

OCD Hobbs

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

HOBBS OCD

NOV 06 2015

RECEIVED

H75-15-402

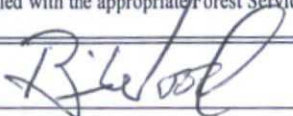
FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NMNM-118727
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		8. Lease Name and Well No. (915645) WILE E COYOTE FED'L 26-33-20 4H
3b. Phone No. (include area code) 281 674-2584		9. API Well No. 30-025- 42939
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At surface 220' FNL & 1115' FEL 20-26S-33E (A) At proposed prod. zone 250' FSL & 550' FEL 20-26S-33E (P)		10. Field and Pool, or Exploratory RED HILLS; UPR AS SHALE 98900
14. Distance in miles and direction from nearest town or post office* 23 AIR MILES SW OF JAL, NM		11. Sec., T. R. M. or Blk. and Survey or Area NENE 20-26S-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 640	17. Spacing Unit dedicated to this well E2E2
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. SHL: 2222' (Wile 3H) BHL: 2787' (Wile 3H)	19. Proposed Depth TVD: 9,323' MD: 14,101'	20. BLM/BIA Bond No. on file 022046443 NM8001170
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3,258' UNGRADED	22. Approximate date work will start* 06/01/2015	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:

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

25. Signature 	Name (Printed/Typed) BRIAN WOOD (PHONE: 505 466-8120)	Date 02/03/2015
Title CONSULTANT (FAX: 505 466-9682)		
Approved by (Signature) /s/ Chris Walls	Name (Printed/Typed)	Date NOV 30 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)

**APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS
ATTACHED**

K2
11/06/15

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

Carlsbad Controlled Water Basin

**Witness Surface &
Intermediate Casing**

NOV 09 2015

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM 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.**

SUBMIT IN TRIPLICATE – Other instructions on page 2.

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator
EOG Resources, Inc.

3a. Address
P.O. Box 2267
Midland, TX 79702

3b. Phone No. (include area code)
432-686-3689

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
220' FNL & 1115' FEL, NENE (A), Sec 20, T26S, R33E

5. Lease Serial No.
NMNM118727

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.
Wile E Coyote Federal 26-33-20 4H

9. API Well No.
30-025-

10. Field and Pool or Exploratory Area
WC Avalon Shale 1

11. 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

Stan Wagner

Date 09/09/2015

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

/s/ Chris Walls

FOR FIELD MANAGER

Title

Date OCT 30 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.

Office 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

DRILL PLAN PAGE 1

Wile E Coyote Federal 26-33-20 4H

SHL 220' FNL & 1115' FEL Sec. 20, T. 26 S., R. 33 E.

BHL 250' FSL & 550' FEL Sec. 20, T. 26 S., R. 33 E.

Lea County, NM

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Drilling Program

1. ESTIMATED TOPS

<u>Name</u>	<u>TVD</u>	<u>Content</u>
Quaternary	0'	fresh water
Santa Rosa	296'	brackish water
Rustler	823'	anhydrite
Salado (top of salt)	1,178'	salt, brine
Castile	3,163'	brine
Lamar (base of salt)	4,883'	salt
Bell Canyon	4,923'	brine water
Cherry Canyon	5,903'	oil, gas
Brushy Canyon	7,613'	oil, gas
Bone Spring limestone	9,033'	---
Leonard shale	9,098'	---
Avalon carbonate 1	9,203'	---
Avalon shale 1	9,233'	---
Avalon shale 1 target	9,283'	oil, gas
BHL*	9,323'	---

* MD = 14,101'

2. NOTABLE ZONES

Closest water well (C 02273) is 4,447' to the northeast. Depth to water in that well is 120'.

3. PRESSURE CONTROL

Initial BOP test will occur before drilling out the 13-3/8" casing shoe. A third party testing service will conduct all tests. Test pressures will be 250/5,000 psi for rams and 250/3,500 psi for annular (70% of working pressure) for

See
COA

2,500'

Roadrunner Oil & Gas LLC

DRILL PLAN PAGE 2

Wile E Coyote Federal 26-33-20 4H

SHL 220' FNL & 1115' FEL Sec. 20, T. 26 S., R. 33 E.

BHL 250' FSL & 550' FEL Sec. 20, T. 26 S., R. 33 E.

Lea County, NM

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

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

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 the 8,850' KOP. The build section will be drilled to a landing point at 9,596'. An 8-3/4" lateral section will be drilled to 14,101' (MD) and 9,323' (TVD).

Roadrunner Oil & Gas LLC

DRILL PLAN PAGE 3

Wile E Coyote Federal 26-33-20 4H

SHL 220' FNL & 1115' FEL Sec. 20, T. 26 S., R. 33 E.

BHL 250' FSL & 550' FEL Sec. 20, T. 26 S., R. 33 E.

Lea County, NM

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' - 875' ^{890'}	13.375"	New	54.5	J-55	Butt	3.55	6.13	17.8
12.25"	0' - 4961' ^{4590'}	9.625"	New	40	N-80	LTC	1.54	1.89	3.71
8.75"	0' - 14101'	5.5"	New	23	L-80 HCE	DWC/C	3.55	1.44	1.78

The following cement volumes are approximate. They 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 at least 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	450	13.5	1.75	9.16	787	100	GL
13.375" tail	Premium plus C + 0.005 lb/sk static free + 1% CaCl ₂ + 0.005 gps FP-6L	340	14.8	1.34	6.34	455	100	575'
9.625" lead	35:65 poz Premium plus C + 0.005 lb/sk static free + 5% NaCl + 0.6% CD-32 + 0.005 gps FP-6L + 4% bentonite + 0.5% sodium	925	12.9	1.92	10.16	1776	50	GL

Roadrunner Oil & Gas LLC

DRILL PLAN PAGE 4

Wile E Coyote Federal 26-33-20 4H

SHL 220' FNL & 1115' FEL Sec. 20, T. 26 S., R. 33 E.

BHL 250' FSL & 550' FEL Sec. 20, T. 26 S., R. 33 E.

Lea County, NM

	metasilicate + 0.1% FL-52A + 5% MPA							
9.625" tail	Premium plus C + 0.005 lb/sk static free + 0.005 gps FP-6L	370	14.8	1.33	6.32	492	50	3961'
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	1085	11.9	2.38	13.53	2582	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	1455	14.2	1.30	5.87	1891	35	8350'

5. MUD PROGRAM

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

Interval	Type	Weight	Viscosity	Fluid Loss
0' - 875' ^{890'}	fresh water spud mud	8.6 - 8.9	28 - 36	no control
875' - 4961' ^{4890'}	brine	9.8 - 10.0	28 - 30	no control
4961' - 9596' KOP to EOB	cut brine	8.8 - 9.3	28 - 30	no control
9596' - TD	cut brine	8.8 - 9.3	28 - 30	No control

Roadrunner Oil & Gas LLC

DRILL PLAN PAGE 5

Wile E Coyote Federal 26-33-20 4H

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BHL 250' FSL & 550' FEL Sec. 20, T. 26 S., R. 33 E.

