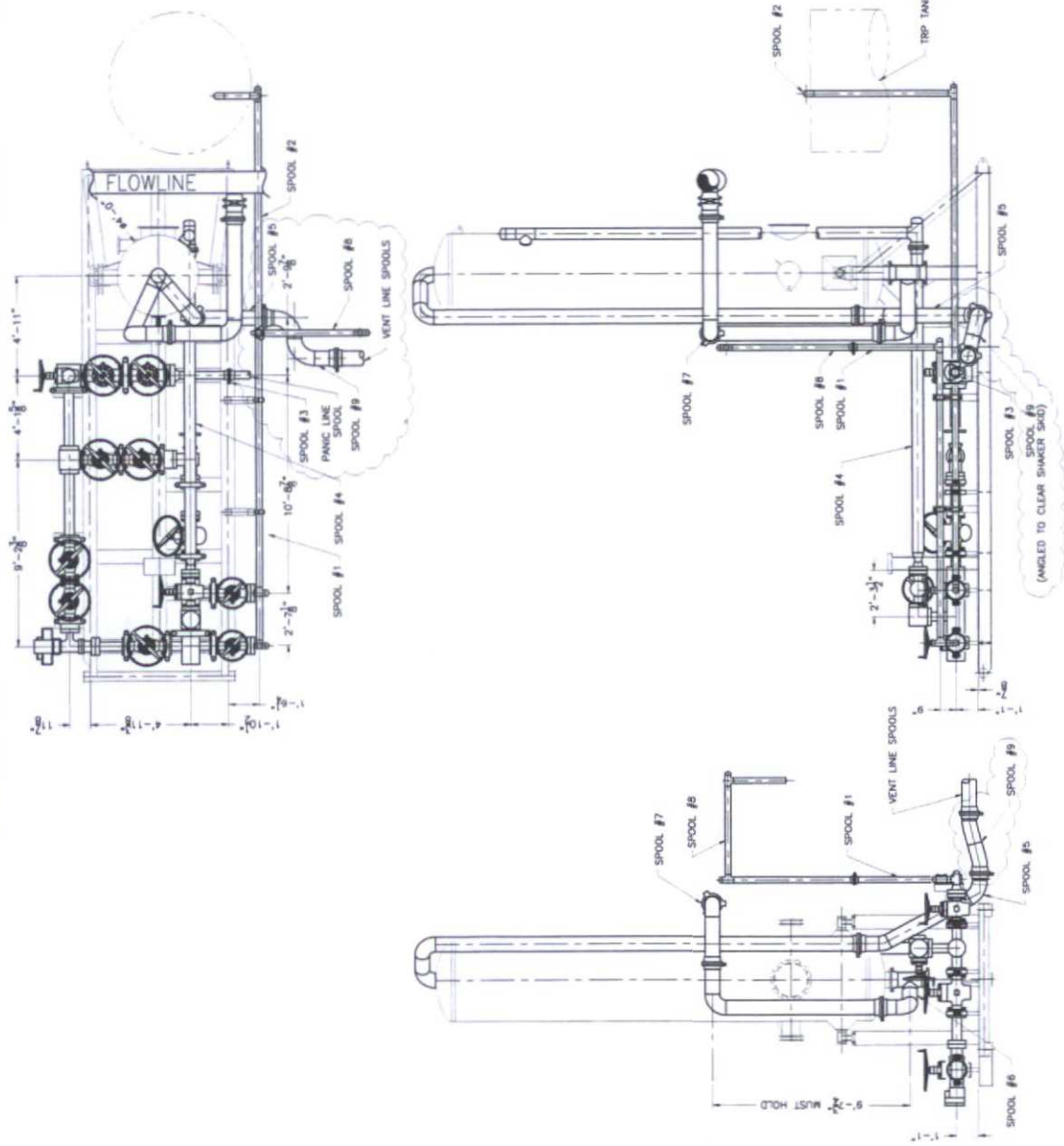
HIGH PRESSURE MUD SYSTEM SCHEMATIC

CUSTOMER	H&P
PROJECT	FlexRig3
DATE	05-08-02
SCALE	NTS
SHEET	1 OF 1
REV	A

REV	DATE	DESCRIPTION
1		ADDED SYSTEM WORKING PRESSURE
2		
3		
4		

NOTE:
1) SYSTEM WORKING PRESSURE 5000 PSI

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March-11-2009
DRAFTSMAN
ENGINEER

HELMERICH & PAYNE
INTERNATIONAL DRILLING CO.

