

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

HOBBS OCD

NOV 06 2015

RECEIVED

5. Lease Serial No.
NMNM-118727

6. If Indian, Allottee or Tribe Name
N/A

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

8. Lease Name and Well No. (315645)
WILE E COYOTE FED'L 26-33-20 1H

9. API Well No.
30-025- 42936

10. Field and Pool, or Exploratory (97900)
RED HILLS-UPR BS GHALE

11. Sec., T. R. M. or Blk. and Survey of Area
SWSW 20-26S-33E

12. County or Parish
LEA

13. State
NM

1a. Type of work: ☒ DRILL ☐ REENTER

1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

2. Name of Operator ROADRUNNER OIL & GAS LLC (308491)

3a. Address 363 N. SAM HOUSTON PKWY EAST, #100
HOUSTON, TX 77060

3b. Phone No. (include area code)
281 674-2584

4. Location of Well (Report location clearly and in accordance with any State requirements.)

At surface 220' FSL & 950' FWL 20-26S-33E (M)

At proposed prod. zone 250' FNL & 550' FWL 20-26S-33E (D)

14. Distance in miles and direction from nearest town or post office*
22 AIR MILES NE OF ORLA, TX

15. Distance from proposed*
location to nearest SHL: 220'
property or lease line, ft. BHL: 250'
(Also to nearest drig. unit line, if any)

16. No. of acres in lease
640

17. Spacing Unit dedicated to this well
W2W2

18. Distance from proposed location*
to nearest well, drilling, completed, SHL: 526' (Gulf Little. 1)
applied for, on this lease, ft. BHL: 4371' (Gulf Little. 1)

19. Proposed Depth
TVD: 9,243' MD: 14,065'

20. BLM/BIA Bond No. on file
022046443 NMB 001170

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3,218' UNGRADED

22. Approximate date work will start*
04/01/2015

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

Brian Wood

Name (Printed/Typed)

BRIAN WOOD (PHONE: 505 466-8120)

Date

09/21/2014

Title

CONSULTANT

(FAX: 505 466-9682)

Approved by (Signature)

/s/ Chris Walls

Name (Printed/Typed)

Date

OCT 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

Ka
11/06/15

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

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.

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' FSL & 950' FWL, SWSW (M), 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 1H9. API Well No.
30-025-10. Field and Pool or Exploratory Area
WC Avalon Shale 111. 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 recomple 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 recomple 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.

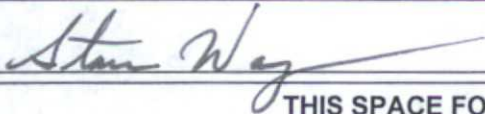
BLM bond number on file is NM 2308.

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/ Chris Walls

FOR FIELD MANAGER

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 1H

SHL 220' FSL & 950' FWL Sec. 20, T. 26 S., R. 33 E.

BHL 250' FNL & 550' FWL Sec. 20, T. 26 S., R. 33 E.

Lea County, NM

HOBBS OCD

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Drilling Program

1. ESTIMATED TOPS

<u>Name</u>	<u>TVD</u>	<u>Content</u>
Quaternary	0'	fresh water
Santa Rosa	90'	brackish water
Rustler	783'	anhydrite
Salado (top of salt)	1,138'	salt, brine
Castile	3,103'	brine
Lamar (base of salt)	4,843'	salt
Bell Canyon	4,883'	brine water
Cherry Canyon	5,763'	oil, gas
Brushy Canyon	7,573'	oil, gas
Bone Spring limestone	9,003'	---
Leonard shale	9,073'	---
Avalon carbonate 1	9,183'	---
Avalon shale 1	9,193'	---
Avalon shale 1 target	9,243'	oil, gas
BHL*	9,243'	---

* MD = 14,065'

2. NOTABLE ZONES

Closest water well (C 02273) is 8,806' to the northeast. Depth to water in that well is 120'.

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

Roadrunner Oil & Gas LLC

DRILL PLAN PAGE 2

Wile E Coyote Federal 26-33-20 1H

SHL 220' FSL & 950' FWL Sec. 20, T. 26 S., R. 33 E.

BHL 250' FNL & 550' FWL 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 rig 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 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 8-3/4" vertical hole will be drilled to the 5,040' KOP. Slant drill to the build section at 8,764' and drill curve to landing point at 9,542'. Drill 8-3/4" lateral section to 14,065' (MD) and 9,223' (TVD).

Roadrunner Oil & Gas LLC

DRILL PLAN PAGE 3

Wile E Coyote Federal 26-33-20 1H

SHL 220' FSL & 950' FWL Sec. 20, T. 26 S., R. 33 E.

BHL 250' FNL & 550' FWL 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'	13.375"	New	54.5	J-55	Butt	3.55	6.13	17.8
12.25"	0' - 4940'	9.625"	New	40	N-80	LTC	1.54	1.89	3.72
8.75"	0' - 14065'	5.5"	New	23	L-80 HCE	DWC/C	3.59	1.44	1.79

4,800'

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 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	460	13.5	1.75	9.16	805	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	965	12.9	1.92	10.16	1852	50	GL

Roadrunner Oil & Gas LLC

DRILL PLAN PAGE 4

Wile E Coyote Federal 26-33-20 1H

SHL 220' FSL & 950' FWL Sec. 20, T. 26 S., R. 33 E.

BHL 250' FNL & 550' FWL 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	300	14.8	1.33	6.32	399	50	4130'
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	1050	11.9	2.38	13.53	2499	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	1510	14.2	1.30	5.87	1963	35	8100'

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'	fresh water spud mud	8.4 - 9.2	28 - 36	no control
875' - 4940'	brine	9.9 - 10.2	28 - 30	no control
4940' - 8764'	cut brine	8.8 - 9.3	28 - 30	no control
8764' - 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 1H

SHL 220' FSL & 950' FWL Sec. 20, T. 26 S., R. 33 E.

BHL 250' FNL & 550' FWL 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 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 4316 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.