Lea County, NM

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 requirement.
GRIN TO (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 4363 psi. Expected bottom hole temperature is 160° 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: Wile E Coyote Federal 26-33-20 4H

Well: 4H

Wellbore: Lateral

Design: Plan #1a



Azimuths to Grid North

True North: -0.40°

Magnetic North: 6.76°

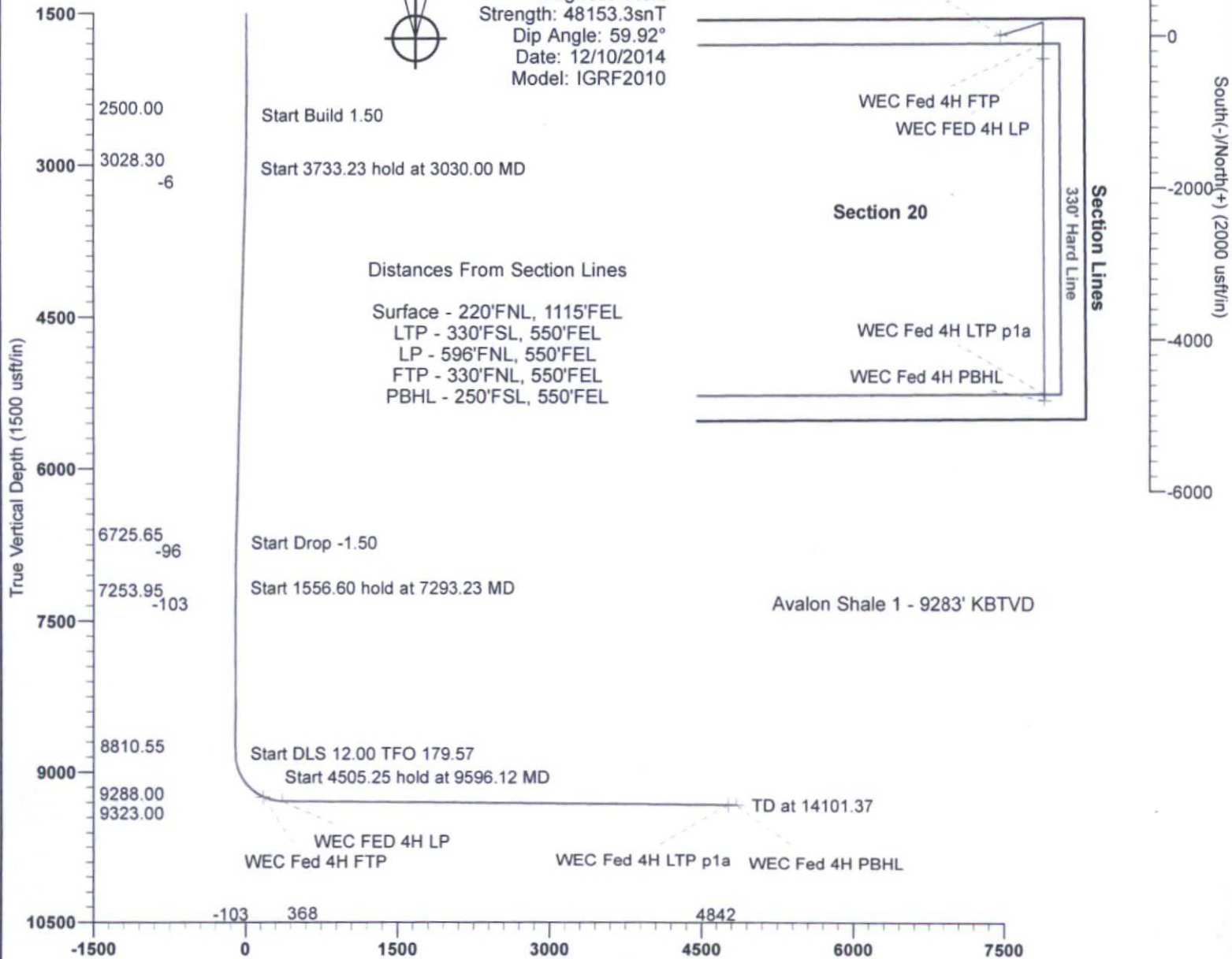
Magnetic Field

Strength: 48153.3snT

Dip Angle: 59.92°

Date: 12/10/2014

Model: IGRF2010



Vertical Section at 172.87° (1500 usft/in)

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
WEC Fed 4H SL	0.00	0.00	0.00	377508.00	771877.00	Point
WEC Fed 4H FTP	9245.27	-105.99	565.65	377402.01	772442.65	Point
WEC FED 4H LP	9288.00	-299.74	567.04	377208.26	772444.04	Point
WEC Fed 4H LTP p1a	9322.38	-4724.75	600.01	372783.25	772477.01	Point
WEC Fed 4H PBHL	9323.00	-4804.73	600.60	372703.27	772477.60	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	
2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	0.00	
3030.00	7.95	72.84	3028.30	10.83	35.08	1.50	72.84	-6.39	
6763.23	7.95	72.84	6725.65	163.17	528.43	0.00	0.00	-96.32	
7293.23	0.00	72.84	7253.95	174.00	563.51	1.50	180.00	-102.71	
8849.83	0.00	72.84	8810.55	174.00	563.51	0.00	72.84	-102.71	
9596.12	89.55	179.57	9288.00	-299.74	567.04	12.00	179.57	367.80	
14101.37	89.55	179.57	9323.00	-4804.73	600.60	0.00	0.00	4842.12	WEC Fed 4H PBHL

Premier Directional Drilling

Planning Report

Database:	EDM 5000.1 MultiUser DB	Local Co-ordinate Reference:	Well 4H
Company:	ROADRUNNER OIL & GAS, LLC	TVD Reference:	3258+25 @ 3283.00usft (planning)
Project:	Lea County, NM	MD Reference:	3258+25 @ 3283.00usft (planning)
Site:	Wile E Coyote Federal 26-33-20 4H	North Reference:	Grid
Well:	4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1a		

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	Wile E Coyote Federal 26-33-20 4H				
Site Position:		Northing:	377,508.00 usft	Latitude:	32° 2' 8.401 N
From:	Map	Easting:	771,877.00 usft	Longitude:	103° 35' 21.660 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.39

Well	4H					
Well Position	+N/-S	0.00 usft	Northing:	377,508.00 usft	Latitude:	32° 2' 8.401 N
	+E/-W	0.00 usft	Easting:	771,877.00 usft	Longitude:	103° 35' 21.660 W
Position Uncertainty	0.00 usft	Wellhead Elevation:		Ground Level:	3,258.00 usft	

