

Form 3160-3
(March 2012)

OCD Hobbs
HOBBS OCD

MAY 12 2015

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. SHL: NMLC 069515 BHL: EO66220006	
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 CONOCOPHILLIPS COMPANY		7. If Unit or CA Agreement, Name and No. N/A	
3a. Address 600 N. DAIRY ASHFORD ROAD HOUSTON, TX 77079		8. Lease Name and Well No. WAR HAMMER 25 FED. COM W2 10H	
3b. Phone No. (include area code) 281 206-5282		9. API Well No. 30-025- 42561	
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 283' FNL & 1650' FEL 25-26S-32E At proposed prod. zone 330' FSL & 1650' FEL 36-26S-32E		10. Field and Pool, or Exploratory WC-025 G-09 52632 BSA; WC	
14. Distance in miles and direction from nearest town or post office* 22 AIR MILES NE OF ORLA, TX & 25 AIR MILES SW OF JAL, NM		11. Sec., T. R. M. or Blk. and Survey or Area NWNE 25-26S-32E	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) SHL: 283' BHL: 330'		16. No. of acres in lease NMLC-069515: 1,080.00 EO66220006: 259.76	
17. Spacing Unit dedicated to this well W2E2 SEC. 25 and NWNE & LOT 2 SEC. 36 = 224.96 ACRES		18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. SHL: 33' (9H, 11H) BHL: 294' (NEMU 55)	
19. Proposed Depth TVD: 12,744' MD: 19,531		20. BLM/BIA Bond No. on file ES0085	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3,134' UNGRADED		22. Approximate date work will start* 01/21/2015	
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 <i>Kristina Mickens</i>	Name (Printed/Typed) KRISTINA MICKENS	Date 07/28/2014
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Title
SENIOR REGULATORY SPECIALIST

Approved by (Signature)

Steve Caffey

Name (Printed/Typed)

Office

CARLSBAD FIELD OFFICE

DATE
MAY - 1 2015

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

KZ
05/12/15

2m

Approval Subject to General Requirements
& Special Stipulations Attached

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

MAY 13 2015

Drilling Program
ConocoPhillips Company
 War Hammer 25 Federal COM W2 10H
 283' FNL 1650' FEL (SHL)
 Sec 25-T26S-R32E
 330' FSL 1650' FEL (BHL)
 Sec 36-T26S-R32E
 Lea County, New Mexico

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1. Estimated tops of geological formations:

Geologic Formation at surface: Quaternary

Formation	TVD (ft)
Base Fresh Water	300
Rustler	600
Top Salt	1050
Base Salt	4689
* Cherry Canyon	5671
* Brushy Canyon	7368
* Bone Spring Carb	8865
* Avalon	9071
* 1st Bone Spring	9758
* 2nd Bone Spring	10141
* 3rd Bone Spring	10654
* Wolfcamp	11835

2. Estimated depth/thickness of freshwater and/or hydrocarbons:

Water:

Fresh water is anticipated above the Rustler at 300' and will be protected by surface casing at 950' and cemented to surface.

Hydrocarbons:

Oil and gas are anticipated in the formations annotated above (*). These zones will be isolated as necessary.

3. Pressure Control Equipment:

*Please see attached BOPE and Choke Manifold Schematic for more detail.

A 13-5/8" BOP system will be installed and tested prior to drilling out of the surface casing shoe. The BOP system will be utilized to drill the intermediate and production hole sections, and will be tested per BLM Onshore Oil & Gas Order No. 2 per each hole section specified in the final column of the table in section four.

Pressure tests will be conducted at the initial installation of the BOPE and again if needed 30 days from the initial test as per BLM Onshore Oil and Gas Order No. 2. BOPE controls will be installed prior to drilling under the surface casing and will be used until the completion of drilling operations. The intermediate 1 and intermediate 2 string will be tested per 5M working system requirements. The production interval will be tested per 10M working system requirements.

ConocoPhillips Company requests a variance to use a flexible line between the BOP and the choke. The testing and manufacturing specifications for this equipment is attached. The line will be kept as straight as possible with minimum turns.

4. Proposed Casing Program

*All tubulars used for this design will be new.

Hole Size (in)	Casing (in)	Wt/Ft	Grade	Connection	Depth (ft)	Depth (ftTVD)	Depth (ftMD)	BOPE System
17 1/2	13 3/8	54.5	J-55	BTC	0-950	950	950	N/A
12 1/4	9 5/8	40.0	L-80	BTC	0-4825	4825	4825	5M
8 3/4	7 5/8	33.7	P-110	Wedge 523	0-12150	12144	12150	5M
6 5/8	5	21.4	P-110	BTC	0-11650	11645	11650	10M
6 5/8	4 1/2	15.1	P-110	BTC	11650-19506	12744	19506	10M

(19,531)

Drilling Program
ConocoPhillips Company
War Hammer 25 Federal COM W2 10H
283' FNL 1650' FEL (SHL)
Sec 25-T26S-R32E
330' FSL 1650' FEL (BHL)
Sec 36-T26S-R32E
Lea County, New Mexico

Minimum casing design factors: Burst 1.0, Collapse:1.125, Tensile Strength 1.6 dry / 1.8 buoyant

Hole Size (in)	Casing (in)	Burst	Collapse	Tension	Thread & Cplg. OD (in)	Minimum Clearance (in)
17 1/2	13 3/8	6.07	2.51	20.39	14.375	1.5625
12 1/4	9 5/8	2.18	1.17	5.84	10.625	0.8125
8 3/4	7 5/8	1.85	1.34	3.11	7.775	0.4875
6 5/8	5	1.80	2.32	3.33	5.563	0.5310
6 5/8	4 1/2	1.74	1.73	3.27	5.000	0.8125

5. Proposed Cementing Program

		Volume (sx)	Type	Weight (ppg)	Yield (ft3/sx)	Water (Gal/sx)	Excess	Cement Top
Surface	Lead	530	Class C	13.5	1.73	9.14	100%	Surface
	Tail	310	Class C	14.8	1.35	6.39	100%	650ft
Additives (BWOB): 4% Extender, 2% CaCl2, 0.125 lb/sx LCM, 0.2% Anti-Foam								
Intermediate 1	Lead	1430	Class C	12.9	1.97	10.88	100%	Surface
	Tail	380	Class C	14.8	1.35	6.19	100%	4325ft
Additives (BWOB): 4% Extender, 2% CaCl2, 0.125 lb/sx LCM, 0.2% Anti-Foam								
Intermediate 2	Lead	430	Tuned Light	9.5	3.45	14.38	100%	4325ft
	Tail	140	Class C	13.2	1.61	8.20	100%	11650ft
Additives (BWOB): 0.4% Dispersant, 1 lb/sx Salt, 0.1% Retarder, 0.5% Fluid Loss, 3 lb/sx LCM								
Production	Lead							
	Tail	600	Class H	15.0	2.61	6.00	30%	11650ft
Additives (BWOB): 0.4% Retarder, 0.2% Anti-foam, 0.7 Anti-gelling, 0.4% Fluid Loss, 2% Expanding Agent, 5.0% Silica								

6. Proposed Fluids Program

Depth (ft)	Type	Mud Weight (ppg)	Viscosity	Fluid Loss
0 to 950	Spud Mud	8.4 - 9.3	32-36	NC
950 to 4825	Brine	9.3 - 10.5	28-30	≤5
4825 to 12150	Cut Brine	8.6 - 9.1	30-40	≤5
12150 to 19531	Oil Based Mud	12.0 - 14.0	30-40	≤5

Sufficient fluid volume, weight material, and additives will be available onsite at all times. Visual and electronic mud monitoring equipment will be in place to indicate gain or loss.

7. Formation Evaluation Program

Samples: Dry samples taken 30' from intermediate casing point to TD. GC Tracers KOP to TD.
Logging: GR/Neutron from base salt to surface. GR from 200' above KOP to TD. Shuttle log in the lateral.

8. Anticipated Wellbore Conditions

	Value	Comments
Bottom Hole Pressure (psi)	7137	Assumes 0.78psi/ft - 0.22psi/ft Partial Evacuation
Bottom Hole Temperature (°F)	199	Assumes 0.01deg/100ft
Abnormal Pressure / Potential Hazards	Losses below Delaware will be mitigated with lost circulation material. Potential overpressure below the top of Wolfcamp will be mitigated with mud weight. If H2S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. All personnel will be familiar with all aspects of safe operation being used to drill this well.	

Drilling Program
ConocoPhillips Company
War Hammer 25 Federal COM W2 10H
283' FNL 1650' FEL (SHL)
Sec 25-T26S-R32E
330' FSL 1650' FEL (BHL)
Sec 36-T26S-R32E
Lea County, New Mexico

9. Directional Plan:

Kick off Point (ft)	Landing TVD (ft)	Landing MD (ft)	Total Measured Depth (ft)
12174	12744	13074	19531

*ConocoPhillips proposes to drill a vertical wellbore to kick off point and then drill horizontally to TD. Please see the attached directional plan for more detail.

10. Spudder Rig and Skid Operations.

The reasons for using the spudder rig to drill and pre-set surface casing are: Time & Cost Saving.

The "Pinnergy #1" Rig will be used to drill the surface hole and pre-set surface casing on all of the wells in the same pad. Once each surface hole section has been drilled, it will be cased and cemented according to all applicable rules and regulations (Onshore Orders). The wellhead will be nipped up and tested as soon as 13-3/8" surface casing is cut off after the applicable WOC time has been reached. A blind flange of the same pressure rating as the wellhead will be utilized to seal the wellbore on all casing strings. Pressure will be monitored via wing valves on each wellhead section and a means for intervention will be maintained while the drilling rig is not over the well. Spudder rig operation is expected to take 7-10 days for a quad pad and 4-6 days for a dual pad. The BLM will be contacted / notified 24 hours prior to commencing spudder rig operations.