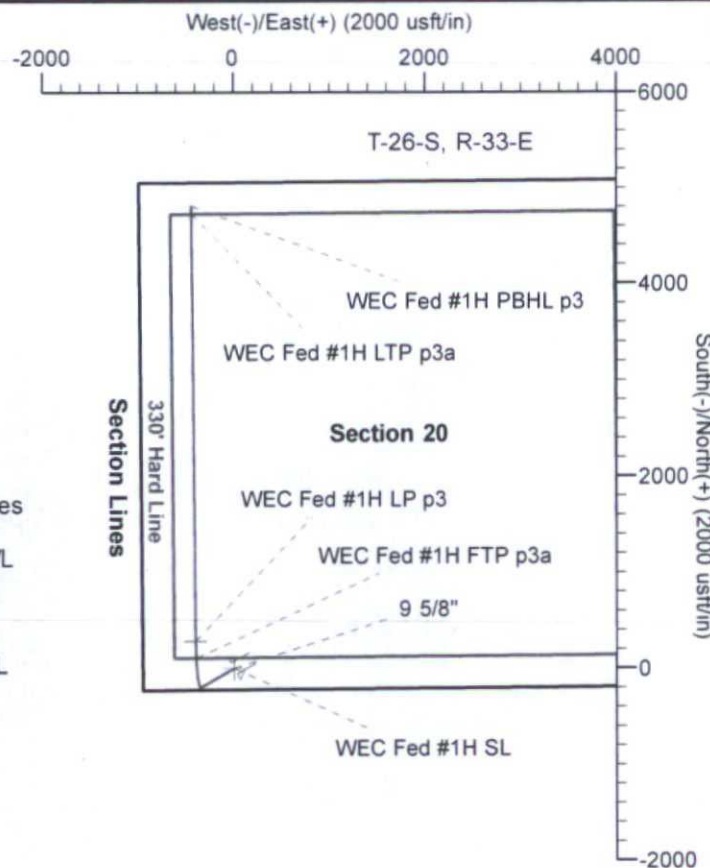
ROADRUNNER OIL & GAS, LLC

Project: Lea County, NM
 Site: Wile E Coyote Federal 26-33-20 1H & 3H
 Well: 1H
 Wellbore: Lateral
 Design: Plan #3b



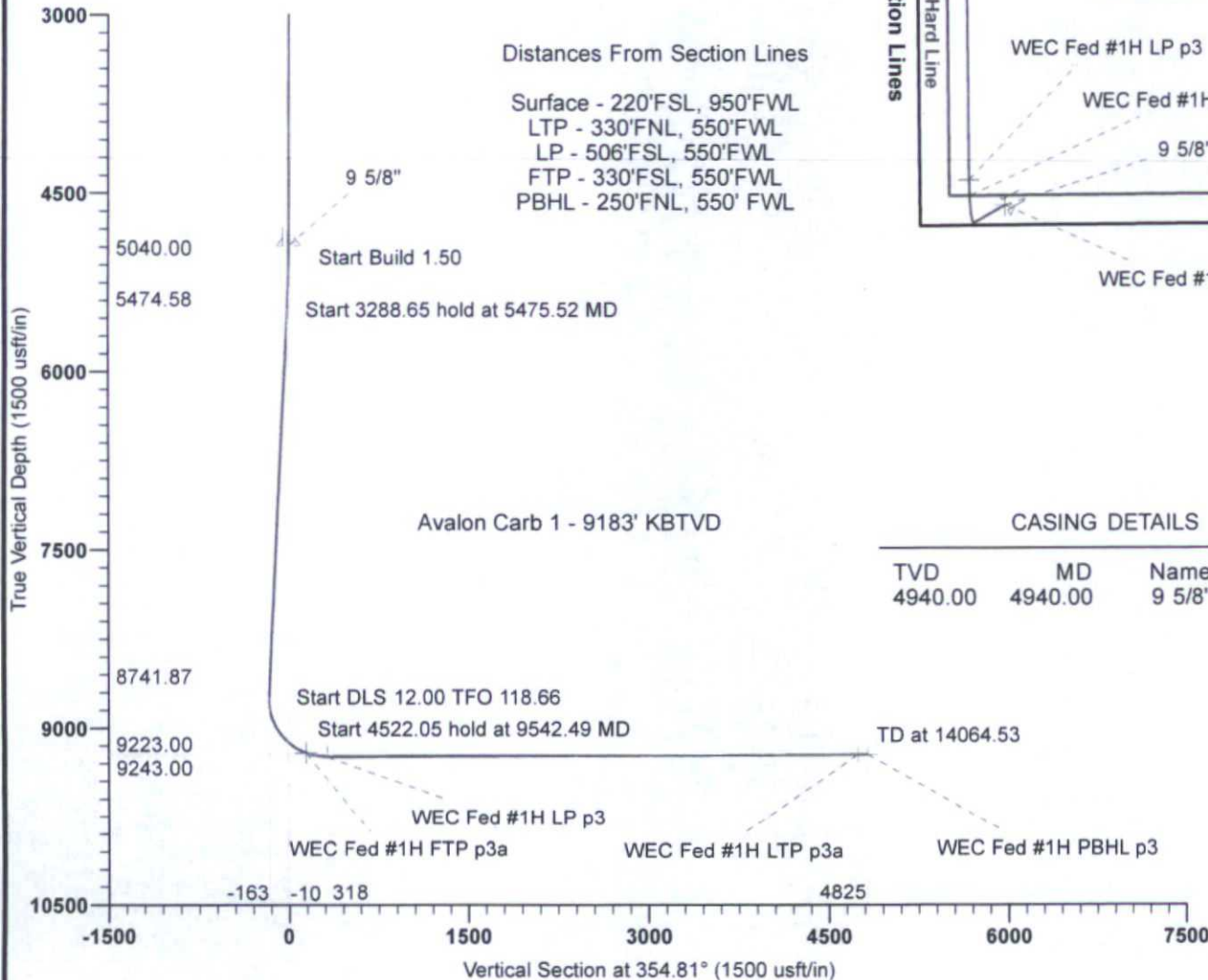
Azimuths to Grid North
 True North: -0.39°
 Magnetic North: 6.82°

Magnetic Field
 Strength: 48210.3snT
 Dip Angle: 59.92°
 Date: 7/10/2014
 Model: IGRF2010



Distances From Section Lines

Surface - 220'FSL, 950'FWL
 LTP - 330'FNL, 550'FWL
 LP - 506'FSL, 550'FWL
 FTP - 330'FSL, 550'FWL
 PBHL - 250'FNL, 550' FWL



Avalon Carb 1 - 9183' KBTVD

CASING DETAILS

TVD	MD	Name	Size
4940.00	4940.00	9 5/8"	9.625

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
WEC Fed #1H SL	0.00	0.00	0.00	372648.17	768688.98	Point
WEC Fed #1H FTP p3a	9210.24	106.94	-397.41	372755.11	768291.57	Point
WEC Fed #1H PBHL p3	9223.00	4805.15	-436.86	377453.32	768252.12	Point
WEC Fed #1H LTP p3a	9223.36	4724.62	-436.24	377372.79	768252.74	Point
WEC Fed #1H LP p3	9243.00	283.28	-402.13	372931.45	768286.85	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	
5040.00	0.00	0.00	5040.00	0.00	0.00	0.00	0.00	0.00	
5475.52	6.53	240.71	5474.58	-12.13	-21.63	1.50	240.71	-10.13	
8764.17	6.53	240.71	8741.87	-195.16	-347.96	0.00	0.00	-162.89	
9542.49	90.25	359.56	9243.00	283.28	-402.13	12.00	118.66	318.49	WEC Fed #1H LP p3
14064.53	90.25	359.56	9223.00	4805.15	-436.86	0.00	0.00	4824.97	WEC Fed #1H PBHL p3