Wellbore	Lateral				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/10/2014	7.15	59.92	48,153

Design	Plan #1a			
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	172.87

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	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,030.00	7.95	72.84	3,028.30	10.83	35.08	1.50	1.50	0.00	72.84	
6,763.23	7.95	72.84	6,725.65	163.17	528.43	0.00	0.00	0.00	0.00	
7,293.23	0.00	72.84	7,253.95	174.00	563.51	1.50	-1.50	0.00	180.00	
8,849.83	0.00	72.84	8,810.55	174.00	563.51	0.00	0.00	0.00	72.84	
9,596.12	89.55	179.57	9,288.00	-299.74	567.04	12.00	12.00	14.30	179.57	
14,101.37	89.55	179.57	9,323.00	-4,804.73	600.60	0.00	0.00	0.00	0.00	WEC Fed 4H PBHL

Premier Directional Drilling

Planning Report

Database:	EDM 5000.1 MultiUser DB	Local Co-ordinate Reference:	Well 4H
Company:	ROADRUNNER OIL & GAS, LLC	TVD Reference:	3258+25 @ 3283.00usft (planning)
Project:	Lea County, NM	MD Reference:	3258+25 @ 3283.00usft (planning)
Site:	Wile E Coyote Federal 26-33-20 4H	North Reference:	Grid
Well:	4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1a		

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
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	1.50	72.84	2,599.99	0.39	1.25	-0.23	1.50	1.50	0.00
2,700.00	3.00	72.84	2,699.91	1.54	5.00	-0.91	1.50	1.50	0.00
2,800.00	4.50	72.84	2,799.69	3.47	11.25	-2.05	1.50	1.50	0.00
2,900.00	6.00	72.84	2,899.27	6.17	19.99	-3.64	1.50	1.50	0.00
3,000.00	7.50	72.84	2,998.57	9.64	31.22	-5.69	1.50	1.50	0.00
3,030.00	7.95	72.84	3,028.30	10.83	35.08	-6.39	1.50	1.50	0.00
3,100.00	7.95	72.84	3,097.63	13.69	44.33	-8.08	0.00	0.00	0.00
3,200.00	7.95	72.84	3,196.67	17.77	57.54	-10.49	0.00	0.00	0.00
3,300.00	7.95	72.84	3,295.71	21.85	70.76	-12.90	0.00	0.00	0.00
3,400.00	7.95	72.84	3,394.75	25.93	83.97	-15.31	0.00	0.00	0.00
3,500.00	7.95	72.84	3,493.78	30.01	97.19	-17.72	0.00	0.00	0.00
3,600.00	7.95	72.84	3,592.82	34.09	110.40	-20.12	0.00	0.00	0.00
3,700.00	7.95	72.84	3,691.86	38.17	123.62	-22.53	0.00	0.00	0.00
3,800.00	7.95	72.84	3,790.90	42.25	136.83	-24.94	0.00	0.00	0.00
3,900.00	7.95	72.84	3,889.94	46.33	150.05	-27.35	0.00	0.00	0.00
4,000.00	7.95	72.84	3,988.98	50.41	163.26	-29.76	0.00	0.00	0.00
4,100.00	7.95	72.84	4,088.02	54.49	176.48	-32.17	0.00	0.00	0.00
4,200.00	7.95	72.84	4,187.06	58.58	189.69	-34.58	0.00	0.00	0.00
4,300.00	7.95	72.84	4,286.10	62.66	202.91	-36.99	0.00	0.00	0.00
4,400.00	7.95	72.84	4,385.13	66.74	216.12	-39.39	0.00	0.00	0.00
4,500.00	7.95	72.84	4,484.17	70.82	229.34	-41.80	0.00	0.00	0.00
4,600.00	7.95	72.84	4,583.21	74.90	242.56	-44.21	0.00	0.00	0.00
4,700.00	7.95	72.84	4,682.25	78.98	255.77	-46.62	0.00	0.00	0.00
4,800.00	7.95	72.84	4,781.29	83.06	268.99	-49.03	0.00	0.00	0.00
4,900.00	7.95	72.84	4,880.33	87.14	282.20	-51.44	0.00	0.00	0.00
5,000.00	7.95	72.84	4,979.37	91.22	295.42	-53.85	0.00	0.00	0.00
5,100.00	7.95	72.84	5,078.41	95.30	308.63	-56.26	0.00	0.00	0.00
5,200.00	7.95	72.84	5,177.45	99.38	321.85	-58.67	0.00	0.00	0.00

Premier Directional Drilling

Planning Report

Database:	EDM 5000.1 MultiUser DB	Local Co-ordinate Reference:	Well 4H
Company:	ROADRUNNER OIL & GAS, LLC	TVD Reference:	3258+25 @ 3283.00usft (planning)
Project:	Lea County, NM	MD Reference:	3258+25 @ 3283.00usft (planning)
Site:	Wile E Coyote Federal 26-33-20 4H	North Reference:	Grid
Well:	4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1a		