Drilling operation will start with a big Drilling Rig (H&P Flex 3 rig type) and an approved BOP stack will be nipped up and tested on the wellhead before drilling operations resumes on each well. The rig will skid between the wells until each well's section has been drilled as planned (see "Skid-Batch Drilling Operations" Attachment). The BLM will be contacted / notified 24 hours before the big rig moves back on the location.

Once "Spudder Rig" has left the location, The "big Drilling Rig" will be on location within 90 days to drill each well in the Pad as batch drilling operations.

SKID / BATCH DRILLING OPERATIONS – “QUAD PAD”

SKID / BATCH DRILLING OPERATION PLAN FOR “QUAD PAD”:

1. ALL SURFACE CASINGS PRE-SET (Pre-set with “Spudder Rig”).
 2. WELL 1 / WolfCamp 3. 9-5/8” CASING – WBM.
 3. WELL 2 / WolfCamp 2. 9-5/8” CASING – WBM.
 4. WELL 3 / WolfCamp 1. 9-5/8” CASING – WBM.
 5. WELL 4 / BS 3rd Carb. 9-5/8” CASING – WBM.
 6. WELL 4 / BS 3rd Carb. 5-1/2” CASING – WBM.
 7. WELL 3 / WolfCamp 1. 7-5/8” CASING – WBM.
 8. WELL 2 / WolfCamp 2. 7-5/8” CASING – WBM.
 9. WELL 1 / WolfCamp 3. 7-5/8” CASING – WBM.
 10. WELL 1 / WolfCamp 3. 5”x4-1/2” CASING – OBM.
 11. WELL 2 / WolfCamp 2. 5”x4-1/2” CASING – OBM.
 12. WELL 1 / WolfCamp 1. 5”x4-1/2” CASING – OBM.
 13. RIG RELEASE.
- “INTERMEDIATE 1” BATCH
- “INTERMEDIATE 2” BATCH
- “PRODUCTION” BATCH

March 05 2014



Size: 7.625 in.
Wall: 0.430 in.
Weight: 33.70 lbs/ft
Grade: P110
Min. Wall Thickness: 87.5 %

Connection: Wedge 523™
Casing/Tubing: CAS

PIPE BODY DATA			
GEOMETRY			
Nominal OD	7.625 in.	Nominal Weight	33.70 lbs/ft
		Standard Drift Diameter	6.640 in.
Nominal ID	6.765 in.	Wall Thickness	0.430 in.
		Special Drift Diameter	N/A
Plain End Weight	33.07 lbs/ft		
PERFORMANCE			
Body Yield Strength	1069 x 1000 lbs	Internal Yield	10860 psi
		SMYS	110000 psi
Collapse	7870 psi		
WEDGE 523™ CONNECTION DATA			
GEOMETRY			
Connection OD	7.775 in.	Connection ID	6.675 in.
		Make-Up Loss	4.060 in.
Critical Section Area	7.057 sq. in.	Threads per in.	3.06
PERFORMANCE			
Tension Efficiency	72.6 %	Joint Yield Strength	776 x 1000 lbs
		Internal Pressure Capacity	10860 psi
Compression Strength	881 x 1000 lbs	Compression Efficiency	82.4 %
		Bending	48°/100 ft
External Pressure Capacity	7870 psi		
MAKE-UP TORQUES			
Minimum	9900 ft-lbs	Target	11900 ft-lbs
		Maximum (L)	17300 ft-lbs
OPERATIONAL LIMIT TORQUES			
Operating Torque	42000 ft-lbs	Yield Torque	63000 ft-lbs
BLANKING DIMENSIONS			
Blanking Dimensions			

* If you need to use torque values that are higher than the maximum indicated, please contact a local Tenaris technical sales representative.

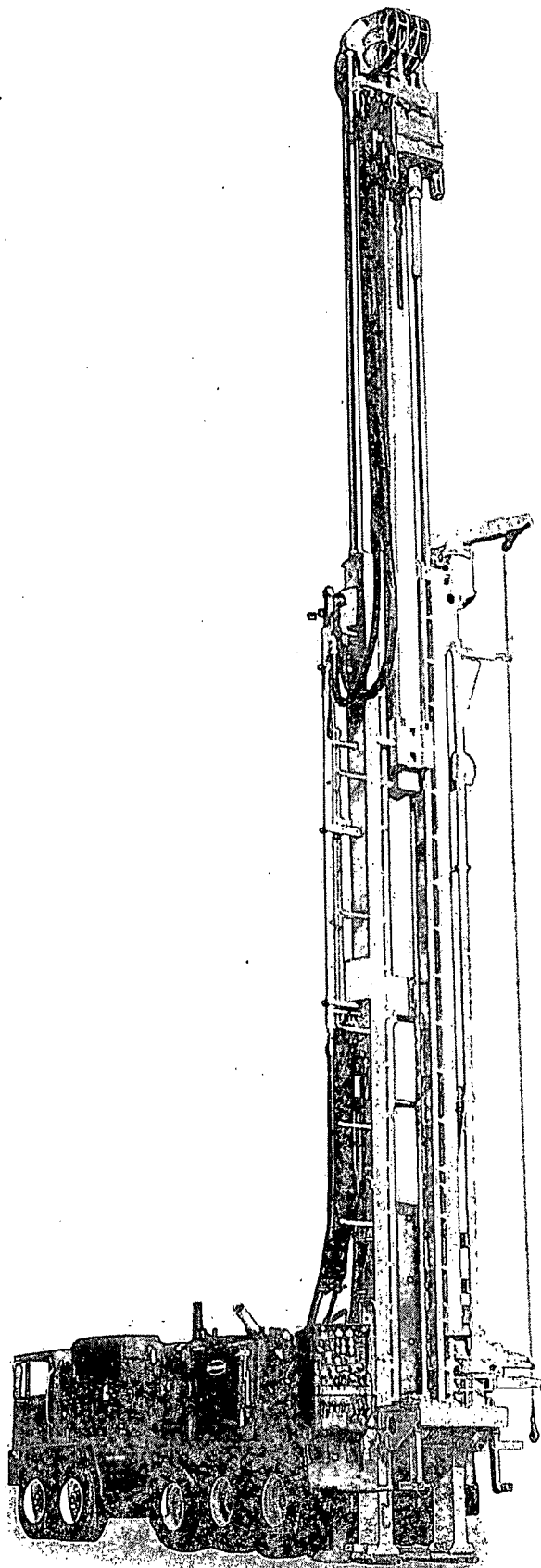


T130XD

ROTADRILL

A heavy duty, heavy hoist carrier mounted drill rig. The T130XD utilizes innovative Telemast technology to achieve Range III pipe capability in a compact over the road package.

- Equipped with Schramm-Telemast
- 50' head travel handles Range III casing
- 43' transport length with less than 6' overhang
- 130,000 lbs hoist
- No sub-structure required
- Mast slides to clear BOP



CARRIER MOUNTED RIG EQUIPPED WITH TELEMAST

T130XD ROTADRILL SPECIFICATIONS

Engine

Detroit Diesel DDC/MTU 12V-2000TA DDEC
760 bhp (567 kw) @ 1800 rpm

Standard Compressor

Variable volume two-stage, oil flooded
rotary screw
1350 cfm @ 350 psi (38.0 cu. m/min @ 24.1 bar),
up to 1150 cfm @ 500 psi (32.6 cu. m/min @
35.5 bar)

Cooling

Three core, side by side type
130°F (54.4°C) ambient design temp.

Dimensions

OA length, transport - 42' 9" (13 m)
OA width - 8' 6" (2.6 m)
OA height, transport - 13' 6" (4.1 m)
Weight std. rig - 92,000 lb (41,723 kg)

Carrier

CCC 8x4 Carrier
Cat C-13, 410 hp @ 2100 rpm engine
44,000 lb (19,955 kg) front axles
21,500 lb (9,750 kg) pusher axle
52,000 lb (23,587 kg) rear axles
117,500 lb (53,298 kg) GVWR

Top Head Rotation

Ductile iron, single reduction oil bath gearbox
with two disc valve type hydraulic motors.
Infinitely variable rotation speed.
3.5:1 Reduction Gear
3" diameter (76.2 mm) spindle thru hole
0-143 rpm, infinitely variable
106,600 in-lb (12,045 N·m) torque

Feed System

Top head is driven by hydraulic traverse
cylinders through special wire rope and large
diameter Nylatron sheaves. As top head is raised,
the inner mast section extends by a ratio of 1:2
until it reaches its fully extended position at 50'
of clear head travel.

42' 9" (13 m) OA height (retracted)
69' 9" (21.65 m) OA height (extended)
50' (15.24 m) top head travel
130,000 lb (59,090 kg) pullup
8 fpm (2.44 mpm) pullup speed-slow feed
125 fpm (38.1 mpm) pullup speed-rapid feed
32,000 lb (14,545 kg) pulldown capacity
26 fpm (7.92 mpm) pulldown speed-slow feed
270 fpm (82.3 mpm) pulldown speed-rapid feed
52' 10" (16.1 m) working clearance mast spindle
to table (sub removed)
48' 10" (14.9 m) working clearance mast sub to
table

Drill Pipe & Casing

30" x 4-1/2" OD x 2-7/8" IF breakout style drill pipe,
range III casing
28" (711 mm) max. diameter through slipbox

Mast

Telescoping construction permits long head trav-
el and working height, yet short OA length in
transport position.

32" (813 mm) cylinder operated slide
Free-standing mast
hydraulically operated adjustable mast feet
hydraulically retracted slip box
20" (508 mm) table opening w/o slips

Winch

Planetary with spring applied hydraulic
release brake
9,600 lb (4,354 kg) bare drum line pull
151 fpm (46 mpm) bare drum line speed

Hydraulic System

Open loop load sensing system
7 micron filtration
200 gallon (760 l) system capacity

Water Injection System

15 gpm (95 lpm) water pump
Electric foam pump

Outriggers

Front - (1) 5" bore x 41" stroke
(127 mm x 1.4 m)
Rear - (2) 5" bore x 41" stroke
(127 mm x 1.4 m)

Tool Lubricator

Positive displacement, air pump operated
piston type pump variable to 5.0 gph
(18.9 lph)

Lighting & Electrical System - 24 Volt

Mast - (4) 60 watt floodlights
Control Panel - (2) 60 watt gauge floodlights
Work - (3) 70 watt halogen

Accessories

Pipe handling sling, 60" breakout wrench,
and 50 hour maintenance kit.