Well Planning Planning Report

Database:	EDM 5000.1 MultiUser PRODSQL1	Local Co-ordinate Reference:	Well 1H - Slot 1H
Company:	ROADRUNNER OIL & GAS, LLC	TVD Reference:	WELL @ 0.00usft (Original Well Elev)
Project:	Lea County, NM	MD Reference:	WELL @ 0.00usft (Original Well Elev)
Site:	Wile E Coyote Federal 26-33-20 1H & 3H	North Reference:	Grid
Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #3b		

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 1H & 3H				
Site Position:		Northing:	372,648.17 usft	Latitude:	32° 1' 20.526 N
From:	Map	Easting:	768,688.98 usft	Longitude:	103° 35' 59.078 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.39

Well	1H - Slot 1H					
Well Position	+N/-S	0.00 usft	Northing:	372,648.17 usft	Latitude:	32° 1' 20.526 N
	+E/-W	0.00 usft	Easting:	768,688.98 usft	Longitude:	103° 35' 59.078 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	0.00 usft

Wellbore	Lateral				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/10/2014	7.21	59.92	48,210

Design	Plan #3b				
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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	354.81

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	
5,040.00	0.00	0.00	5,040.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,475.52	6.53	240.71	5,474.58	-12.13	-21.63	1.50	1.50	0.00	240.71	
8,764.17	6.53	240.71	8,741.87	-195.16	-347.96	0.00	0.00	0.00	0.00	
9,542.49	90.25	359.56	9,243.00	283.28	-402.13	12.00	10.76	15.27	118.66	WEC Fed #1H LP p3
14,064.53	90.25	359.56	9,223.00	4,805.15	-436.86	0.00	0.00	0.00	0.00	WEC Fed #1H PBHL

Well Planning

Planning Report

Database: EDM 5000.1 MultiUser PRODSQL1
 Company: ROADRUNNER OIL & GAS, LLC
 Project: Lea County, NM
 Site: Wile E Coyote Federal 26-33-20 1H & 3H
 Well: 1H
 Wellbore: Lateral
 Design: Plan #3b

Local Co-ordinate Reference: Well 1H - Slot 1H
 TVD Reference: WELL @ 0.00usft (Original Well Elev)
 MD Reference: WELL @ 0.00usft (Original Well Elev)
 North Reference: Grid
 Survey Calculation Method: 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)
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	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,940.00	0.00	0.00	4,940.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,040.00	0.00	0.00	5,040.00	0.00	0.00	0.00	0.00	0.00	0.00

Well Planning

Planning Report

Database:	EDM 5000.1 MultiUser PRODSQL1	Local Co-ordinate Reference:	Well 1H - Slot 1H
Company:	ROADRUNNER OIL & GAS, LLC	TVD Reference:	WELL @ 0.00usft (Original Well Elev)
Project:	Lea County, NM	MD Reference:	WELL @ 0.00usft (Original Well Elev)
Site:	Wile E Coyote Federal 26-33-20 1H & 3H	North Reference:	Grid
Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #3b		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,100.00	0.90	240.71	5,100.00	-0.23	-0.41	-0.19	1.50	1.50	0.00
5,200.00	2.40	240.71	5,199.95	-1.64	-2.92	-1.37	1.50	1.50	0.00
5,300.00	3.90	240.71	5,299.80	-4.33	-7.71	-3.61	1.50	1.50	0.00
5,400.00	5.40	240.71	5,399.47	-8.29	-14.79	-6.92	1.50	1.50	0.00
5,475.52	6.53	240.71	5,474.58	-12.13	-21.63	-10.13	1.50	1.50	0.00
5,500.00	6.53	240.71	5,498.90	-13.50	-24.06	-11.26	0.00	0.00	0.00
5,600.00	6.53	240.71	5,598.25	-19.06	-33.98	-15.91	0.00	0.00	0.00
5,700.00	6.53	240.71	5,697.60	-24.63	-43.91	-20.55	0.00	0.00	0.00
5,800.00	6.53	240.71	5,796.95	-30.19	-53.83	-25.20	0.00	0.00	0.00
5,900.00	6.53	240.71	5,896.30	-35.76	-63.75	-29.84	0.00	0.00	0.00
6,000.00	6.53	240.71	5,995.65	-41.32	-73.68	-34.49	0.00	0.00	0.00
6,100.00	6.53	240.71	6,095.00	-46.89	-83.60	-39.13	0.00	0.00	0.00
6,200.00	6.53	240.71	6,194.35	-52.45	-93.52	-43.78	0.00	0.00	0.00
6,300.00	6.53	240.71	6,293.70	-58.02	-103.44	-48.42	0.00	0.00	0.00
6,400.00	6.53	240.71	6,393.05	-63.58	-113.37	-53.07	0.00	0.00	0.00
6,500.00	6.53	240.71	6,492.41	-69.15	-123.29	-57.71	0.00	0.00	0.00
6,600.00	6.53	240.71	6,591.76	-74.72	-133.21	-62.36	0.00	0.00	0.00
6,700.00	6.53	240.71	6,691.11	-80.28	-143.14	-67.00	0.00	0.00	0.00
6,800.00	6.53	240.71	6,790.46	-85.85	-153.06	-71.65	0.00	0.00	0.00
6,900.00	6.53	240.71	6,889.81	-91.41	-162.98	-76.29	0.00	0.00	0.00
7,000.00	6.53	240.71	6,989.16	-96.98	-172.91	-80.94	0.00	0.00	0.00
7,100.00	6.53	240.71	7,088.51	-102.54	-182.83	-85.58	0.00	0.00	0.00
7,200.00	6.53	240.71	7,187.86	-108.11	-192.75	-90.23	0.00	0.00	0.00
7,300.00	6.53	240.71	7,287.21	-113.67	-202.67	-94.87	0.00	0.00	0.00
7,400.00	6.53	240.71	7,386.56	-119.24	-212.60	-99.52	0.00	0.00	0.00
7,500.00	6.53	240.71	7,485.91	-124.81	-222.52	-104.17	0.00	0.00	0.00
7,600.00	6.53	240.71	7,585.26	-130.37	-232.44	-108.81	0.00	0.00	0.00
7,700.00	6.53	240.71	7,684.61	-135.94	-242.37	-113.46	0.00	0.00	0.00
7,800.00	6.53	240.71	7,783.96	-141.50	-252.29	-118.10	0.00	0.00	0.00
7,900.00	6.53	240.71	7,883.31	-147.07	-262.21	-122.75	0.00	0.00	0.00
8,000.00	6.53	240.71	7,982.67	-152.63	-272.13	-127.39	0.00	0.00	0.00
8,100.00	6.53	240.71	8,082.02	-158.20	-282.06	-132.04	0.00	0.00	0.00
8,200.00	6.53	240.71	8,181.37	-163.76	-291.98	-136.68	0.00	0.00	0.00
8,300.00	6.53	240.71	8,280.72	-169.33	-301.90	-141.33	0.00	0.00	0.00
8,400.00	6.53	240.71	8,380.07	-174.90	-311.83	-145.97	0.00	0.00	0.00
8,500.00	6.53	240.71	8,479.42	-180.46	-321.75	-150.62	0.00	0.00	0.00
8,600.00	6.53	240.71	8,578.77	-186.03	-331.67	-155.26	0.00	0.00	0.00
8,700.00	6.53	240.71	8,678.12	-191.59	-341.60	-159.91	0.00	0.00	0.00
8,764.17	6.53	240.71	8,741.87	-195.16	-347.96	-162.89	0.00	0.00	0.00
8,775.00	6.02	251.66	8,752.64	-195.64	-349.04	-163.27	12.00	-4.75	101.04
8,800.00	5.84	280.96	8,777.51	-195.81	-351.53	-163.21	12.00	-0.69	117.21
8,825.00	7.07	305.58	8,802.36	-194.68	-354.04	-161.85	12.00	4.92	98.49
8,850.00	9.16	321.05	8,827.11	-192.23	-356.54	-159.19	12.00	8.34	61.84
8,875.00	11.65	330.40	8,851.70	-188.49	-359.04	-155.24	12.00	9.95	37.44
8,900.00	14.33	336.41	8,876.06	-183.46	-361.52	-150.01	12.00	10.73	24.01
8,925.00	17.12	340.52	8,900.12	-177.16	-363.99	-143.50	12.00	11.15	16.45
8,950.00	19.96	343.50	8,923.82	-169.59	-366.43	-135.75	12.00	11.39	11.92
8,975.00	22.85	345.76	8,947.09	-160.79	-368.83	-126.77	12.00	11.54	9.03
9,000.00	25.76	347.53	8,969.88	-150.78	-371.20	-116.59	12.00	11.64	7.10
9,025.00	28.69	348.97	8,992.10	-139.59	-373.52	-105.23	12.00	11.71	5.74
9,050.00	31.63	350.16	9,013.72	-127.24	-375.79	-92.72	12.00	11.76	4.76
9,075.00	34.58	351.16	9,034.66	-113.77	-378.00	-79.11	12.00	11.80	4.02
9,100.00	37.53	352.03	9,054.87	-99.21	-380.15	-64.42	12.00	11.83	3.46
9,125.00	40.49	352.79	9,074.29	-83.61	-382.22	-48.70	12.00	11.85	3.03