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)
5,300.00	7.95	72.84	5,276.48	103.46	335.06	-61.07	0.00	0.00	0.00
5,400.00	7.95	72.84	5,375.52	107.54	348.28	-63.48	0.00	0.00	0.00
5,500.00	7.95	72.84	5,474.56	111.62	361.49	-65.89	0.00	0.00	0.00
5,600.00	7.95	72.84	5,573.60	115.70	374.71	-68.30	0.00	0.00	0.00
5,700.00	7.95	72.84	5,672.64	119.79	387.92	-70.71	0.00	0.00	0.00
5,800.00	7.95	72.84	5,771.68	123.87	401.14	-73.12	0.00	0.00	0.00
5,900.00	7.95	72.84	5,870.72	127.95	414.35	-75.53	0.00	0.00	0.00
6,000.00	7.95	72.84	5,969.76	132.03	427.57	-77.94	0.00	0.00	0.00
6,100.00	7.95	72.84	6,068.80	136.11	440.78	-80.35	0.00	0.00	0.00
6,200.00	7.95	72.84	6,167.83	140.19	454.00	-82.75	0.00	0.00	0.00
6,300.00	7.95	72.84	6,266.87	144.27	467.21	-85.16	0.00	0.00	0.00
6,400.00	7.95	72.84	6,365.91	148.35	480.43	-87.57	0.00	0.00	0.00
6,500.00	7.95	72.84	6,464.95	152.43	493.64	-89.98	0.00	0.00	0.00
6,600.00	7.95	72.84	6,563.99	156.51	506.86	-92.39	0.00	0.00	0.00
6,700.00	7.95	72.84	6,663.03	160.59	520.07	-94.80	0.00	0.00	0.00
6,763.23	7.95	72.84	6,725.65	163.17	528.43	-96.32	0.00	0.00	0.00
6,800.00	7.40	72.84	6,762.09	164.62	533.12	-97.18	1.50	-1.50	0.00
6,900.00	5.90	72.84	6,861.42	168.04	544.18	-99.19	1.50	-1.50	0.00
7,000.00	4.40	72.84	6,961.01	170.68	552.76	-100.76	1.50	-1.50	0.00
7,100.00	2.90	72.84	7,060.81	172.56	558.84	-101.86	1.50	-1.50	0.00
7,200.00	1.40	72.84	7,160.73	173.67	562.42	-102.52	1.50	-1.50	0.00
7,293.23	0.00	72.84	7,253.95	174.00	563.51	-102.71	1.50	-1.50	0.00
7,300.00	0.00	72.84	7,260.72	174.00	563.51	-102.71	0.00	0.00	0.00
7,400.00	0.00	72.84	7,360.72	174.00	563.51	-102.71	0.00	0.00	0.00
7,500.00	0.00	72.84	7,460.72	174.00	563.51	-102.71	0.00	0.00	0.00
7,600.00	0.00	72.84	7,560.72	174.00	563.51	-102.71	0.00	0.00	0.00
7,700.00	0.00	72.84	7,660.72	174.00	563.51	-102.71	0.00	0.00	0.00
7,800.00	0.00	72.84	7,760.72	174.00	563.51	-102.71	0.00	0.00	0.00
7,900.00	0.00	72.84	7,860.72	174.00	563.51	-102.71	0.00	0.00	0.00
8,000.00	0.00	72.84	7,960.72	174.00	563.51	-102.71	0.00	0.00	0.00
8,100.00	0.00	72.84	8,060.72	174.00	563.51	-102.71	0.00	0.00	0.00
8,200.00	0.00	72.84	8,160.72	174.00	563.51	-102.71	0.00	0.00	0.00
8,300.00	0.00	72.84	8,260.72	174.00	563.51	-102.71	0.00	0.00	0.00
8,400.00	0.00	72.84	8,360.72	174.00	563.51	-102.71	0.00	0.00	0.00
8,500.00	0.00	72.84	8,460.72	174.00	563.51	-102.71	0.00	0.00	0.00
8,600.00	0.00	72.84	8,560.72	174.00	563.51	-102.71	0.00	0.00	0.00
8,700.00	0.00	72.84	8,660.72	174.00	563.51	-102.71	0.00	0.00	0.00
8,800.00	0.00	72.84	8,760.72	174.00	563.51	-102.71	0.00	0.00	0.00
8,849.83	0.00	72.84	8,810.55	174.00	563.51	-102.71	0.00	0.00	0.00
8,875.00	3.02	179.57	8,835.71	173.34	563.51	-102.06	12.00	12.00	424.01
8,900.00	6.02	179.57	8,860.63	171.37	563.53	-100.10	12.00	12.00	0.00
8,925.00	9.02	179.57	8,885.41	168.10	563.55	-96.85	12.00	12.00	0.00
8,950.00	12.02	179.57	8,909.99	163.53	563.58	-92.32	12.00	12.00	0.00
8,975.00	15.02	179.57	8,934.29	157.69	563.63	-86.51	12.00	12.00	0.00
9,000.00	18.02	179.57	8,958.26	150.58	563.68	-79.45	12.00	12.00	0.00
9,025.00	21.02	179.57	8,981.82	142.23	563.74	-71.16	12.00	12.00	0.00
9,050.00	24.02	179.57	9,004.91	132.66	563.81	-61.65	12.00	12.00	0.00
9,075.00	27.02	179.57	9,027.47	121.89	563.90	-50.95	12.00	12.00	0.00
9,100.00	30.02	179.57	9,049.43	109.95	563.98	-39.10	12.00	12.00	0.00
9,125.00	33.02	179.57	9,070.74	96.88	564.08	-26.12	12.00	12.00	0.00
9,150.00	36.02	179.57	9,091.34	82.72	564.19	-12.05	12.00	12.00	0.00
9,175.00	39.02	179.57	9,111.16	67.49	564.30	3.07	12.00	12.00	0.00
9,200.00	42.02	179.57	9,130.16	51.25	564.42	19.20	12.00	12.00	0.00
9,225.00	45.02	179.57	9,148.29	34.04	564.55	36.30	12.00	12.00	0.00

Premier Directional Drilling

Planning Report

Database: EDM 5000.1 MultiUser DB
 Company: ROADRUNNER OIL & GAS, LLC
 Project: Lea County, NM
 Site: Wile E Coyote Federal 26-33-20 4H
 Well: 4H
 Wellbore: Lateral
 Design: Plan #1a

Local Co-ordinate Reference:
 TVD Reference:
 MD Reference:
 North Reference:
 Survey Calculation Method:

Well 4H
 3258+25 @ 3283.00usft (planning)
 3258+25 @ 3283.00usft (planning)
 Grid
 Minimum Curvature