Optional Equipment

Many modifications are available including:
Third driving axle
Reverse circulation package
Tilt-out top head
High capacity top head
Single pipe loading arm
Auxiliary winch controls
Auxiliary air supply

These specifications are based on theoretical calculations and industry standards. Performance will vary according to actual drilling conditions. Schramm, Inc. continuously improves its products and reserves the right to change specifications, design, prices and terms at any time, without notification or obligation. These specifications do not extend any warranty, expressed or implied, nor do they or Schramm, Inc. make or imply any representation of the machine's merchantability or fitness for a particular purpose.



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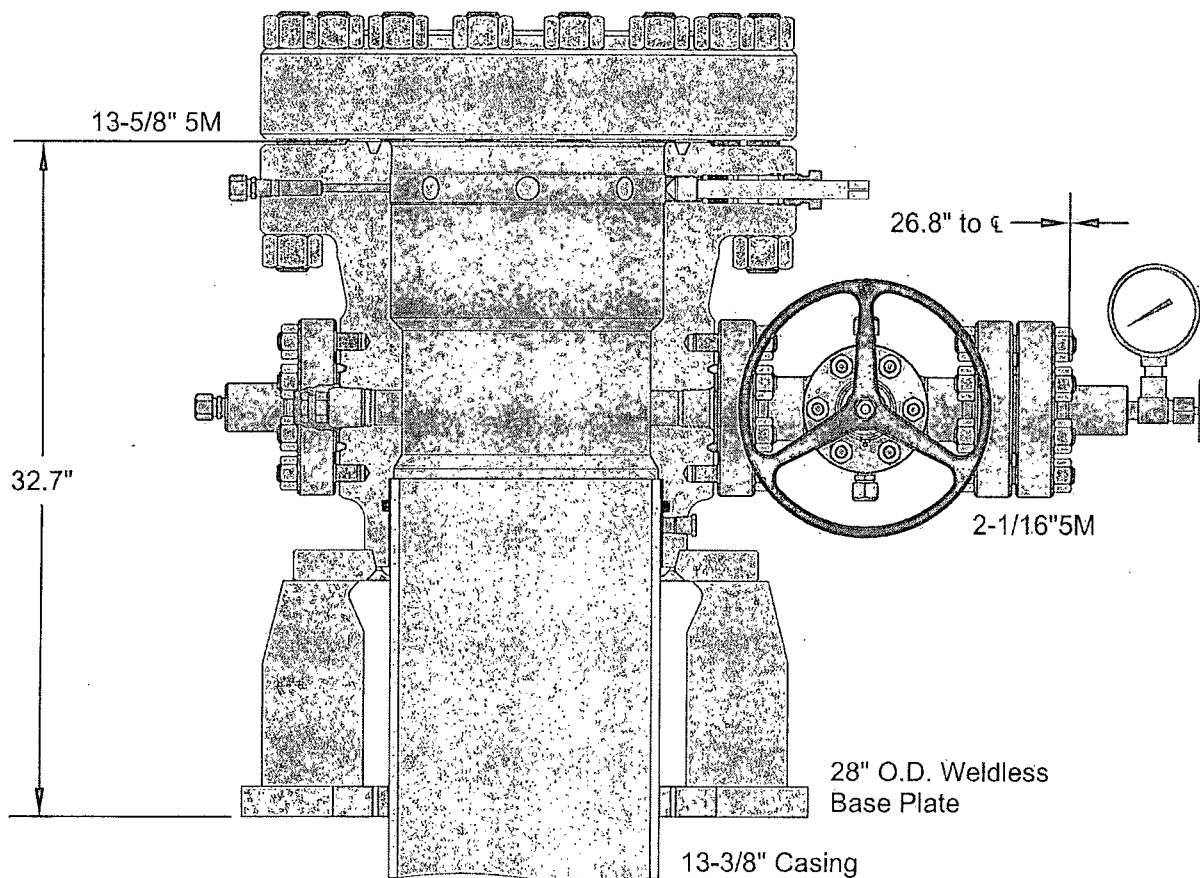
Fax: 610-696-6950