TITLE: GAS BUSTER PIPING
CUSTOMER: H&P
PROJECT: FLEXRIG3

DATE: 01-30-03
DRAWN: MTS
SCALE: 3/8"=1'
SHEET: 1 OF 2
REV: F

ENGINEERING APPROVAL	DATE	DESCRIPTION
ADDED SPOOL #9	8/13/06	ADDED SPOOL #9
ADDED VENT LINE SPOOLS CALLOUT	08/04/06	ADDED VENT LINE SPOOLS CALLOUT
UPDATED SPOOL #2	09-28-06	UPDATED SPOOL #2
REMOVED SPOOLS 5, 6 & 7	05/16/06	REMOVED SPOOLS 5, 6 & 7
ADDED SPOOL #8	3/11/09	ADDED SPOOL #8
DATE		
REV		

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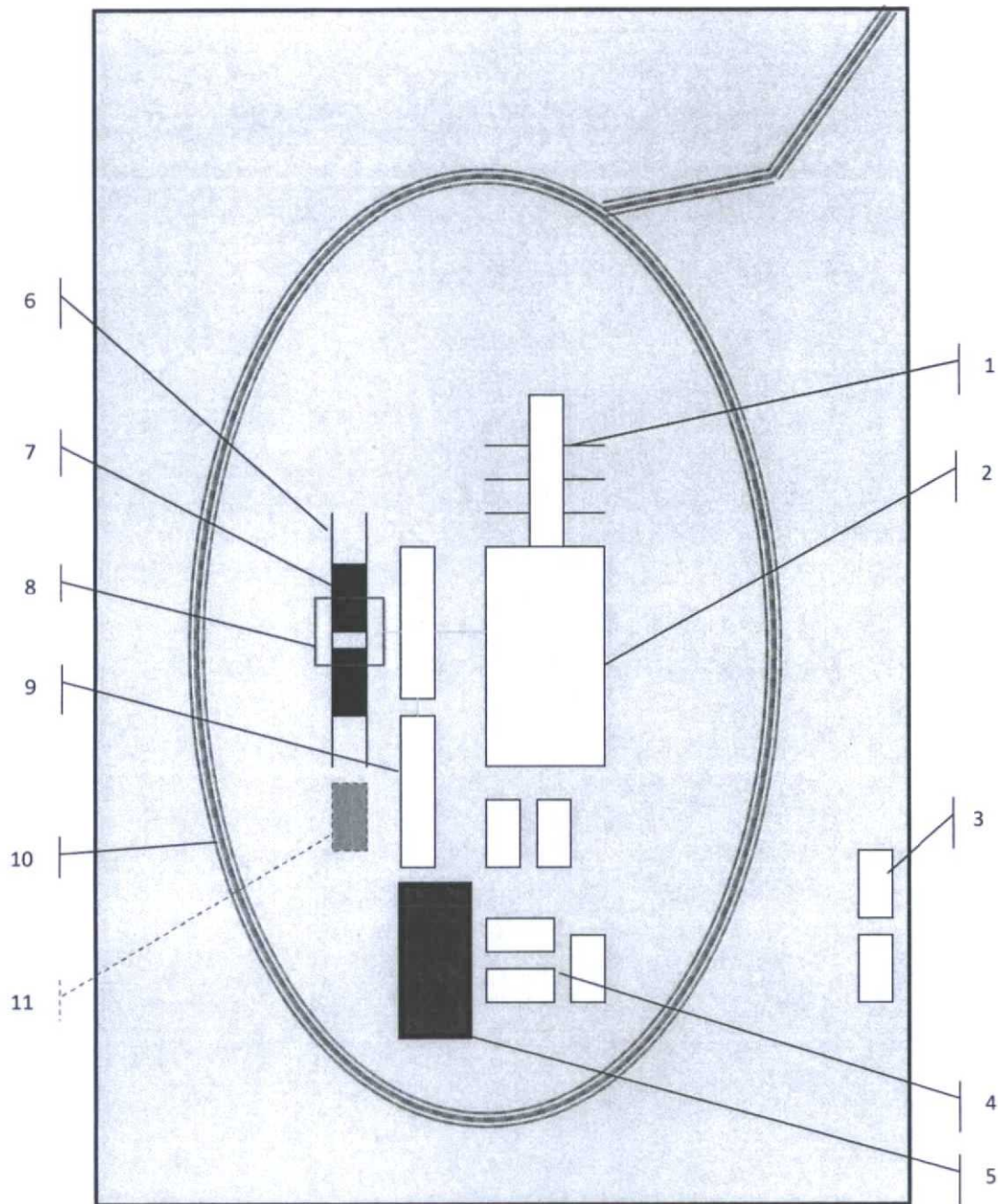
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SPEECH OFFICE OF HELMERICH & PAYNE, INT'L, DUBLIN, CO.

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 368	
PURCHASER: ContiTech Oil & Marine Corp.			P.O. N°: 4500398355		
CONTITECH RUBBER order N°: 538079		HOSE TYPE: 3" ID Choke and Kill Hose			
HOSE SERIAL N°: 67085		NOMINAL / ACTUAL LENGTH: 10,67 m / 10,71 m			
W.P. 68,9 MPa 10000 psi		T.P. 103,4 MPa 15000 psi		Duration: 60 min.	
Pressure test with water at ambient temperature					
See attachment. (1 page)					
↑ 10 mm = 10 Min. → 10 mm = 20 MPa					
COUPLINGS Type		Serial N°		Quality	
3" coupling with		1253 8903		AISI 4130	
4 1/16" 10K API b.w. Flange end				AISI 4130	
				Heat N°	
				A0709N A1126U	
				035285	
NOT DESIGNED FOR WELL TESTING				API Spec 16 C	
				Temperature rate:"B"	
All metal parts are flawless					
WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER INSPECTED AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.					
STATEMENT OF CONFORMITY: We hereby certify that the above items/equipment supplied by us are in conformity with the terms, conditions and specifications of the above Purchaser Order and that these items/equipment were fabricated inspected and tested in accordance with the referenced standards, codes and specifications and meet the relevant acceptance criteria and design requirements.					
COUNTRY OF ORIGIN HUNGARY/EU					
Date:		Inspector		Quality Control	
05. March 2014.				ContiTech Rubber Industrial Kft. Quality Control Dept. <i>[Signature]</i> (1) <i>[Signature]</i>	