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)
9,250.00	48.02	179.57	9,165.49	15.90	564.68	54.31	12.00	12.00	0.00
9,275.00	51.02	179.57	9,181.72	-3.11	564.83	73.19	12.00	12.00	0.00
9,300.00	54.02	179.57	9,196.93	-22.95	564.97	92.90	12.00	12.00	0.00
9,325.00	57.02	179.57	9,211.08	-43.55	565.13	113.36	12.00	12.00	0.00
9,350.00	60.02	179.57	9,224.13	-64.87	565.29	134.53	12.00	12.00	0.00
9,375.00	63.02	179.57	9,236.05	-86.84	565.45	156.36	12.00	12.00	0.00
9,400.00	66.02	179.57	9,246.81	-109.41	565.62	178.77	12.00	12.00	0.00
9,425.00	69.02	179.57	9,256.36	-132.51	565.79	201.71	12.00	12.00	0.00
9,450.00	72.02	179.57	9,264.70	-156.07	565.97	225.11	12.00	12.00	0.00
9,475.00	75.02	179.57	9,271.79	-180.04	566.14	248.92	12.00	12.00	0.00
9,500.00	78.02	179.57	9,277.62	-204.35	566.33	273.06	12.00	12.00	0.00
9,525.00	81.02	179.57	9,282.16	-228.93	566.51	297.47	12.00	12.00	0.00
9,550.00	84.02	179.57	9,285.42	-253.71	566.69	322.09	12.00	12.00	0.00
9,575.00	87.02	179.57	9,287.37	-278.63	566.88	346.84	12.00	12.00	0.00
9,596.12	89.55	179.57	9,288.00	-299.74	567.04	367.80	12.00	12.00	0.00
9,600.00	89.55	179.57	9,288.03	-303.62	567.07	371.66	0.00	0.00	0.00
9,700.00	89.55	179.57	9,288.81	-403.61	567.81	470.97	0.00	0.00	0.00
9,800.00	89.55	179.57	9,289.58	-503.61	568.56	570.28	0.00	0.00	0.00
9,900.00	89.55	179.57	9,290.36	-603.60	569.30	669.60	0.00	0.00	0.00
10,000.00	89.55	179.57	9,291.14	-703.60	570.05	768.91	0.00	0.00	0.00
10,100.00	89.55	179.57	9,291.91	-803.59	570.79	868.22	0.00	0.00	0.00
10,200.00	89.55	179.57	9,292.69	-903.59	571.54	967.54	0.00	0.00	0.00
10,300.00	89.55	179.57	9,293.47	-1,003.58	572.28	1,066.85	0.00	0.00	0.00
10,400.00	89.55	179.57	9,294.25	-1,103.57	573.03	1,166.17	0.00	0.00	0.00
10,500.00	89.55	179.57	9,295.02	-1,203.57	573.77	1,265.48	0.00	0.00	0.00
10,600.00	89.55	179.57	9,295.80	-1,303.56	574.52	1,364.79	0.00	0.00	0.00
10,700.00	89.55	179.57	9,296.58	-1,403.56	575.26	1,464.11	0.00	0.00	0.00
10,800.00	89.55	179.57	9,297.35	-1,503.55	576.01	1,563.42	0.00	0.00	0.00
10,900.00	89.55	179.57	9,298.13	-1,603.55	576.75	1,662.73	0.00	0.00	0.00
11,000.00	89.55	179.57	9,298.91	-1,703.54	577.50	1,762.05	0.00	0.00	0.00
11,100.00	89.55	179.57	9,299.68	-1,803.53	578.24	1,861.36	0.00	0.00	0.00
11,200.00	89.55	179.57	9,300.46	-1,903.53	578.99	1,960.67	0.00	0.00	0.00
11,300.00	89.55	179.57	9,301.24	-2,003.52	579.73	2,059.99	0.00	0.00	0.00
11,400.00	89.55	179.57	9,302.01	-2,103.52	580.48	2,159.30	0.00	0.00	0.00
11,500.00	89.55	179.57	9,302.79	-2,203.51	581.22	2,258.61	0.00	0.00	0.00
11,600.00	89.55	179.57	9,303.57	-2,303.50	581.97	2,357.93	0.00	0.00	0.00
11,700.00	89.55	179.57	9,304.34	-2,403.50	582.71	2,457.24	0.00	0.00	0.00
11,800.00	89.55	179.57	9,305.12	-2,503.49	583.46	2,556.55	0.00	0.00	0.00
11,900.00	89.55	179.57	9,305.90	-2,603.49	584.20	2,655.87	0.00	0.00	0.00
12,000.00	89.55	179.57	9,306.68	-2,703.48	584.95	2,755.18	0.00	0.00	0.00
12,100.00	89.55	179.57	9,307.45	-2,803.48	585.69	2,854.49	0.00	0.00	0.00
12,200.00	89.55	179.57	9,308.23	-2,903.47	586.44	2,953.81	0.00	0.00	0.00
12,300.00	89.55	179.57	9,309.01	-3,003.46	587.18	3,053.12	0.00	0.00	0.00
12,400.00	89.55	179.57	9,309.78	-3,103.46	587.93	3,152.43	0.00	0.00	0.00
12,500.00	89.55	179.57	9,310.56	-3,203.45	588.67	3,251.75	0.00	0.00	0.00
12,600.00	89.55	179.57	9,311.34	-3,303.45	589.42	3,351.06	0.00	0.00	0.00
12,700.00	89.55	179.57	9,312.11	-3,403.44	590.16	3,450.37	0.00	0.00	0.00
12,800.00	89.55	179.57	9,312.89	-3,503.44	590.91	3,549.69	0.00	0.00	0.00
12,900.00	89.55	179.57	9,313.67	-3,603.43	591.65	3,649.00	0.00	0.00	0.00
13,000.00	89.55	179.57	9,314.44	-3,703.42	592.40	3,748.31	0.00	0.00	0.00
13,100.00	89.55	179.57	9,315.22	-3,803.42	593.14	3,847.63	0.00	0.00	0.00
13,200.00	89.55	179.57	9,316.00	-3,903.41	593.89	3,946.94	0.00	0.00	0.00
13,300.00	89.55	179.57	9,316.77	-4,003.41	594.63	4,046.25	0.00	0.00	0.00
13,400.00	89.55	179.57	9,317.55	-4,103.40	595.38	4,145.57	0.00	0.00	0.00

Premier Directional Drilling

Planning Report

Database:	EDM 5000.1 MultiUser DB	Local Co-ordinate Reference:	Well 4H
Company:	ROADRUNNER OIL & GAS, LLC	TVD Reference:	3258+25 @ 3283.00usft (planning)
Project:	Lea County, NM	MD Reference:	3258+25 @ 3283.00usft (planning)
Site:	Wile E Coyote Federal 26-33-20 4H	North Reference:	Grid
Well:	4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1a		

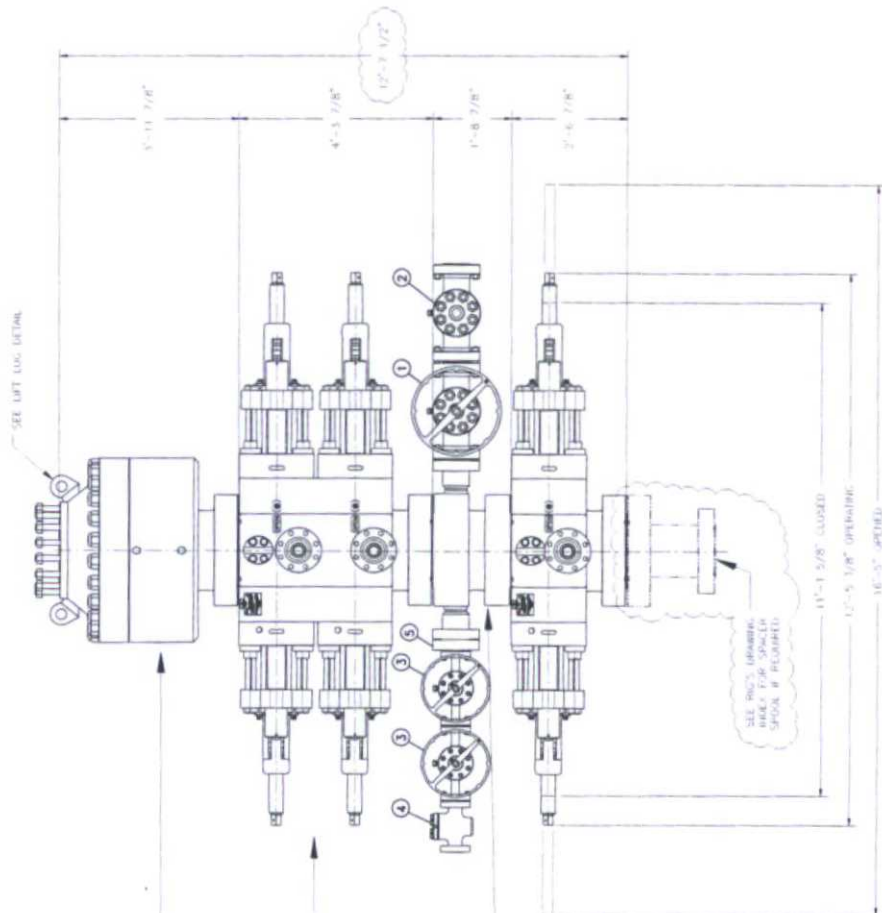
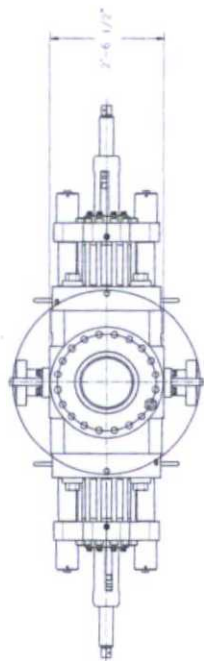
Planned Survey