E-mail: schramm@schramm-inc.com

www.schramm-inc.com



GE Oil & Gas



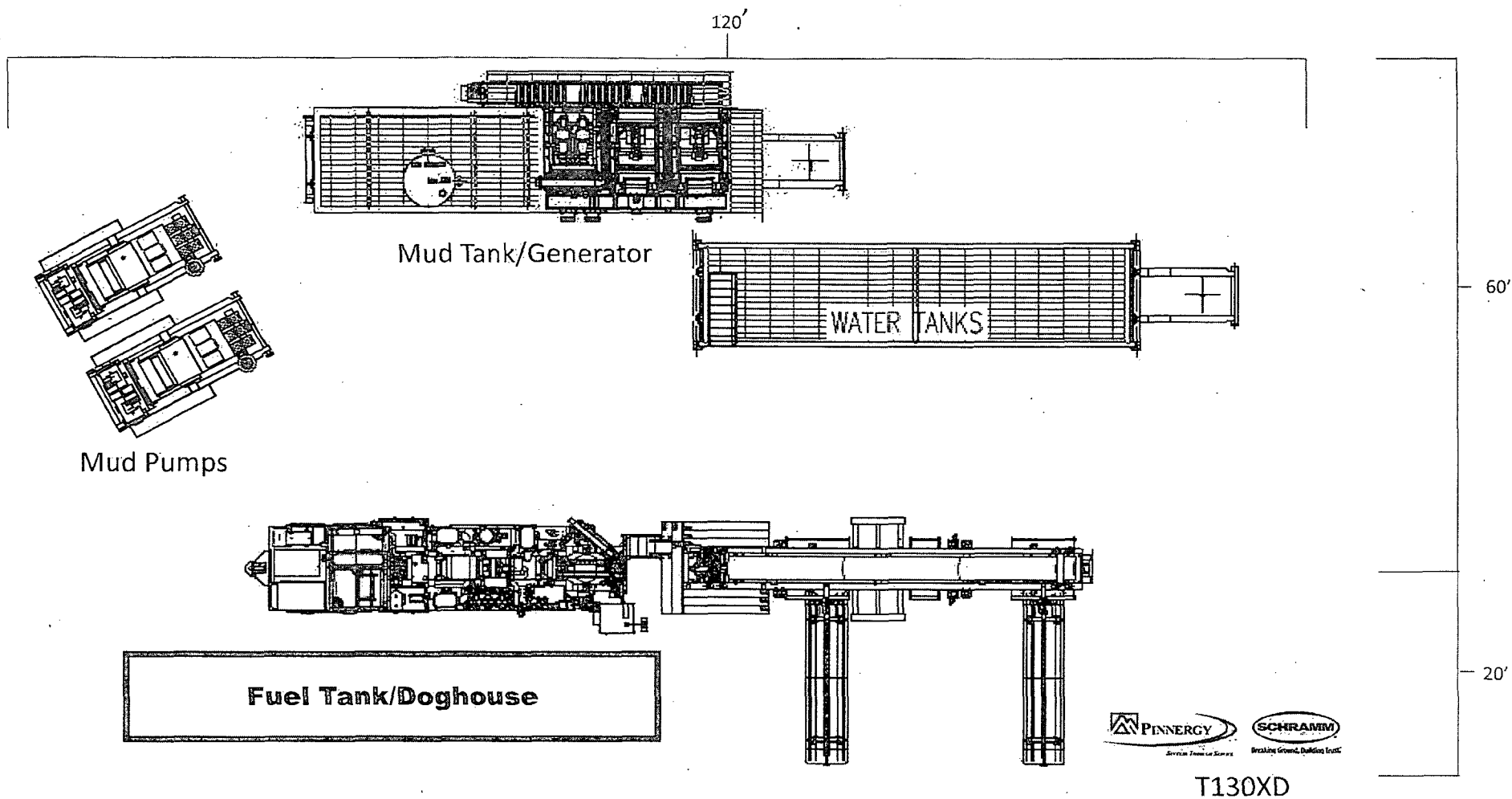
ALL DIMENSIONS ARE APPROXIMATE

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CONOCOPHILLIPS
SPUDDER RIG

HSG,WG,SH2-LWR,13-5/8 5M X 13-3/8 SOW,W/2 2-1/16 5M FP
BASEPLATE,WELDLESS,28 OD
FLANGE,BLIND, 13-5/8 5M

DRAWN	VJK	19AUG14
APPRV	KN	16AUG14
FOR REFERENCE ONLY		
DRAWING NO.		PE00624



"Pinnergy #1" Spudder Rig Layout



ConocoPhillips

Lea County, NM
War Hammer 25 Fed Com
W2 10H

10H

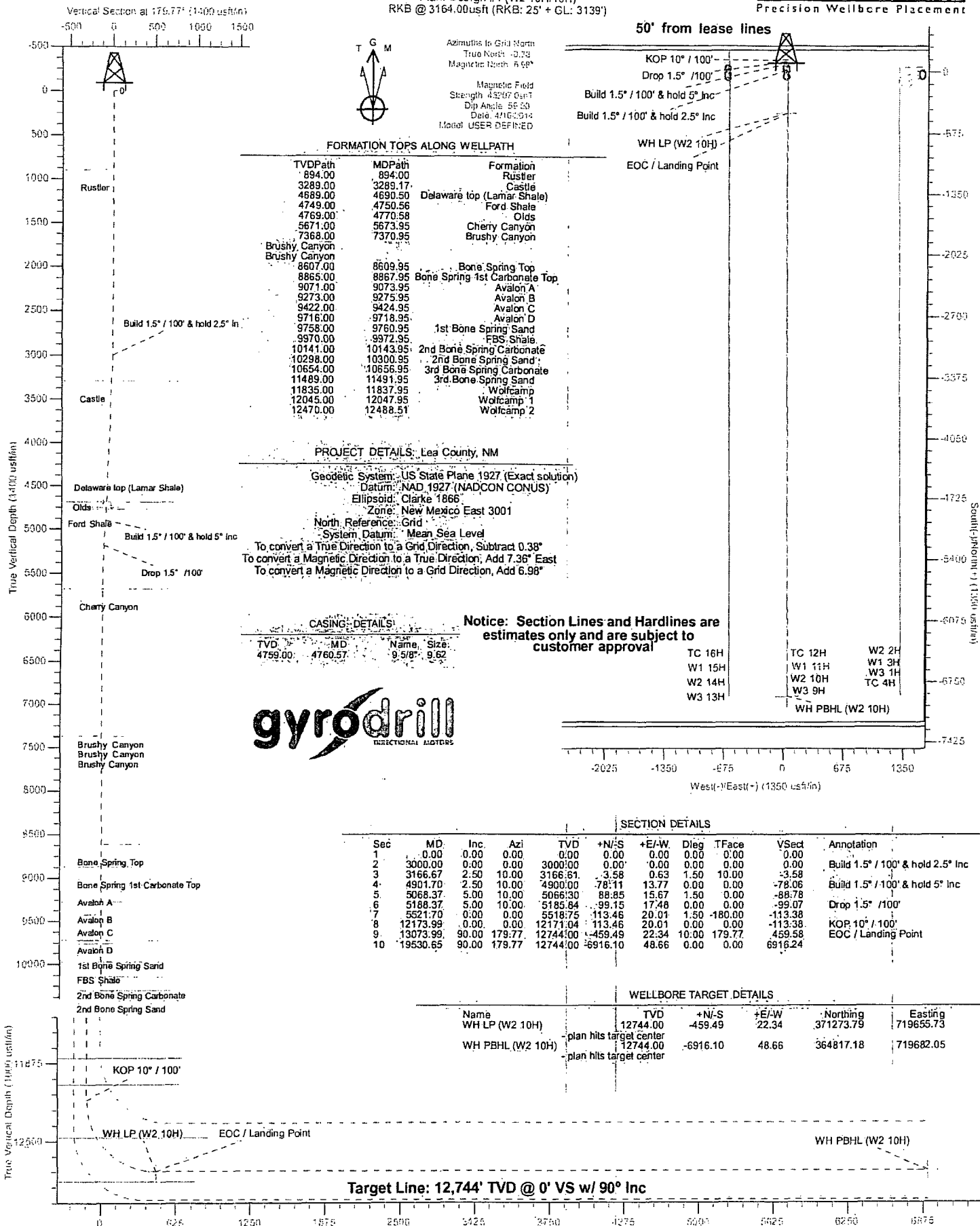
Plan: Design #1

Standard Planning Report

16 April, 2014

gyro/data
Precision Wellbore Placement

Plan: Design #1 (W2 10H/10H)
RKB @ 3164.00usf (RKB: 25' + GL: 3139')



Database:	GyrodanWDB	Local Co-ordinate Reference:	Well W2 10H
Company:	ConocoPhillips	TVD Reference:	RKB @ 3164.00usft (RKB: 25' + GL: 3139)
Project:	Lea County, NM	MD Reference:	RKB @ 3164.00usft (RKB: 25' + GL: 3139)
Site:	War Hammer 25 Fed Com	North Reference:	Grid
Well:	W2 10H	Survey Calculation Method:	Minimum Curvature
Wellbore:	10H		
Design:	Design #1		

Project:	Lea County, NM		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site:		War Hammer 25 Fed.Com			
Site Position:		Northing:	371,782.24 usft	Latitude:	32° 1' 12.49 N
From:	Map	Easting:	721,157.76 usft	Longitude:	103° 37' 11.14 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	0.38

Well:	W2-10H					
Well Position	+N-S	-48.96 usft	Northing:	371,733.28 usft	Latitude:	32° 1' 12.10 N
	+E-W	-1,524.37 usft	Easting:	719,633.39 usft	Longitude:	103° 37' 28.85 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,139.00 usft

Wellbore	10H				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	(°)		(°)	(°)	(nT)
	User Defined	4/16/2014	7.36	59.90	48,207

Design	Design #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	179.77

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	
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,166.67	2.50	10.00	3,166.61	3.58	0.63	1.50	1.50	0.00	10.00	
4,901.70	2.50	10.00	4,900.00	78.11	13.77	0.00	0.00	0.00	0.00	
5,068.37	5.00	10.00	5,066.30	88.85	15.67	1.50	1.50	0.00	0.00	
5,188.37	5.00	10.00	5,185.84	99.15	17.48	0.00	0.00	0.00	0.00	
5,521.70	0.00	0.00	5,518.75	113.46	20.01	1.50	-1.50	-3.00	-180.00	
12,173.99	0.00	0.00	12,171.04	113.46	20.01	0.00	0.00	0.00	0.00	
13,073.99	90.00	179.77	12,744.00	-459.49	22.34	10.00	10.00	19.97	179.77	
19,530.65	90.00	179.77	12,744.00	-6,916.10	48.66	0.00	0.00	0.00	0.00	WH PBHL (W2 10H)

Database:	GyrodataNWDB	Local Co-ordinate Reference:	Well W2 10H
Company:	ConocoPhillips	TVD Reference:	RKB @ 3164.00usft (RKB: 25' + GL: 3139)
Project:	Lea County, NM	MD Reference:	RKB @ 3164.00usft (RKB: 25' + GL: 3139)
Site:	War Hammer 25 Fed Com	North Reference:	Grid
Well:	W2 10H	Survey Calculation Method:	Minimum Curvature
Wellbore:	10H		
Design:	Design #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
1,300.00	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	1.50	10.00	3,099.99	1.29	0.23	-1.29	1.50	1.50	0.00
3,166.67	2.50	10.00	3,166.61	3.58	0.63	-3.58	1.50	1.50	0.00
3,200.00	2.50	10.00	3,199.92	5.01	0.88	-5.01	0.00	0.00	0.00
3,300.00	2.50	10.00	3,299.82	9.31	1.64	-9.30	0.00	0.00	0.00
3,400.00	2.50	10.00	3,399.73	13.60	2.40	-13.59	0.00	0.00	0.00
3,500.00	2.50	10.00	3,499.63	17.90	3.16	-17.89	0.00	0.00	0.00
3,600.00	2.50	10.00	3,599.53	22.19	3.91	-22.18	0.00	0.00	0.00
3,700.00	2.50	10.00	3,699.44	26.49	4.67	-26.47	0.00	0.00	0.00
3,800.00	2.50	10.00	3,799.34	30.79	5.43	-30.76	0.00	0.00	0.00
3,900.00	2.50	10.00	3,899.25	35.08	6.19	-35.06	0.00	0.00	0.00
4,000.00	2.50	10.00	3,999.15	39.38	6.94	-39.35	0.00	0.00	0.00
4,100.00	2.50	10.00	4,099.06	43.67	7.70	-43.64	0.00	0.00	0.00
4,200.00	2.50	10.00	4,198.96	47.97	8.46	-47.93	0.00	0.00	0.00
4,300.00	2.50	10.00	4,298.87	52.26	9.22	-52.23	0.00	0.00	0.00
4,400.00	2.50	10.00	4,398.77	56.56	9.97	-56.52	0.00	0.00	0.00
4,500.00	2.50	10.00	4,498.68	60.86	10.73	-60.81	0.00	0.00	0.00
4,600.00	2.50	10.00	4,598.58	65.15	11.49	-65.10	0.00	0.00	0.00
4,700.00	2.50	10.00	4,698.49	69.45	12.25	-69.40	0.00	0.00	0.00
4,800.00	2.50	10.00	4,798.39	73.74	13.00	-73.69	0.00	0.00	0.00
4,900.00	2.50	10.00	4,898.30	78.04	13.76	-77.98	0.00	0.00	0.00
4,901.70	2.50	10.00	4,900.00	78.11	13.77	-78.06	0.00	0.00	0.00
5,000.00	3.97	10.00	4,998.14	83.58	14.74	-83.52	1.50	1.50	0.00
5,068.37	5.00	10.00	5,066.30	88.85	15.67	-88.78	1.50	1.50	0.00