Well Planning

Planning Report

Database:	EDM 5000.1 MultiUser PRODSQL1	Local Co-ordinate Reference:	Well 1H - Slot 1H
Company:	ROADRUNNER OIL & GAS, LLC	TVD Reference:	WELL @ 0.00usft (Original Well Elev)
Project:	Lea County, NM	MD Reference:	WELL @ 0.00usft (Original Well Elev)
Site:	Wile E Coyote Federal 26-33-20 1H & 3H	North Reference:	Grid
Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #3b		

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)
9,150.00	43.46	353.46	9,092.87	-67.01	-384.22	-31.98	12.00	11.87	2.68
9,175.00	46.43	354.06	9,110.57	-49.46	-386.14	-14.33	12.00	11.88	2.40
9,200.00	49.40	354.60	9,127.32	-31.00	-387.97	4.22	12.00	11.89	2.18
9,225.00	52.38	355.10	9,143.09	-11.68	-389.71	23.62	12.00	11.90	1.99
9,250.00	55.36	355.56	9,157.83	8.44	-391.35	43.81	12.00	11.91	1.84
9,275.00	58.33	355.99	9,171.50	29.31	-392.89	64.73	12.00	11.91	1.71
9,300.00	61.31	356.39	9,184.07	50.87	-394.33	86.34	12.00	11.92	1.60
9,325.00	64.29	356.77	9,195.49	73.07	-395.66	108.56	12.00	11.92	1.51
9,350.00	67.28	357.13	9,205.74	95.83	-396.87	131.34	12.00	11.93	1.44
9,375.00	70.26	357.47	9,214.80	119.11	-397.97	154.62	12.00	11.93	1.38
9,400.00	73.24	357.80	9,222.62	142.83	-398.94	178.33	12.00	11.93	1.33
9,425.00	76.23	358.13	9,229.20	166.93	-399.80	202.41	12.00	11.94	1.29
9,450.00	79.21	358.44	9,234.52	191.34	-400.53	226.79	12.00	11.94	1.26
9,475.00	82.20	358.75	9,238.56	216.00	-401.14	251.40	12.00	11.94	1.23
9,500.00	85.18	359.05	9,241.31	240.84	-401.62	276.19	12.00	11.94	1.21
9,525.00	88.17	359.35	9,242.76	265.80	-401.96	301.07	12.00	11.94	1.20
9,542.49	90.25	359.56	9,243.00	283.28	-402.13	318.49	12.00	11.94	1.20
9,600.00	90.25	359.56	9,242.75	340.79	-402.57	375.81	0.00	0.00	0.00
9,700.00	90.25	359.56	9,242.30	440.79	-403.34	475.47	0.00	0.00	0.00
9,800.00	90.25	359.56	9,241.86	540.78	-404.11	575.12	0.00	0.00	0.00
9,900.00	90.25	359.56	9,241.42	640.78	-404.88	674.78	0.00	0.00	0.00
10,000.00	90.25	359.56	9,240.98	740.77	-405.64	774.43	0.00	0.00	0.00
10,100.00	90.25	359.56	9,240.53	840.77	-406.41	874.09	0.00	0.00	0.00
10,200.00	90.25	359.56	9,240.09	940.77	-407.18	973.74	0.00	0.00	0.00
10,300.00	90.25	359.56	9,239.65	1,040.76	-407.95	1,073.40	0.00	0.00	0.00
10,400.00	90.25	359.56	9,239.21	1,140.76	-408.72	1,173.05	0.00	0.00	0.00
10,500.00	90.25	359.56	9,238.77	1,240.76	-409.48	1,272.71	0.00	0.00	0.00
10,600.00	90.25	359.56	9,238.32	1,340.75	-410.25	1,372.37	0.00	0.00	0.00
10,700.00	90.25	359.56	9,237.88	1,440.75	-411.02	1,472.02	0.00	0.00	0.00
10,800.00	90.25	359.56	9,237.44	1,540.74	-411.79	1,571.68	0.00	0.00	0.00
10,900.00	90.25	359.56	9,237.00	1,640.74	-412.56	1,671.33	0.00	0.00	0.00
11,000.00	90.25	359.56	9,236.55	1,740.74	-413.32	1,770.99	0.00	0.00	0.00
11,100.00	90.25	359.56	9,236.11	1,840.73	-414.09	1,870.64	0.00	0.00	0.00
11,200.00	90.25	359.56	9,235.67	1,940.73	-414.86	1,970.30	0.00	0.00	0.00
11,300.00	90.25	359.56	9,235.23	2,040.72	-415.63	2,069.95	0.00	0.00	0.00
11,400.00	90.25	359.56	9,234.78	2,140.72	-416.40	2,169.61	0.00	0.00	0.00
11,500.00	90.25	359.56	9,234.34	2,240.72	-417.17	2,269.27	0.00	0.00	0.00
11,600.00	90.25	359.56	9,233.90	2,340.71	-417.93	2,368.92	0.00	0.00	0.00
11,700.00	90.25	359.56	9,233.46	2,440.71	-418.70	2,468.58	0.00	0.00	0.00
11,800.00	90.25	359.56	9,233.02	2,540.70	-419.47	2,568.23	0.00	0.00	0.00
11,900.00	90.25	359.56	9,232.57	2,640.70	-420.24	2,667.89	0.00	0.00	0.00
12,000.00	90.25	359.56	9,232.13	2,740.70	-421.01	2,767.54	0.00	0.00	0.00
12,100.00	90.25	359.56	9,231.69	2,840.69	-421.77	2,867.20	0.00	0.00	0.00
12,200.00	90.25	359.56	9,231.25	2,940.69	-422.54	2,966.85	0.00	0.00	0.00
12,300.00	90.25	359.56	9,230.80	3,040.68	-423.31	3,066.51	0.00	0.00	0.00
12,400.00	90.25	359.56	9,230.36	3,140.68	-424.08	3,166.17	0.00	0.00	0.00
12,500.00	90.25	359.56	9,229.92	3,240.68	-424.85	3,265.82	0.00	0.00	0.00
12,600.00	90.25	359.56	9,229.48	3,340.67	-425.61	3,365.48	0.00	0.00	0.00
12,700.00	90.25	359.56	9,229.04	3,440.67	-426.38	3,465.13	0.00	0.00	0.00
12,800.00	90.25	359.56	9,228.59	3,540.66	-427.15	3,564.79	0.00	0.00	0.00
12,900.00	90.25	359.56	9,228.15	3,640.66	-427.92	3,664.44	0.00	0.00	0.00
13,000.00	90.25	359.56	9,227.71	3,740.66	-428.69	3,764.10	0.00	0.00	0.00
13,100.00	90.25	359.56	9,227.27	3,840.65	-429.45	3,863.76	0.00	0.00	0.00
13,200.00	90.25	359.56	9,226.82	3,940.65	-430.22	3,963.41	0.00	0.00	0.00