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)
13,500.00	89.55	179.57	9,318.33	-4,203.39	596.12	4,244.88	0.00	0.00	0.00
13,600.00	89.55	179.57	9,319.11	-4,303.39	596.87	4,344.20	0.00	0.00	0.00
13,700.00	89.55	179.57	9,319.88	-4,403.38	597.61	4,443.51	0.00	0.00	0.00
13,800.00	89.55	179.57	9,320.66	-4,503.38	598.36	4,542.82	0.00	0.00	0.00
13,900.00	89.55	179.57	9,321.44	-4,603.37	599.10	4,642.14	0.00	0.00	0.00
14,000.00	89.55	179.57	9,322.21	-4,703.37	599.85	4,741.45	0.00	0.00	0.00
14,101.37	89.55	179.57	9,323.00	-4,804.73	600.60	4,842.12	0.00	0.00	0.00

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
WEC Fed 4H SL	0.00	0.00	0.00	0.00	0.00	377,508.00	771,877.00	32° 2' 8.401 N	103° 35' 21.660 W
- plan hits target center									
- Point									
WEC Fed 4H FTP	0.00	0.00	9,245.27	-105.99	565.65	377,402.01	772,442.65	32° 2' 7.313 N	103° 35' 15.097 W
- plan misses target center by 0.06usft at 9396.25usft MD (9245.27 TVD, -105.99 N, 565.59 E)									
- Point									
WEC FED 4H LP	0.00	0.00	9,288.00	-299.74	567.04	377,208.26	772,444.04	32° 2' 5.396 N	103° 35' 15.097 W
- plan hits target center									
- Point									
WEC Fed 4H LTP p1a	0.00	0.00	9,322.38	-4,724.75	600.01	372,783.25	772,477.01	32° 1' 21.606 N	103° 35' 15.069 W
- plan misses target center by 21.38usft at 14000.00usft MD (9322.21 TVD, -4703.37 N, 599.85 E)									
- Point									
WEC Fed 4H PBHL	0.00	0.00	9,323.00	-4,804.73	600.60	372,703.27	772,477.60	32° 1' 20.814 N	103° 35' 15.068 W
- plan hits target center									
- Point									

- LEGEND
- | | | | | | | |
|---|---|-----------|---------|-----|------|-------|
| ① | 4 | 1/16"-10M | FLANGED | END | GATE | VALVE |
| ② | 4 | 1/16"-10M | FLANGED | END | GATE | VALVE |
| ③ | 2 | 1/16"-10M | FLANGED | END | GATE | VALVE |
| ④ | 2 | 1/16"-10M | FLANGED | END | GATE | VALVE |
| ⑤ | 2 | 1/16"-10M | FLANGED | END | GATE | VALVE |
| ⑥ | 2 | 1/16"-10M | FLANGED | END | GATE | VALVE |
| ⑦ | 2 | 1/16"-10M | FLANGED | END | GATE | VALVE |
| ⑧ | 2 | 1/16"-10M | FLANGED | END | GATE | VALVE |
| ⑨ | 2 | 1/16"-10M | FLANGED | END | GATE | VALVE |
| ⑩ | 2 | 1/16"-10M | FLANGED | END | GATE | VALVE |
| ⑪ | 2 | 1/16"-10M | FLANGED | END | GATE | VALVE |
| ⑫ | 2 | 1/16"-10M | FLANGED | END | GATE | VALVE |
| ⑬ | 2 | 1/16"-10M | FLANGED | END | GATE | VALVE |
| ⑭ | 2 | 1/16"-10M | FLANGED | END | GATE | VALVE |
| ⑮ | 2 | 1/16"-10M | FLANGED | END | GATE | VALVE |
| ⑯ | 2 | 1/16"-10M | FLANGED | END | GATE | VALVE |
| ⑰ | 2 | 1/16"-10M | FLANGED | END | GATE | VALVE |
| ⑱ | 2 | 1/16"-10M | FLANGED | END | GATE | VALVE |
| ⑲ | 2 | 1/16"-10M | FLANGED | END | GATE | VALVE |
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| ㊿ | 2 | 1/16"-10M | FLANGED | END | GATE | VALVE |



SMOOTHER BOLDED—COVER SMOOTH
APPROXIMATE VOLUME, 140 LBS
APPROXIMATE DENSITY, 0.35 g./cc.³ (2.2 MP)
TOM BOTTOM FLANGE = 34
STORAGE TOP (WEIGHT) = 14,200
BOLDED SMOOTHER APPROX. 140 ml
ON RESISTANCE ACETYLURETHANE
(CONT.)