Database:	GyrodatabWVDB	Local Co-ordinate Reference:	Well V2 10H
Company:	ConocoPhillips	TVD Reference:	RKB @ 3164.00usft (RKB: 25' + GL: 3139')
Project:	Lea County, NM	MD Reference:	RKB @ 3164.00usft (RKB: 25' + GL: 3139')
Site:	War Hammer 25 Fed Com	North Reference:	Grid
Well:	V2 10H	Survey Calculation Method:	Minimum Curvature
Wellbore:	10H		
Design:	Design #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)
5,100.00	5.00	10.00	5,097.81	91.56	16.14	-91.50	0.00	0.00	0.00
5,188.37	5.00	10.00	5,185.84	99.15	17.48	-99.07	0.00	0.00	0.00
5,200.00	4.83	10.00	5,197.43	100.13	17.65	-100.05	1.50	-1.50	0.00
5,300.00	3.33	10.00	5,297.17	107.13	18.89	-107.05	1.50	-1.50	0.00
5,400.00	1.83	10.00	5,397.07	111.55	19.67	-111.47	1.50	-1.50	0.00
5,500.00	0.33	10.00	5,497.05	113.40	20.00	-113.32	1.50	-1.50	0.00
5,521.70	0.00	0.00	5,518.75	113.46	20.01	-113.38	1.50	-1.50	-46.08
5,600.00	0.00	0.00	5,597.05	113.46	20.01	-113.38	0.00	0.00	0.00
5,700.00	0.00	0.00	5,697.05	113.46	20.01	-113.38	0.00	0.00	0.00
5,800.00	0.00	0.00	5,797.05	113.46	20.01	-113.38	0.00	0.00	0.00
5,900.00	0.00	0.00	5,897.05	113.46	20.01	-113.38	0.00	0.00	0.00
6,000.00	0.00	0.00	5,997.05	113.46	20.01	-113.38	0.00	0.00	0.00
6,100.00	0.00	0.00	6,097.05	113.46	20.01	-113.38	0.00	0.00	0.00
6,200.00	0.00	0.00	6,197.05	113.46	20.01	-113.38	0.00	0.00	0.00
6,300.00	0.00	0.00	6,297.05	113.46	20.01	-113.38	0.00	0.00	0.00
6,400.00	0.00	0.00	6,397.05	113.46	20.01	-113.38	0.00	0.00	0.00
6,500.00	0.00	0.00	6,497.05	113.46	20.01	-113.38	0.00	0.00	0.00
6,600.00	0.00	0.00	6,597.05	113.46	20.01	-113.38	0.00	0.00	0.00
6,700.00	0.00	0.00	6,697.05	113.46	20.01	-113.38	0.00	0.00	0.00
6,800.00	0.00	0.00	6,797.05	113.46	20.01	-113.38	0.00	0.00	0.00
6,900.00	0.00	0.00	6,897.05	113.46	20.01	-113.38	0.00	0.00	0.00
7,000.00	0.00	0.00	6,997.05	113.46	20.01	-113.38	0.00	0.00	0.00
7,100.00	0.00	0.00	7,097.05	113.46	20.01	-113.38	0.00	0.00	0.00
7,200.00	0.00	0.00	7,197.05	113.46	20.01	-113.38	0.00	0.00	0.00
7,300.00	0.00	0.00	7,297.05	113.46	20.01	-113.38	0.00	0.00	0.00
7,400.00	0.00	0.00	7,397.05	113.46	20.01	-113.38	0.00	0.00	0.00
7,500.00	0.00	0.00	7,497.05	113.46	20.01	-113.38	0.00	0.00	0.00
7,600.00	0.00	0.00	7,597.05	113.46	20.01	-113.38	0.00	0.00	0.00
7,700.00	0.00	0.00	7,697.05	113.46	20.01	-113.38	0.00	0.00	0.00
7,800.00	0.00	0.00	7,797.05	113.46	20.01	-113.38	0.00	0.00	0.00
7,900.00	0.00	0.00	7,897.05	113.46	20.01	-113.38	0.00	0.00	0.00
8,000.00	0.00	0.00	7,997.05	113.46	20.01	-113.38	0.00	0.00	0.00
8,100.00	0.00	0.00	8,097.05	113.46	20.01	-113.38	0.00	0.00	0.00
8,200.00	0.00	0.00	8,197.05	113.46	20.01	-113.38	0.00	0.00	0.00
8,300.00	0.00	0.00	8,297.05	113.46	20.01	-113.38	0.00	0.00	0.00
8,400.00	0.00	0.00	8,397.05	113.46	20.01	-113.38	0.00	0.00	0.00
8,500.00	0.00	0.00	8,497.05	113.46	20.01	-113.38	0.00	0.00	0.00
8,600.00	0.00	0.00	8,597.05	113.46	20.01	-113.38	0.00	0.00	0.00
8,700.00	0.00	0.00	8,697.05	113.46	20.01	-113.38	0.00	0.00	0.00
8,800.00	0.00	0.00	8,797.05	113.46	20.01	-113.38	0.00	0.00	0.00
8,900.00	0.00	0.00	8,897.05	113.46	20.01	-113.38	0.00	0.00	0.00
9,000.00	0.00	0.00	8,997.05	113.46	20.01	-113.38	0.00	0.00	0.00
9,100.00	0.00	0.00	9,097.05	113.46	20.01	-113.38	0.00	0.00	0.00
9,200.00	0.00	0.00	9,197.05	113.46	20.01	-113.38	0.00	0.00	0.00
9,300.00	0.00	0.00	9,297.05	113.46	20.01	-113.38	0.00	0.00	0.00
9,400.00	0.00	0.00	9,397.05	113.46	20.01	-113.38	0.00	0.00	0.00
9,500.00	0.00	0.00	9,497.05	113.46	20.01	-113.38	0.00	0.00	0.00
9,600.00	0.00	0.00	9,597.05	113.46	20.01	-113.38	0.00	0.00	0.00
9,700.00	0.00	0.00	9,697.05	113.46	20.01	-113.38	0.00	0.00	0.00
9,800.00	0.00	0.00	9,797.05	113.46	20.01	-113.38	0.00	0.00	0.00
9,900.00	0.00	0.00	9,897.05	113.46	20.01	-113.38	0.00	0.00	0.00
10,000.00	0.00	0.00	9,997.05	113.46	20.01	-113.38	0.00	0.00	0.00
10,100.00	0.00	0.00	10,097.05	113.46	20.01	-113.38	0.00	0.00	0.00
10,200.00	0.00	0.00	10,197.05	113.46	20.01	-113.38	0.00	0.00	0.00

Database:	GyrodataNWDB	Local Co-ordinate Reference:	Well W2 10H
Company:	ConocoPhillips	TVD Reference:	RKB @ 3164.00usft (RKB: 25' + GL: 3139')
Project:	Lea County, NM	MD Reference:	RKB @ 3164.00usft (RKB: 25' + GL: 3139')
Site:	War Hammer 25 Fed Com	North Reference:	Grid
Well:	W2 10H	Survey Calculation Method:	Minimum Curvature
Wellbore:	10H		
Design:	Design #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)	
10,300.00	0.00	0.00	10,297.05	113.46	20.01	-113.38	0.00	0.00	0.00	
10,400.00	0.00	0.00	10,397.05	113.46	20.01	-113.38	0.00	0.00	0.00	
10,500.00	0.00	0.00	10,497.05	113.46	20.01	-113.38	0.00	0.00	0.00	
10,600.00	0.00	0.00	10,597.05	113.46	20.01	-113.38	0.00	0.00	0.00	
10,700.00	0.00	0.00	10,697.05	113.46	20.01	-113.38	0.00	0.00	0.00	
10,800.00	0.00	0.00	10,797.05	113.46	20.01	-113.38	0.00	0.00	0.00	
10,900.00	0.00	0.00	10,897.05	113.46	20.01	-113.38	0.00	0.00	0.00	
11,000.00	0.00	0.00	10,997.05	113.46	20.01	-113.38	0.00	0.00	0.00	
11,100.00	0.00	0.00	11,097.05	113.46	20.01	-113.38	0.00	0.00	0.00	
11,200.00	0.00	0.00	11,197.05	113.46	20.01	-113.38	0.00	0.00	0.00	
11,300.00	0.00	0.00	11,297.05	113.46	20.01	-113.38	0.00	0.00	0.00	
11,400.00	0.00	0.00	11,397.05	113.46	20.01	-113.38	0.00	0.00	0.00	
11,500.00	0.00	0.00	11,497.05	113.46	20.01	-113.38	0.00	0.00	0.00	
11,600.00	0.00	0.00	11,597.05	113.46	20.01	-113.38	0.00	0.00	0.00	
11,700.00	0.00	0.00	11,697.05	113.46	20.01	-113.38	0.00	0.00	0.00	
11,800.00	0.00	0.00	11,797.05	113.46	20.01	-113.38	0.00	0.00	0.00	
11,900.00	0.00	0.00	11,897.05	113.46	20.01	-113.38	0.00	0.00	0.00	
12,000.00	0.00	0.00	11,997.05	113.46	20.01	-113.38	0.00	0.00	0.00	
12,100.00	0.00	0.00	12,097.05	113.46	20.01	-113.38	0.00	0.00	0.00	
12,173.99	0.00	0.00	12,171.04	113.46	20.01	-113.38	0.00	0.00	0.00	
12,200.00	2.60	179.77	12,197.04	112.87	20.01	-112.79	10.00	10.00	691.23	
12,300.00	12.60	179.77	12,296.03	99.66	20.06	-99.58	10.00	10.00	0.00	
12,400.00	22.60	179.77	12,391.23	69.46	20.19	-69.38	10.00	10.00	0.00	
12,500.00	32.60	179.77	12,479.74	23.19	20.37	-23.11	10.00	10.00	0.00	
12,600.00	42.60	179.77	12,558.87	-37.75	20.62	37.83	10.00	10.00	0.00	
12,700.00	52.60	179.77	12,626.21	-111.50	20.92	111.58	10.00	10.00	0.00	
12,800.00	62.60	179.77	12,679.72	-195.83	21.27	195.91	10.00	10.00	0.00	
12,900.00	72.60	179.77	12,717.78	-288.16	21.64	288.25	10.00	10.00	0.00	
13,000.00	82.60	179.77	12,739.23	-385.71	22.04	385.79	10.00	10.00	0.00	
13,073.99	90.00	179.77	12,744.00	-459.49	22.34	459.58	10.00	10.00	0.00	
13,100.00	90.00	179.77	12,744.00	-485.50	22.45	485.59	0.00	0.00	0.00	
13,200.00	90.00	179.77	12,744.00	-585.50	22.86	585.59	0.00	0.00	0.00	
13,300.00	90.00	179.77	12,744.00	-685.50	23.26	685.59	0.00	0.00	0.00	
13,400.00	90.00	179.77	12,744.00	-785.50	23.67	785.59	0.00	0.00	0.00	
13,500.00	90.00	179.77	12,744.00	-885.50	24.08	885.59	0.00	0.00	0.00	
13,600.00	90.00	179.77	12,744.00	-985.50	24.49	985.59	0.00	0.00	0.00	
13,700.00	90.00	179.77	12,744.00	-1,085.50	24.89	1,085.59	0.00	0.00	0.00	
13,800.00	90.00	179.77	12,744.00	-1,185.49	25.30	1,185.59	0.00	0.00	0.00	
13,900.00	90.00	179.77	12,744.00	-1,285.49	25.71	1,285.59	0.00	0.00	0.00	
14,000.00	90.00	179.77	12,744.00	-1,385.49	26.12	1,385.59	0.00	0.00	0.00	
14,100.00	90.00	179.77	12,744.00	-1,485.49	26.52	1,485.59	0.00	0.00	0.00	
14,200.00	90.00	179.77	12,744.00	-1,585.49	26.93	1,585.59	0.00	0.00	0.00	
14,300.00	90.00	179.77	12,744.00	-1,685.49	27.34	1,685.59	0.00	0.00	0.00	
14,400.00	90.00	179.77	12,744.00	-1,785.49	27.75	1,785.59	0.00	0.00	0.00	
14,500.00	90.00	179.77	12,744.00	-1,885.49	28.15	1,885.59	0.00	0.00	0.00	
14,600.00	90.00	179.77	12,744.00	-1,985.49	28.56	1,985.59	0.00	0.00	0.00	
14,700.00	90.00	179.77	12,744.00	-2,085.49	28.97	2,085.59	0.00	0.00	0.00	
14,800.00	90.00	179.77	12,744.00	-2,185.49	29.38	2,185.59	0.00	0.00	0.00	
14,900.00	90.00	179.77	12,744.00	-2,285.49	29.78	2,285.59	0.00	0.00	0.00	
15,000.00	90.00	179.77	12,744.00	-2,385.48	30.19	2,385.59	0.00	0.00	0.00	
15,100.00	90.00	179.77	12,744.00	-2,485.48	30.60	2,485.59	0.00	0.00	0.00	
15,200.00	90.00	179.77	12,744.00	-2,585.48	31.01	2,585.59	0.00	0.00	0.00	
15,300.00	90.00	179.77	12,744.00	-2,685.48	31.42	2,685.59	0.00	0.00	0.00	
15,400.00	90.00	179.77	12,744.00	-2,785.48	31.82	2,785.59	0.00	0.00	0.00	