Hose Data Sheet

CRI Order No.	538079
Customer	ContiTech Oil & Marine Corp.
Customer Order No	4500398355
Item No.	1
Hose Type	Flexible Hose
Standard	API SPEC 16 C
Inside dia in inches	3
Length	35 ft
Type of coupling one end	FLANGE 4.1/16" 10K API SPEC 6A TYPE 6BX FLANGE C/W BX155 R.GR.SOUR
Type of coupling other end	FLANGE 4.1/16" 10K API SPEC 6A TYPE 6BX FLANGE C/W BX155 R.GR.SOUR
H2S service NACE MR0175	Yes
Working Pressure	10 000 psi
Design Pressure	10 000 psi
Test Pressure	15 000 psi
Safety Factor	2,25
Marking	USUAL PHOENIX
Cover	NOT FIRE RESISTANT
Outside protection	St.steel outer wrap
Internal stripwound tube	No
Lining	OIL + GAS RESISTANT SOUR
Safety clamp	No
Lifting collar	No
Element C	No
Safety chain	No
Safety wire rope	No
Max.design temperature [°C]	100
Min.design temperature [°C]	-20
Min. Bend Radius operating [m]	0,90
Min. Bend Radius storage [m]	0,90
Electrical continuity	The Hose is electrically continuous
Type of packing	WOODEN CRATE ISPM-15



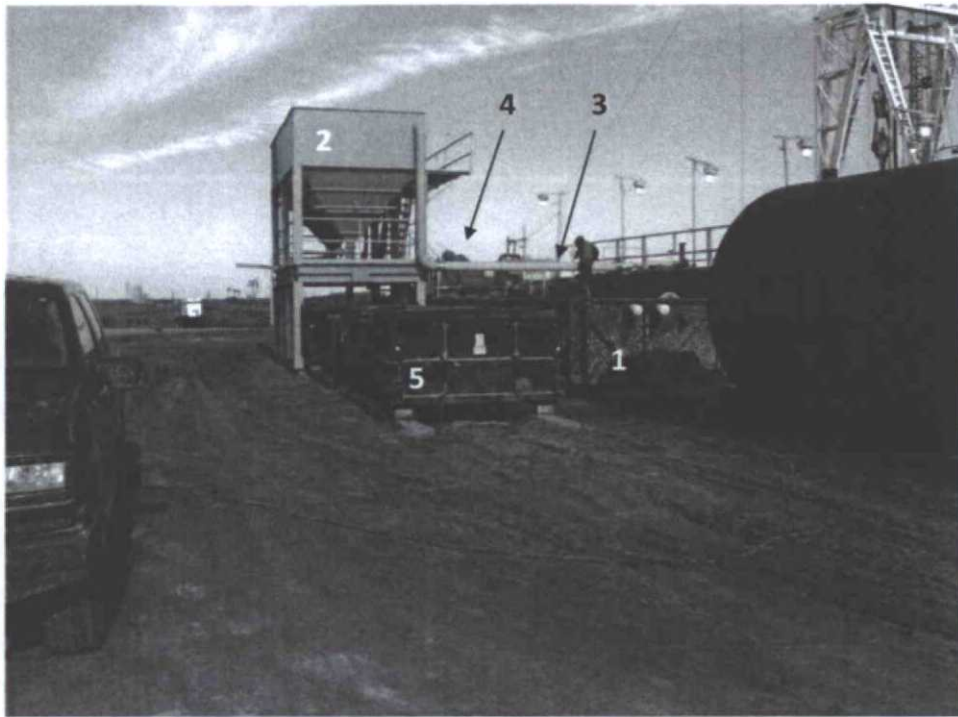
Schematic Closed Loop Drilling Rig*

1. Pipe Rack
2. Drill Rig
3. House Trailers/ Offices
4. Generator/Fuel/Storage
5. Overflow-Frac Tank
6. Skids
7. Roll Offs
8. Hopper or Centrifuge
9. Mud Tanks
10. Loop Drive
11. Generator (only for use with centrifuge)

*Not drawn to scale: Closed loop system requires at least 30 feet beyond mud tanks. Ideally 60 feet would be available



Above: Centrifugal Closed Loop System



Closed Loop Drilling System: Mud tanks to right (1)
Hopper in air to settle out solids (2)
Water return pipe (3)
Shaker between hopper and mud tanks (4)
Roll offs on skids (5)

Flow Chart for Drilling Fluids and Solids