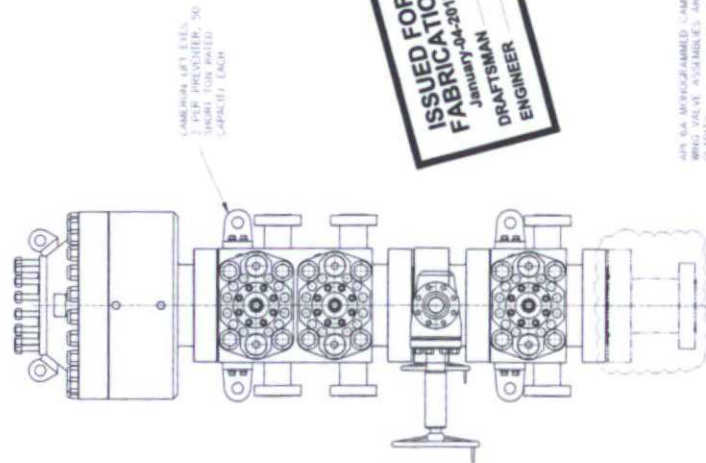
CARBONUM DOUBLE
HAM-TYPE PRESURIZER APP. 160
UNDEFORMED, 1.3 5/8" I.D.
W/ 5" CARBON FIBER
W/ CARBON FIBER PACKERS
& TOP SEALS IN TOP CAVITY
AND CARBON FIBER
BUND PAKS IN BOTTOM CAVITY
BOTTOM FLANGE - SURFACED
TOP WEIGHT = 21,100 LBS.
(W/ PAKS)

13. 5/8"-10M WP
CARPAIN (DOLLAR) (SPOA
(APR. 16A MCHASAPAREE)).
STUDIED TOP & FLANGED BOTTOM
NOTE: 4. 1/16"-10M WP FLANGED GUILTS
(WHEN APPROPRIATELY 6. (1985)

CAMPFEN, ONE SINGLE RAMP TYPE
PRE-WHELS (4) 1/4
MONORAILLED, 1 1/2" x 7/8" x 100 W/1
WITH 5" CAMPFEN PAGE RAMP
(CAMPFEN FRONT RACKER, & TOP
32.45) BOTTOM FLANGE
STUBBED TOP
WEIGH = 11.000 LBS

PROPRIETARY

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ISSUED FOR
FABRICATION
January-04-2012
DRAFTSMAN
ENGINEER

can be reprogrammed. CABLES, HOSE AND BELL
RING VALVE ASSEMBLIES ARE NOT SHOWN FOR
CLARITY

 HELMERICH & PAYNE INTERNATIONAL DRILLING CO.		TITLE: 13 5/8" - 10M BOP 3 RAM STACK FLEXIG3	
CUSTOMER H&P PROJECT: FLEXIG3		DRAWING NO.: 210-P1-07 DATE: 6-5-02 SHEET 1 OF 5	
ENGINEERING APPROVAL:		SCALE: 3/4" = 1'	
12/19/07 4-10-07 4-04-07 03-07-07	ADDED SHEET 03 CHANGED FROM 2000 L SIZED RAMMER W/ 1.1 L & 1.1 W TO 2000 W/ 1.1 L ADDED TO SPACER ADAPTER SPOOL ADDED ADAPTER SPOOL	DATE 1-4-11	REV F



HELMERICH & PAYNE
INTERNATIONAL DRILLING CO.

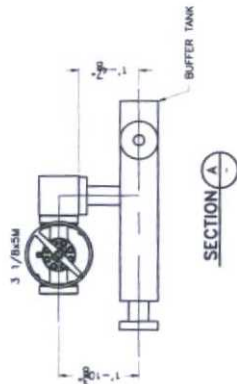
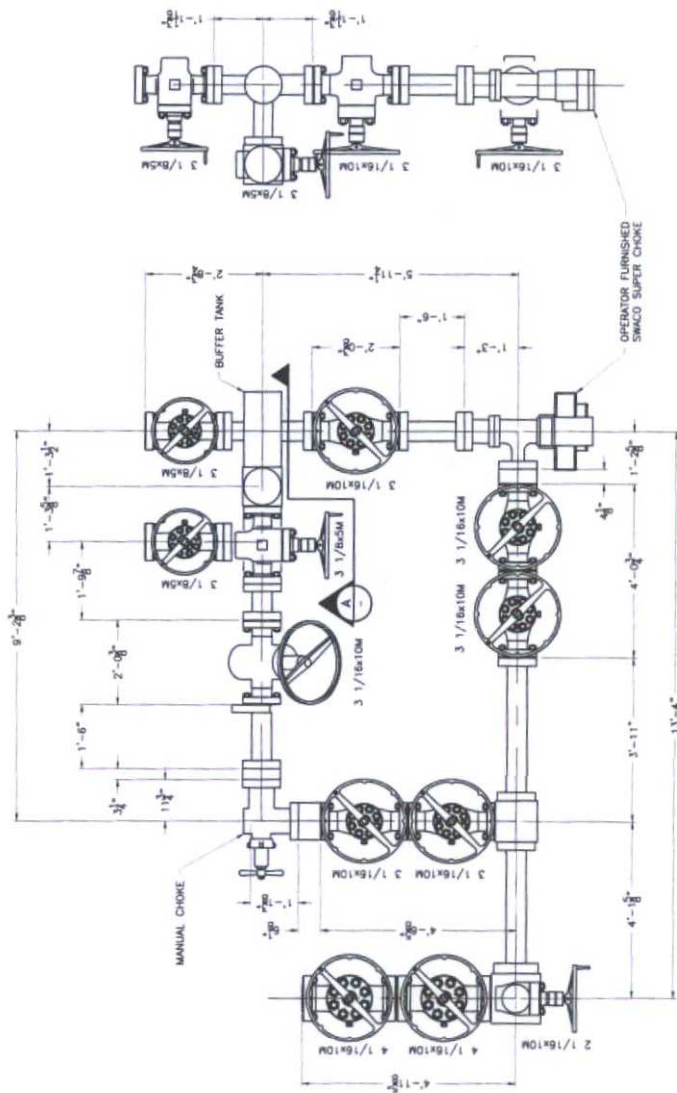
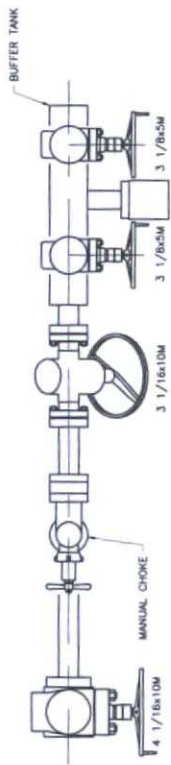
**GAS BUSTER PIPING
FLEXRIG3**

DATE	ENGINEERING APPROVAL	DATE
9/13/08	ADDED SPOOL #8	L7
08-04-08	ADDED MENT LIEN SPOOLS CALLOUT	M7S
05-28-08	UPDATED SPOOL #2	GWH
05-18-08	REVISED SPOOLS 5, 6 & 7	M7S
3/11/09	ADDED SPOOL #9	GZ
REV	DESCRIPTION	BY

PROPRIETARY

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DATE: 01-30-03	DWG. NO.: 235-P4-29	REV: F
SHEET: 1 OF 2		
SCALE: 3/8"=1'		
MTS		



ISSUED FOR
FABRICATION
MARCH 9, 2006
DRAFTSMAN
ENGINEER

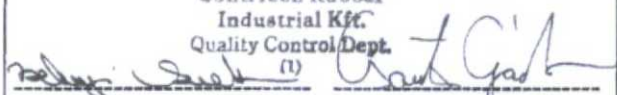
HELMERICH & PAYNE
INTERNATIONAL DRILLING CO.