Database:	GyrodataNWDB	Local Co-ordinate Reference:	Well W2 10H
Company:	ConocoPhillips	TVD Reference:	RKB @ 3164.00usft (RKB: 25' + GL: 3139')
Project:	Lea County, NM	MD Reference:	RKB @ 3164.00usft (RKB: 25' + GL: 3139')
Site:	War Hammer 25 Fed Corn	North Reference:	Grid
Well:	W2 10H	Survey Calculation Method:	Minimum Curvature
Wellbore:	10H		
Design:	Design #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)
15,500.00	90.00	179.77	12,744.00	-2,885.48	32.23	2,885.59	0.00	0.00	0.00
15,600.00	90.00	179.77	12,744.00	-2,985.48	32.64	2,985.59	0.00	0.00	0.00
15,700.00	90.00	179.77	12,744.00	-3,085.48	33.05	3,085.59	0.00	0.00	0.00
15,800.00	90.00	179.77	12,744.00	-3,185.48	33.45	3,185.59	0.00	0.00	0.00
15,900.00	90.00	179.77	12,744.00	-3,285.48	33.86	3,285.59	0.00	0.00	0.00
16,000.00	90.00	179.77	12,744.00	-3,385.48	34.27	3,385.59	0.00	0.00	0.00
16,100.00	90.00	179.77	12,744.00	-3,485.48	34.68	3,485.59	0.00	0.00	0.00
16,200.00	90.00	179.77	12,744.00	-3,585.47	35.08	3,585.59	0.00	0.00	0.00
16,300.00	90.00	179.77	12,744.00	-3,685.47	35.49	3,685.59	0.00	0.00	0.00
16,400.00	90.00	179.77	12,744.00	-3,785.47	35.90	3,785.59	0.00	0.00	0.00
16,500.00	90.00	179.77	12,744.00	-3,885.47	36.31	3,885.59	0.00	0.00	0.00
16,600.00	90.00	179.77	12,744.00	-3,985.47	36.71	3,985.59	0.00	0.00	0.00
16,700.00	90.00	179.77	12,744.00	-4,085.47	37.12	4,085.59	0.00	0.00	0.00
16,800.00	90.00	179.77	12,744.00	-4,185.47	37.53	4,185.59	0.00	0.00	0.00
16,900.00	90.00	179.77	12,744.00	-4,285.47	37.94	4,285.59	0.00	0.00	0.00
17,000.00	90.00	179.77	12,744.00	-4,385.47	38.34	4,385.59	0.00	0.00	0.00
17,100.00	90.00	179.77	12,744.00	-4,485.47	38.75	4,485.59	0.00	0.00	0.00
17,200.00	90.00	179.77	12,744.00	-4,585.47	39.16	4,585.59	0.00	0.00	0.00
17,300.00	90.00	179.77	12,744.00	-4,685.47	39.57	4,685.59	0.00	0.00	0.00
17,400.00	90.00	179.77	12,744.00	-4,785.46	39.98	4,785.59	0.00	0.00	0.00
17,500.00	90.00	179.77	12,744.00	-4,885.46	40.38	4,885.59	0.00	0.00	0.00
17,600.00	90.00	179.77	12,744.00	-4,985.46	40.79	4,985.59	0.00	0.00	0.00
17,700.00	90.00	179.77	12,744.00	-5,085.46	41.20	5,085.59	0.00	0.00	0.00
17,800.00	90.00	179.77	12,744.00	-5,185.46	41.61	5,185.59	0.00	0.00	0.00
17,900.00	90.00	179.77	12,744.00	-5,285.46	42.01	5,285.59	0.00	0.00	0.00
18,000.00	90.00	179.77	12,744.00	-5,385.46	42.42	5,385.59	0.00	0.00	0.00
18,100.00	90.00	179.77	12,744.00	-5,485.46	42.83	5,485.59	0.00	0.00	0.00
18,200.00	90.00	179.77	12,744.00	-5,585.46	43.24	5,585.59	0.00	0.00	0.00
18,300.00	90.00	179.77	12,744.00	-5,685.46	43.64	5,685.59	0.00	0.00	0.00
18,400.00	90.00	179.77	12,744.00	-5,785.46	44.05	5,785.59	0.00	0.00	0.00
18,500.00	90.00	179.77	12,744.00	-5,885.46	44.46	5,885.59	0.00	0.00	0.00
18,600.00	90.00	179.77	12,744.00	-5,985.45	44.87	5,985.59	0.00	0.00	0.00
18,700.00	90.00	179.77	12,744.00	-6,085.45	45.27	6,085.59	0.00	0.00	0.00
18,800.00	90.00	179.77	12,744.00	-6,185.45	45.68	6,185.59	0.00	0.00	0.00
18,900.00	90.00	179.77	12,744.00	-6,285.45	46.09	6,285.59	0.00	0.00	0.00
19,000.00	90.00	179.77	12,744.00	-6,385.45	46.50	6,385.59	0.00	0.00	0.00
19,100.00	90.00	179.77	12,744.00	-6,485.45	46.90	6,485.59	0.00	0.00	0.00
19,200.00	90.00	179.77	12,744.00	-6,585.45	47.31	6,585.59	0.00	0.00	0.00
19,300.00	90.00	179.77	12,744.00	-6,685.45	47.72	6,685.59	0.00	0.00	0.00
19,400.00	90.00	179.77	12,744.00	-6,785.45	48.13	6,785.59	0.00	0.00	0.00
19,500.00	90.00	179.77	12,744.00	-6,885.45	48.54	6,885.59	0.00	0.00	0.00
19,530.65	90.00	179.77	12,744.00	-6,916.10	48.66	6,916.24	0.00	0.00	0.00

Database:	GyrodataNWDB	Local Co-ordinate Reference:	Well W2 10H
Company:	ConocoPhillips	TVD Reference:	RKB @ 3164.00usft (RKB: 25' + GL: 3139')
Project:	Lea County, NM	MD Reference:	RKB @ 3164.00usft (RKB: 25' + GL: 3139')
Site:	War Hammer 25 Fed Com	North Reference:	Grid
Well:	W2 10H	Survey Calculation Method:	Minimum Curvature
Wellbore:	10H		
Design:	Design #1		

Design Targets									
Target Name	hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude Longitude
WH PBHL (W2 10H)	- plan hits target center - Point	0.00	0.00	12,744.00	-6,916.10	48.66	364,817.18	719,682.05	32° 0' 3.66 N 103° 37' 28.81 W
WH LP (W2 10H)	- plan hits target center - Point	0.00	0.00	12,744.00	-459.49	22.34	371,273.79	719,655.73	32° 1' 7.56 N 103° 37' 28.62 W

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
4,760.57	4,759.00	9 5/8"	9.62	12.25