Well Planning

Planning Report

Database:	EDM 5000.1 MultiUser PRODSQL1	Local Co-ordinate Reference:	Well 1H - Slot 1H
Company:	ROADRUNNER OIL & GAS, LLC	TVD Reference:	WELL @ 0.00usft (Original Well Elev)
Project:	Lea County, NM	MD Reference:	WELL @ 0.00usft (Original Well Elev)
Site:	Wile E Coyote Federal 26-33-20 1H & 3H	North Reference:	Grid
Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #3b		

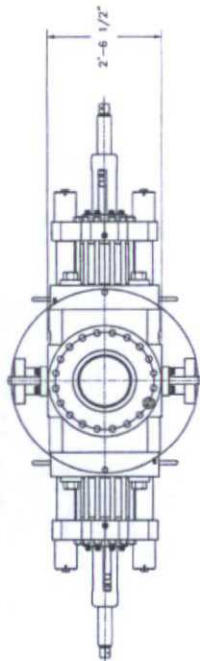
Planned Survey

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)
13,300.00	90.25	359.56	9,226.38	4,040.65	-430.99	4,063.07	0.00	0.00	0.00
13,400.00	90.25	359.56	9,225.94	4,140.64	-431.76	4,162.72	0.00	0.00	0.00
13,500.00	90.25	359.56	9,225.50	4,240.64	-432.53	4,262.38	0.00	0.00	0.00
13,600.00	90.25	359.56	9,225.05	4,340.63	-433.29	4,362.03	0.00	0.00	0.00
13,700.00	90.25	359.56	9,224.61	4,440.63	-434.06	4,461.69	0.00	0.00	0.00
13,800.00	90.25	359.56	9,224.17	4,540.63	-434.83	4,561.34	0.00	0.00	0.00
13,900.00	90.25	359.56	9,223.73	4,640.62	-435.60	4,661.00	0.00	0.00	0.00
14,000.00	90.25	359.56	9,223.29	4,740.62	-436.37	4,760.66	0.00	0.00	0.00
14,064.53	90.25	359.56	9,223.00	4,805.15	-436.86	4,824.97	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
WEC Fed #1H SL - plan hits target center - Point	0.00	0.07	0.00	0.00	0.00	372,648.17	768,688.98	32° 1' 20.526 N	103° 35' 59.078 W
WEC Fed #1H FTP p3a - plan hits target center - Point	0.00	0.08	9,210.24	106.94	-397.41	372,755.11	768,291.57	32° 1' 21.611 N	103° 36' 3.686 W
WEC Fed #1H PBHL p3 - plan hits target center - Point	0.00	0.07	9,223.00	4,805.15	-436.86	377,453.32	768,252.11	32° 2' 8.105 N	103° 36' 3.774 W
WEC Fed #1H LTP p3a - plan misses target center by 0.01usft at 13984.00usft MD (9223.36 TVD, 4724.62 N, -436.24 E) - Point	0.00	0.07	9,223.36	4,724.62	-436.24	377,372.79	768,252.74	32° 2' 7.308 N	103° 36' 3.773 W
WEC Fed #1H LP p3 - plan hits target center - Point	0.00	0.08	9,243.00	283.28	-402.13	372,931.45	768,286.85	32° 1' 23.356 N	103° 36' 3.727 W

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



Technical drawing of a hydraulic control system for a 12' x 12' x 12' concrete pump. The drawing shows a side view of the system with various components labeled with numbers 1 through 9. Dimensions are provided for the overall system and individual components. A note indicates that the drawing is for a 12' x 12' x 12' concrete pump and that a spool is required for the 12' x 12' x 12' concrete pump.