CHOKE MANIFOLD

REV	DATE	DESCRIPTION	BY	DATE	DESCRIPTION
1	10/15/02	ADJUST DM TO FIELD CONFIRMED DM	RAY		
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PROPRIETARY

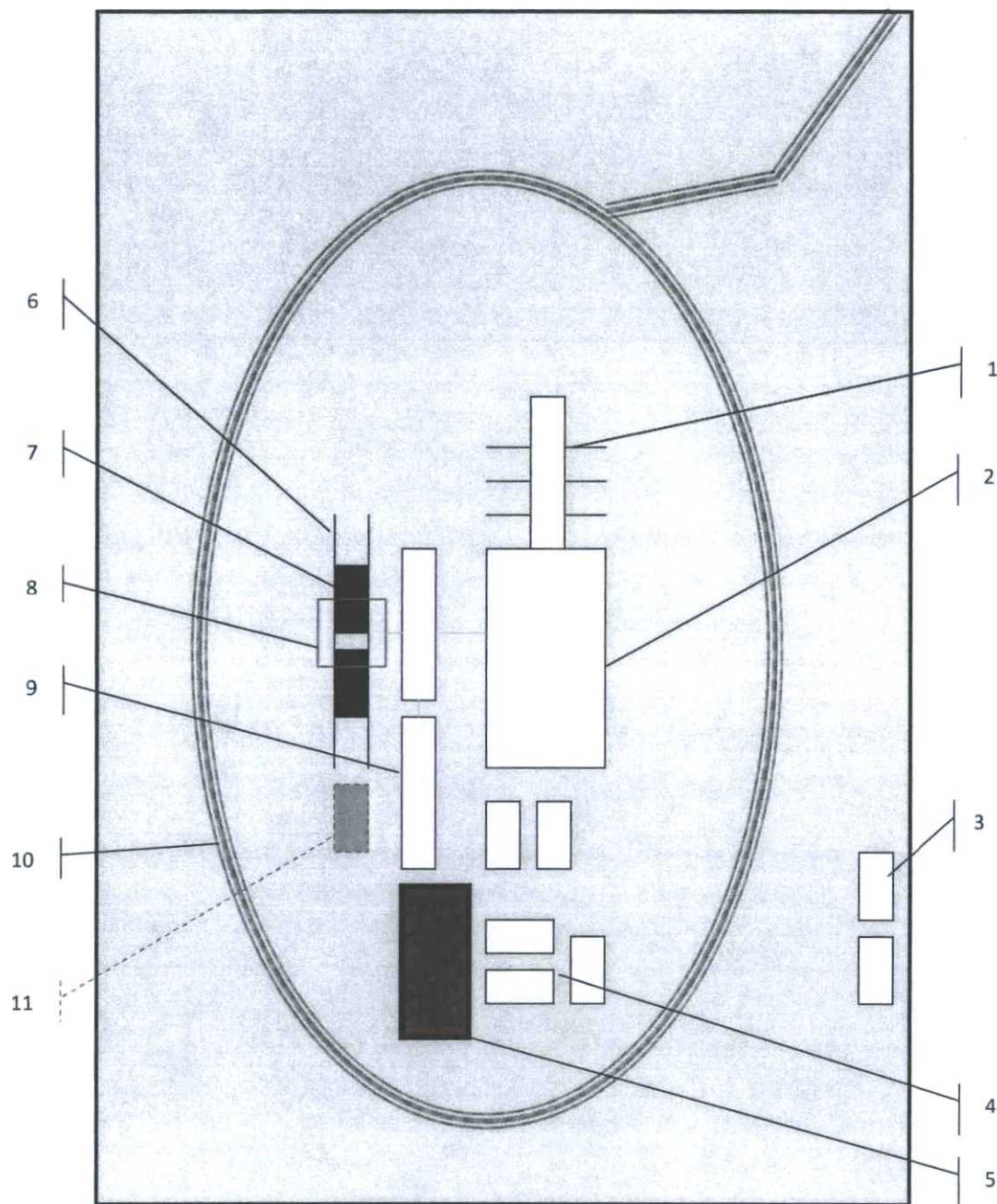
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QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 368	
PURCHASER: ContiTech Oil & Marine Corp.				P.O. N°: 4500398355	
CONTITECH RUBBER order N°: 538079		HOSE TYPE: 3" ID Choke and Kill Hose			
HOSE SERIAL N°: 67085		NOMINAL / ACTUAL LENGTH: 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	
				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. 	



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

PERMITS WEST, INC.

PROVIDING PERMITS for LAND USERS

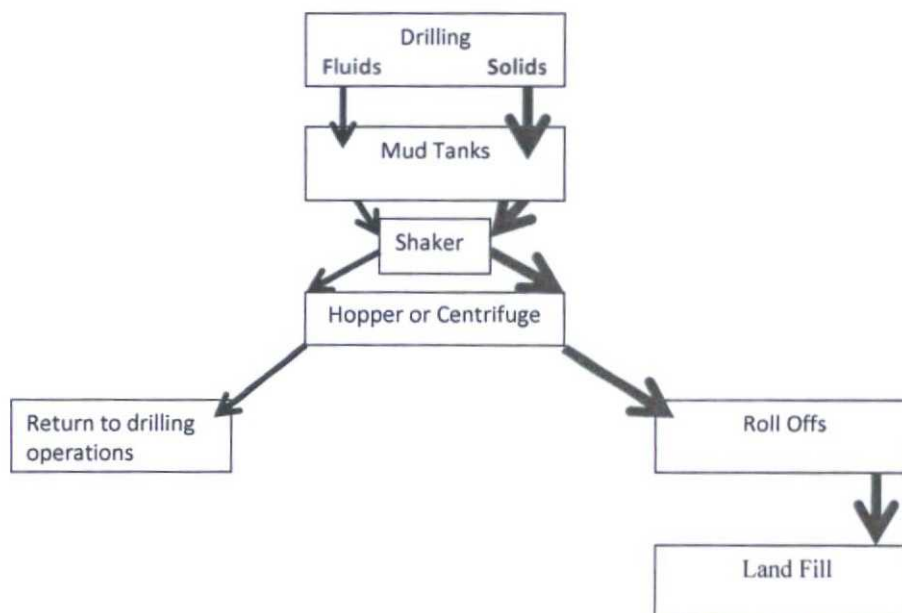
37Verano Loop, Santa Fe, New Mexico 87508

(505) 466-8120



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



Roadrunner's
Wile E Coyote Federal 26-33-20 4H
rig diagram

NORTH 
1" = 75'