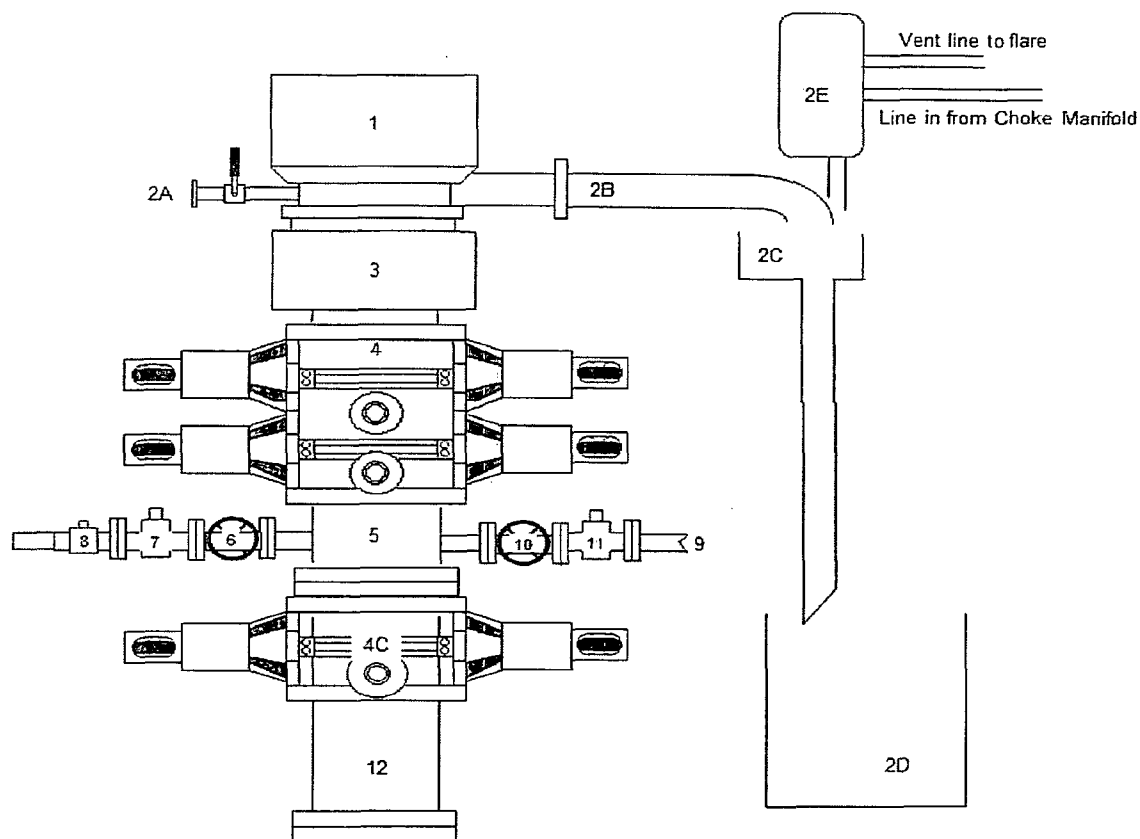
Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Geology	Dip (°)	Dip Direction (°)	
894.00	894.00	Rustler		0.00	179.77	
3,289.17	3,289.00	Castle		0.00	179.77	
4,690.50	4,689.00	Delaware top (Lamar Shale)		0.00	179.77	
4,750.56	4,749.00	Ford Shale		0.00	179.77	
4,770.58	4,769.00	Olds		0.00	179.77	
5,673.95	5,671.00	Cherry Canyon		0.00	179.77	
7,370.95	7,368.00	Brushy Canyon		0.00	179.77	
8,609.95	8,607.00	Bone Spring Top		0.00	179.77	
8,867.95	8,865.00	Bone Spring 1st Carbonate Top		0.00	179.77	
9,073.95	9,071.00	Avalon A		0.00	179.77	
9,275.95	9,273.00	Avalon B		0.00	179.77	
9,424.95	9,422.00	Avalon C		0.00	179.77	
9,718.95	9,716.00	Avalon D		0.00	179.77	
9,760.95	9,758.00	1st Bone Spring Sand		0.00	179.77	
9,972.95	9,970.00	FBS Shale		0.00	179.77	
10,143.95	10,141.00	2nd Bone Spring Carbonate		0.00	179.77	
10,300.95	10,298.00	2nd Bone Spring Sand		0.00	179.77	
10,656.95	10,654.00	3rd Bone Spring Carbonate		0.00	179.77	
11,491.95	11,489.00	3rd Bone Spring Sand		0.00	179.77	
11,837.95	11,835.00	Wolfcamp		0.00	179.77	
12,047.95	12,045.00	Wolfcamp 1		0.00	179.77	
12,488.51	12,470.00	Wolfcamp 2		0.00	179.77	

Database:	GyrodataNWDB	Local Co-ordinate Reference:	Well W2 10H
Company:	ConocoPhillips	TVD Reference:	RKB @ 3164.00usft (RKB: 25' + GL: 3139')
Project:	Lea County, NM	MD Reference:	RKB @ 3164.00usft (RKB: 25' + GL: 3139')
Site:	War Hammer 25 Fed Com	North Reference:	Grid
Well:	W2 10H	Survey Calculation Method:	Minimum Curvature
Wellbore:	10H		
Design:	Design #1		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
3,000.00	3,000.00	0.00	0.00	Build 1.5° / 100' & hold 2.5° Inc
4,901.70	4,900.00	78.11	13.77	Build 1.5° / 100' & hold 5° Inc
5,188.37	5,185.84	99.15	17.48	Drop 1.5° / 100'
12,173.99	12,171.04	113.46	20.01	KOP 10° / 100'
13,073.99	12,744.00	-459.49	22.34	EOC / Landing Point

BLOWOUT PREVENTER ARRANGEMENT - H&P486

10M System per Onshore Oil and Gas Order No. 2 utilizing 10M Rated Equipment

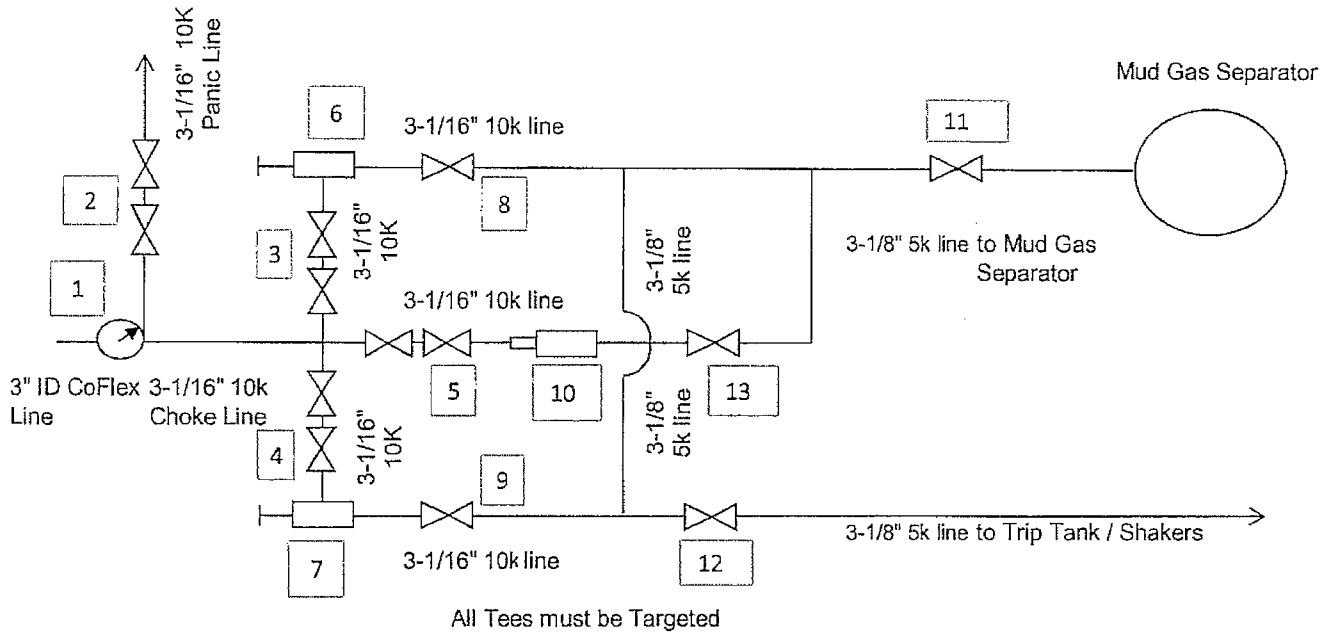


Item	Description
1	Rotating Head
2A	Fill up Line and Valve
2B	Flow Line (8")
2C	Shale Shakers and Centrifuges
2D	Cuttings Bins for Zero Discharge
2E	Mud Gas Separator with vent line to flare and return line to mud system
3	Annular Preventer (13-5/8", 10M)
4	Double Ram (13-5/8", 10M, Bline Ram bottom x Pipe Ram top)
5	Drilling Spool (13-5/8" 10M)
4C	Single Ram (13-5/8", 10M, Pipe Rams)
6	Kill Line Valve, Inner (4-1/16", 10k psi WP)
7	Kill Line Valve, Outer (4-1/16", 10k psi WP)
8	Kill Line Check Valve (4-1/16", 10k psi WP)
9	Choke Line (4-1/16", 10k psi WP)
10	Choke Line Valve, Inner (4-1/16", 10k psi WP)
11	Choke Line Valve, Outer, (4-1/16" 10k psi WP HCR)
12	Drilling Spool Adapter (13-5/8", 10M)

Drawn by: James Chen P.E., Drilling Engineer, ConocoPhillips Company, April 11, 2014

CHOKE MANIFOLD ARRANGEMENT - HP486

10M System per Onshore Oil and Gas Order No. 2 utilizing 5M/10M Equipment



Item	Description
1	Pressure Gauge
2	2 Gate Valves, 3-1/16" 10M
3	2 Gate Valves, 3-1/16" 10M
4	2 Gate Valves, 3-1/16" 10M
5	2 Gate Valves, 3-1/16" 10M
6	Upper Manual Adjustable Choke, 4-1/16", 10M
7	Lower Manual Adjustable Choke, 4-1/16", 10M
8	Gate Valve, 3-1/16" 10M
9	Gate Valve, 3-1/16" 10M
10	Remote Controlled Hydraulic Adjustable Choke, 4-1/16", 10M
11	Gate Valve, 3-1/8" 5M
12	Gate Valve, 3-1/8" 5M
13	Gate Valve, 3-1/16" 10M

The 10M Choke Manifold & Valves will be tested to rated working pressure.

Drawn by:
James Chen, P.E.
Drilling Engineer, ConocoPhillips Company
Date: June 25th-2012

Request for Variance

ConocoPhillips Company

Rig: If drilled with H&P 486

Date: 7/7/2014

Request:

ConocoPhillips Company respectfully requests a variance to install a flexible choke line instead of a straight choke line prescribed in the Onshore Order No. 2, III.A.2.b Minimum standards and enforcement provisions for choke manifold equipment. This request is made under the provision of Onshore Order No. 2, IV Variances from Minimum Standard. The rig to be used to drill this well is equipped with a flexible choke line if the requested variance is approved and determined that the proposed alternative meets the objectives of the applicable minimum standards.