Dimensions:

- Overall width: 12'-7 1/2"
- Section 1: 3'-11 7/8"
- Section 2: 4'-3 7/8"
- Section 3: 1'-8 7/8"
- Section 4: 2'-6 7/8"
- Section 5: 11'-1 5/8" CLOSED
- Section 6: 12'-5 3/8" OPERATING
- Section 7: 16'-5" OPERATING

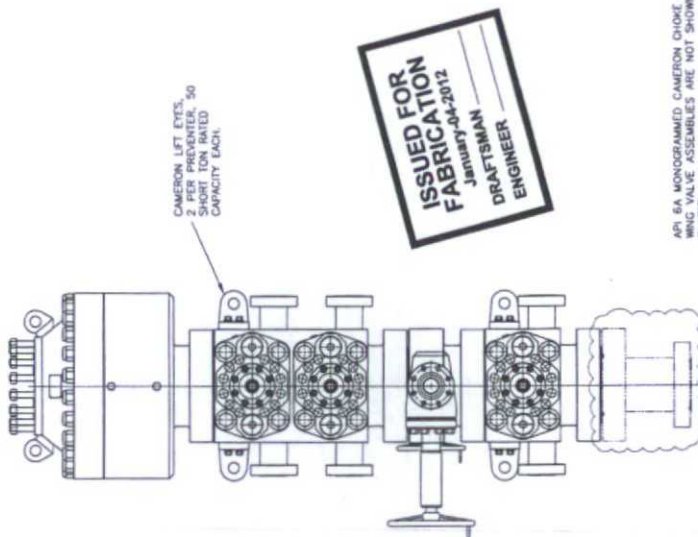
Note: SEE RIG'S DRAWING INDEX FOR SPACER SPOOL IF REQUIRED

SHAFTER BOLTED-COVER SPHERICAL
ANNULAR PREVENTER, (API 16A
MICROGRAMMED, 13 5/8"-5M WP),
10M BOTTOM FLANGE x 5M
STUDDED TOP (WEIGHT = 14,300
LBS WITH SHAFTER API 16A HOT
OIL RESISTANT ACRYLONITRILE
ELEMENT)

CAMERON UM DOUBLE
RAM-TYPE PREVENTER (API 16A
MONOGRAMMED, 13 5/8"-10M
WP), WITH 5" CAMERON PIPE
RAMS (CAMRAM FRONT PACKERS
& TOP SEALS) IN TOP CAVITY
AND CAMERON DS SHEARING
BLIND RAMS IN BOTTOM CAVITY.
BOTTOM FLANGE * STUDDED
TOP (WEIGHT = 21,100 LBS.,
WITH RAMS)

13 5/8"-10M WP
CAMERON DRILLING SPOOL
(API 16A MONOGRAMMED),
STUCCO TOP x FLANGED BOTTOM,
WITH 4 1/16"-10M WP FLANGED OUTLETS
(WEIGHT APPROXIMATELY 6,000 LBS)

CAMERON UM SINGLE RAM—TYPE
PREVENTER (API 16A
MONOGRAMMED, 13 5/8"–10M WP),
WITH 5" CAMERON PIPE RAMS
(CAMRAM FRONT PACKERS & TOP
SEALS) BOTTOM FLANGE x
STUDDED TOP
WEIGHT = 10,900 LBS



ISSUED FOR
FABRICATION
January-04-2012
DRAFTSMAN
ENGINEER

API 6A MONOGRAMMED CAMTRON CHOKE AND KILL
ING VALVE ASSEMBLIES ARE NOT SHOWN FOR
CLARITY



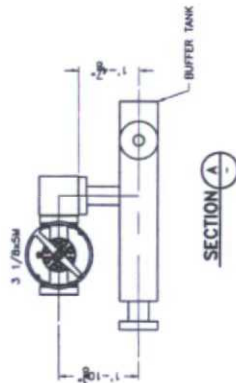
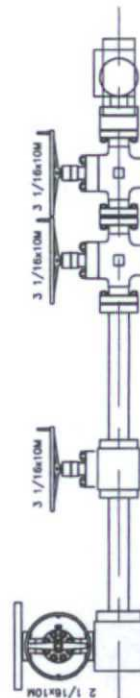
HELMERICH & PAYNE
INTERNATIONAL DRILLING CO.

[illegible]

13 5/8-10M STACK

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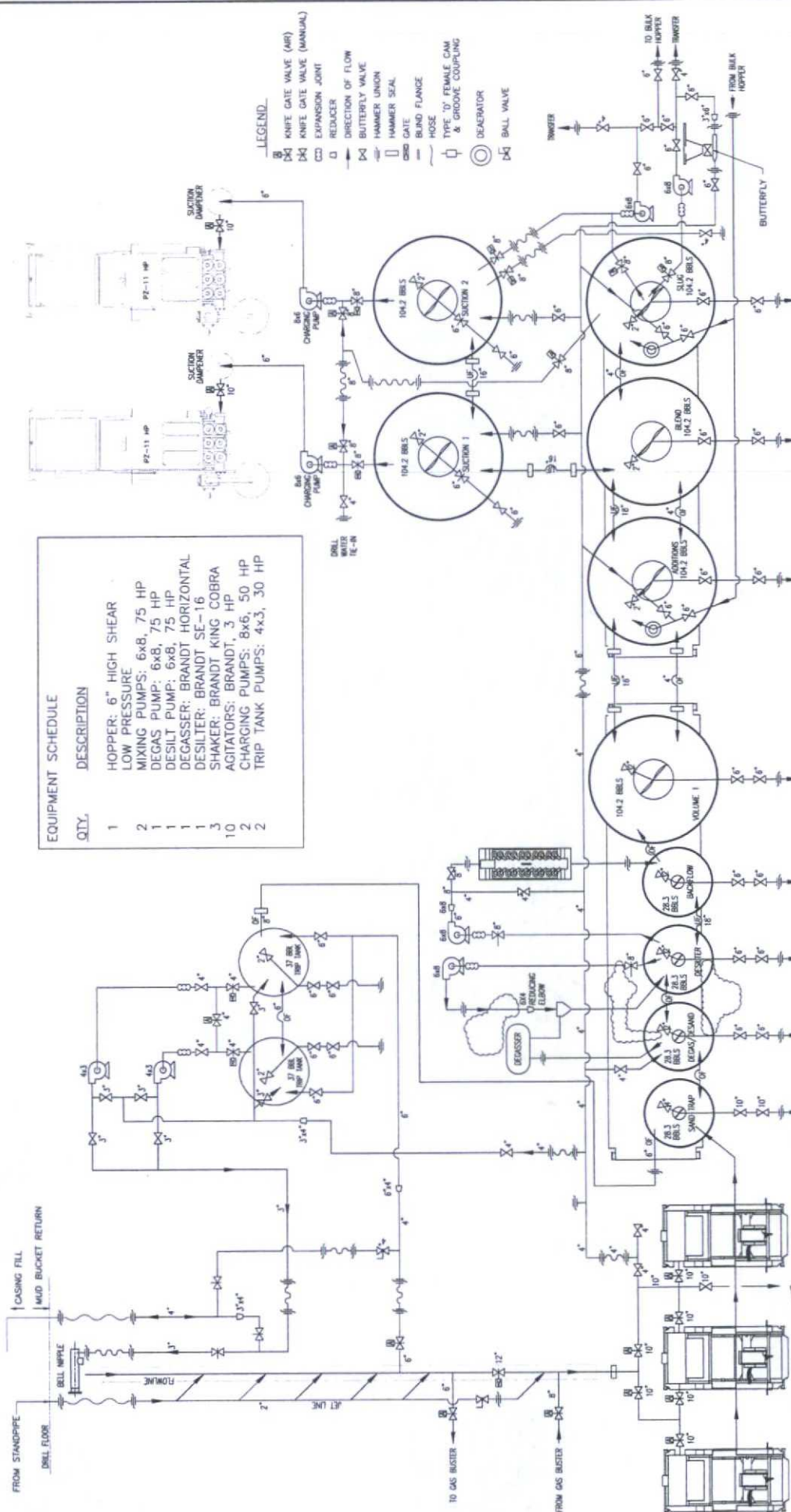
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INTERNATIONAL DRILLING CO.

CHOKE MANIFOLD

[illegible]

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QTY.	DESCRIPTION
1	HOPPER: 6" HIGH SHEAR
2	LOW PRESSURE
2	MIXING PUMPS: 6x8, 75 HP
1	DEGAS PUMP: 6x8, 75 HP
1	DESILT PUMP: 6x8, 75 HP
1	DESILTER: BRANDT SE-16
3	SHAKER: BRANDT KING COBRA
10	AGITATORS: BRANDT, 3 HP
2	CHARGING PUMPS: 8x6, 50 HP
2	TRIP TANK PUMPS: 4x3, 30 HP

- LEGEND
- KNIFE GATE VALVE (AIR)
 - KNIFE GATE VALVE (MANUAL)
 - EXPANSION JOINT
 - REDUCER
 - DIRECTION OF FLOW
 - BUTTERFLY VALVE
 - HAMMER UNION
 - HAMMER SEAL
 - KNIFE GATE
 - BLIND FLANGE
 - HOSE
 - TYPE 'D' FEMALE CAM & GROOVE COUPLING
 - DEAERATOR
 - BALL VALVE

HELMERICH & PAYNE
INTERNATIONAL DRILLING CO.

F3 LOW PRESSURE 738 BBL
MUD SYSTEM SCHEMATIC

PROJECT: F3-113
DRAWN: MNL
DATE: 05-06-02
SHEET: 1 OF 2

REV	DATE	DESCRIPTION	BY
1	5-07-12	ENGINEERING APPROVAL	JBC
2	12/15/11	UPDATED SCHEMATIC	CC
3	05-06-09	CORRECTED TRIP TANK PIPING FLOW	CC
4	05-06-09	ADDED WIRE TO 3" BELL WIRE TYPE WIRE ORBIT	MNL
5	2/9/12	UPDATED SCHEMATIC	CC
6	5-07-12	UPDATES TO MAKE: ADDED BALL VALVE BELOW	JBC

ACTIVE CAPACITY

PROCESS	113.2 BBLs
VOLUME	104.2 BBLs
ADDITIONS	104.2 BBLs
BLENDING	104.2 BBLs
SUGGESTION (2)	208.4 BBLs
SLUG	104.2 BBLs
TOTAL	738.4 BBLs

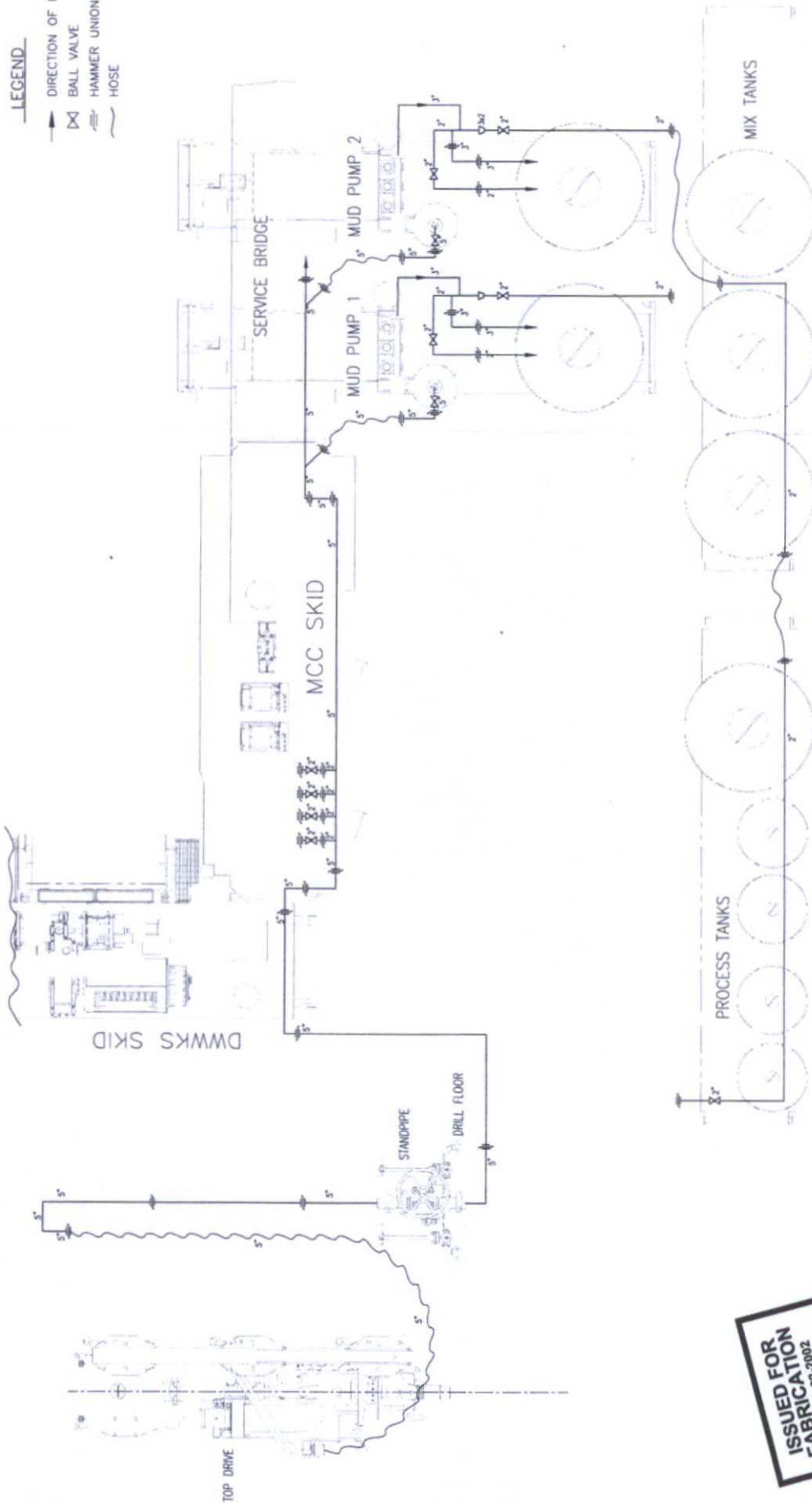
NOTE:
VOLUMES SHOWN ARE BASED ON MUD LEVEL
5" BELOW TANK TOP.
TANK VOLUME CHANGE VS MUD HEIGHT CHANGE
100 BBL TANKS = 1.4 BBL/INCH
27 BBL TANKS = 0.4 BBL/INCH

ISSUED FOR FABRICATION
JUN-06-2012
DRAFTSMAN
ENGINEER

PROPRIETARY
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LEGEND

→ DIRECTION OF FLOW
 X BALL VALVE
 H HAMMER UNION
 — HOSE



ISSUED FOR FABRICATION
 August-22-2002
 DRAFTSMAN
 ENGINEER

HELMEIRICH & PAYNE
 INTERNATIONAL DRILLING CO.