Justifications:

The applicability of the flexible choke line will reduce the number of target tees required to make up from the choke valve to the choke manifold. This configuration will facilitate ease of rig up and BOPE Testing.

Attachments:

- Attachment # 1 Specification from Manufacturer
- Attachment # 2 Mill & Test Certification from Manufacturer

Contact Information:

Program prepared by:

Jason A. Levinson

Drilling Engineer, ConocoPhillips Company

Phone (281) 206-5335

Cell (281) 682-2783

Date: 05 February 2014

Attachment # 1

CONTITECH RUBBER Industrial Kft.	No: QC-DB- 45 / 2012
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Hose Data Sheet

CRI Order No.	516273
Customer	ContiTech Beattie Co.
Customer Order No	P05438 STOCK
Item No.	3
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" API SPEC 6A TYPE 6BX FOR 10000 PSIBX155 RING GROOVE
Type of coupling other end	FLANGE 4 1/16" API SPEC 6A TYPE 6BX FOR 10000 PSI BX155 RING GROOVE
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 RESISTANT
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
MBR operating [m]	1,60
MBR storage [m]	1,40
Type of packing	WOODEN CRATE ISPM-15

Attachment # 2

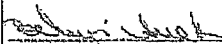
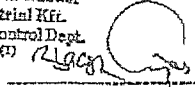


QC-DB- 45/2012

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Fluid Technology

Quality Document

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°:	184
PURCHASER: ContiTech Bealtis Co.				P.O. N°:	005438
CONTITECH ORDER N°: 516273		HOSE TYPE: 3" ID		Choke and Kill Hose	
HOSE SERIAL N°: 61477		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	Heat N°
3" coupling with		10178 10173		AISI 4130	20231
4 1/16" 10K API Flange end				AISI 4130	33051
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		
30. January 2012.			ContiTech Rubber Industrial Kft. Quality Control Dept.  		

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 Hungary

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 Internet: www.contitech-rubber.hu

The Court of Győr-Ménfőcsanak
 Registry Court
 Registry Court No. 11/06 02-00502
 Eu VAT No. HU1887899

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Request for Variance

ConocoPhillips Company

Rig: If drilled with H&P 453

Date: 7/7/2014

Request:

ConocoPhillips Company respectfully requests a variance to install a flexible choke line instead of a straight choke line prescribed in the Onshore Order No. 2, III.A.2.b Minimum standards and enforcement provisions for choke manifold equipment. This request is made under the provision of Onshore Order No. 2, IV Variances from Minimum Standard. The rig to be used to drill this well is equipped with a flexible choke line if the requested variance is approved and determined that the proposed alternative meets the objectives of the applicable minimum standards.

Justifications:

The applicability of the flexible choke line will reduce the number of target tees required to make up from the choke valve to the choke manifold. This configuration will facilitate ease of rig up and BOPE Testing.

Attachments:

- Attachment # 1 Specification from Manufacturer
- Attachment # 2 Mill & Test Certification from Manufacturer

Contact Information:

Program prepared by:
Jason A. Levinson
Drilling Engineer, ConocoPhillips Company
Phone (281) 206-5335
Cell (281) 682-2783
Date: 05 February 2014

Attachment # 1

CONTITECH RUBBER Industrial Kit.	No: QC-DB- 45 / 2012
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Hose Data Sheet

CRI Order No.	516273
Customer	ContiTech Beattie Co.
Customer Order No	P05438 STOCK
Item No.	3
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" API SPEC 6A TYPE 6BX FOR 10000 PSI BX155 RING GROOVE
Type of coupling other end	FLANGE 4 1/16" API SPEC 6A TYPE 6BX FOR 10000 PSI BX155 RING GROOVE
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 RESISTANT
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
MBR operating [m]	1,60
MBR storage [m]	1,40
Type of packing	WOODEN CRATE ISPM-15



Fluid Technology

Quality Document

453.369-001

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 1098	
PURCHASER: ContiTech Beattie Co.				P.O. N°: 004452	
CONTITECH ORDER N°: 482598		HOSE TYPE: 3" ID		Choke and Kill Hose	
HOSE SERIAL N°: 56839		NOMINAL / ACTUAL LENGTH: 10,67 m / 10,69 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 = 25 MPa					
COUPLINGS Type		Serial N°		Quality	
3" coupling with 4 1/16" Flange end		8436 1882		AISI 4130	
				AISI 4130 31296 31501	
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		
02. November 2010.			ContiTech Rubber Industrial Kit. Quality Control Dept. (1) 91		

ContiTech Rubber Industrial Kit

Phone: +36 62 911 737

The ContiTech Company in

Rink, Austria

013304000175									
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ContiTech Rubber
Industrial Kit
Quality Control Dept.
(3)

Closed Loop System Design, Operating and Maintenance, and Closure Plan

ConocoPhillips Company
Well: WAR HAMMER 25 FEDERAL COM W2 10H
Location: Sec. 25, T26S, R32E
Date: 7/7/2014

ConocoPhillips proposes the following plan for design, operating and maintenance, and closure of our proposed closed loop system for the above named well:

1. We propose to use a closed loop system with steel pits, haul-off bins, and frac tanks for containing all cuttings, solids, mud, water, brine, and liquids. We will not dig a pit, nor will we use a drying pad, nor will we build an earth pit above ground level, nor will we dispose of or bury any waste on location.

All drilling waste and all drilling fluids (fresh water, brine, mud, cuttings, drill solids, cement returns, and any other liquid or solid that may be involved) will be contained on location in the rig's steel pits or in haul-off bins or in frac tanks as needed. The intent is as follows:

- We propose to use the rigs' steel pits for containing and maintaining the drilling fluids.
- We propose to remove cuttings and drilled solids from the mud by using solids control equipment and to contain such cuttings and drilled solids on location in haul-off bins.
- We propose that any excess water that may need to be stored on location will be stored in tanks.

The closed loop system components will be inspected daily by each tour and any needed repairs will be made immediately. Any leak in the system will be repaired immediately, and any spilled liquids and/or solids will be cleaned immediately, and the area where any such spill occurred will be remediated immediately.

2. Cuttings and solids will be removed from location in haul-off bins by an authorized contractor and disposed of at an authorized facility. For this well, we propose the following disposal facility:

R-360 Inc.
4507 West Carlsbad Hwy, Hobbs, NM 88240,
P.O. Box 388; Hobbs, New Mexico 88241
Toll Free Phone: 877.505.4274, Local Phone Number: 432.638.4076

The physical address for the plant where the disposal facility is located is Highway 62/180 at mile marker 66 (33 miles East of Hobbs, NM and 32 miles West of Carlsbad, NM).

The Permit Number for R-360 is NM-01-0006.

A photograph showing the type of haul-off bins that will be used is attached.

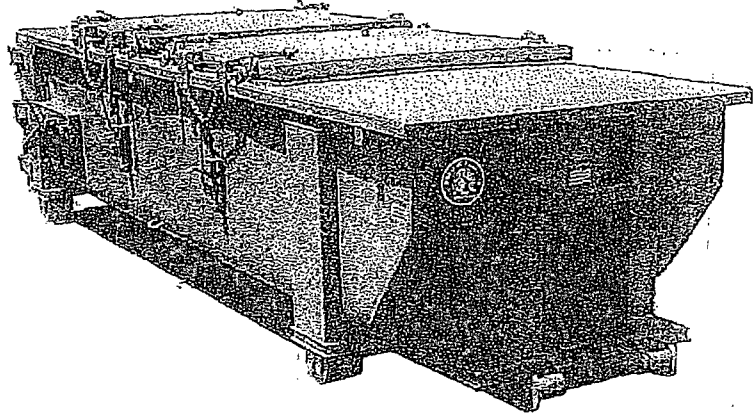
3. Mud will be transported by vacuum truck and disposed of at R-360 Inc. at the facility described above.
4. Fresh Water and Brine will be hauled off by vacuum truck and disposed of at an authorized salt water disposal well. We propose the following for disposal of fresh water and brine as needed:
 - Nabors Well Services Company, 3221 NW County Rd; Hobbs, NM 88240, PO 5208 Hobbs, NM, 88241, Permit SWD 092. (Well Location: **Section 3, T19S R37E**)
 - Basic Energy Services, P.O. Box 1869; Eunice, NM 88231 Phone Number: 575.394.2545, Facility located at Hwy 18, Mile Marker 19; Eunice, NM.

Jason Levinson
Drilling Engineer
Office: 281-206-5334
Cell: 281-682-2783

SPECIFICATIONS

FLOOR: 3/16" PL one piece
 CROSS MEMBER: 3 x 4 L channel 16" on center
 WALLS: 3/16" PL solid welded with tubing top, inside liner hooks
 DOOR: 3/16" PL with tubing frame
 FRONT: 3/16" PL slant formed
 PICK-UP: Standard cable with 2" x 6" x 1/4" rails, gusset at each crossmember
 WHEELS: 10 DIA x 9 long with rease fittings
 DOOR LATCH: 3 Independent ratchet binders with chains, vertical second latch
 GASKETS: Extruded rubber seal with metal retainers
 WELDS: All welds continuous except sub structure crossmembers
 FINISH: Coated inside and out with direct to metal, rust inhibiting acrylic enamel color coal
 HYDROTESTING: Full capacity static test
 DIMENSIONS: 22'-11" long (21'-8" inside), 99" wide (88" inside), see drawing for height
 OPTIONS: Steel grit blast and special paint, Ampliroil, Heil and Dino pickup
 ROOF: 3/16" PL roof panels with tubing and channel support frame
 LIDS: (2) 68" x 90" metal rolling lids spring loaded, self raising
 ROLLERS: 4" V-groove rollers with delrin bearings and grease fittings
 OPENING: (2) 60" x 82" openings with 8" divider centered on container
 LATCH: (2) independent ratchet binders with chains per lid
 GASKETS: Extruded rubber seal with metal retainers

Heavy Duty Split Metal Rolling Lid



CONT.	A	B
20 YD	41	53
25 YD	53	65
30 YD	65	77