TITLE
 HIGH PRESSURE MUD SYSTEM SCHEMATIC

CUSTOMER H&P
PROJECT FlatRig3
DRAWN MBL
DATE 05-06-02
SCALE 1 OF 1
SHEET 1 OF 1
REV A

NOTE:
 1) SYSTEM WORKING PRESSURE 5000 PSI

PROPRIETARY

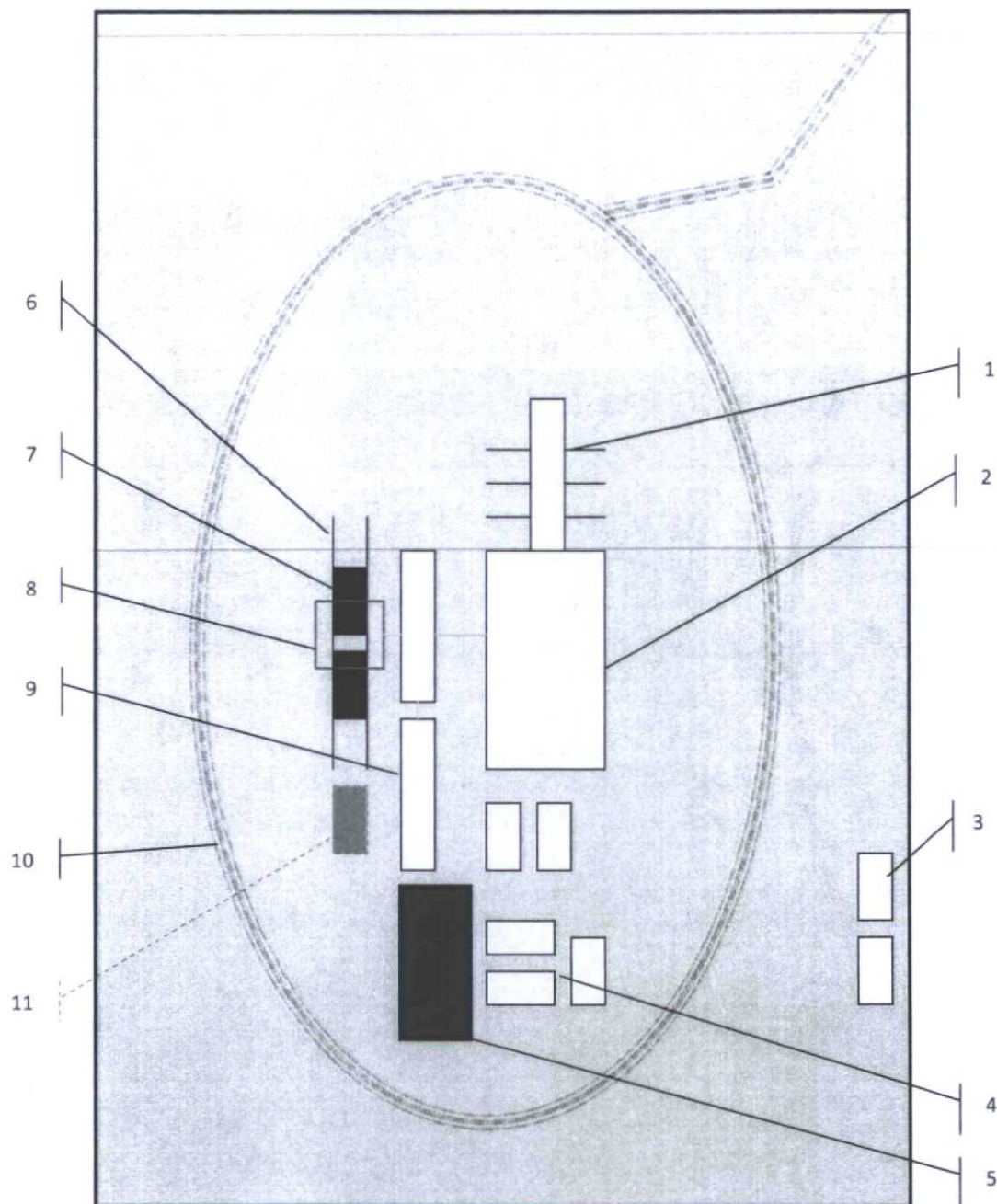
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QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 368	
PURCHASER: ContiTech Oil & Marine Corp.			P.O. N°: 4500398355		
CONTITECH RUBBER order N°: 538079		HOSE TYPE: 3" ID Choke and Kill Hose			
HOSE SERIAL N°: 67085		NOMINAL / ACTUAL LENGTH: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

PERMITS WEST, INC.

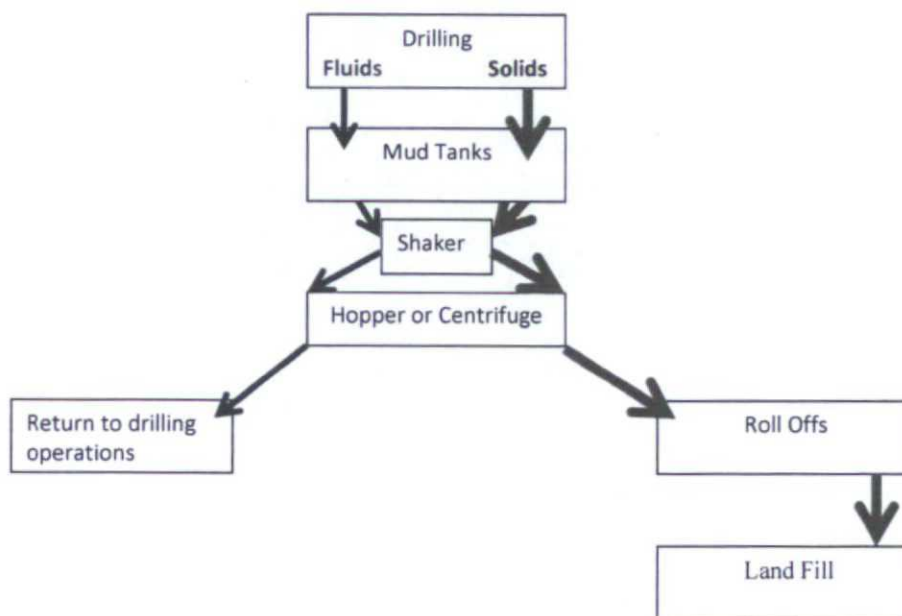
PROVIDING PERMITS for LAND USERS

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 1H
rig diagram

NORTH 
1" = 75'

