OCD Hobbs

ATS-15-236

Form 3160-3
(March 2012)

R-111-POTASH

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☑ DRILL ☐ REENTER	5. Lease Serial No. NM-033955
1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone	6. If Indian, Allotee or Tribe Name
2. Name of Operator FASKEN OIL AND RANCH, LTD. (151416)	7. If Unit or CA Agreement, Name and No.
3a. Address 6101 HOLIDAY HILL ROAD MIDLAND, TEXAS 79707	3b. Phone No. (include area code) (432) 687-1777 (CORY FREDRICK)
4. Location of Well (Report location clearly and in accordance with any State requirements.*) At surface 163 FNL & 700 FEL Section 26 (First Take: 330 FSL & 1700 FEL section 23) At proposed prod. zone 330 FNL & 1700 FEL, Section 23	8. Lease Name and Well No. BAETZ 23 FEDERAL 3H (18162)
	9. API Well No. 30-025-43351
	10. Field and Pool, or Exploratory SALT LAKE; BONE SPRING (53565)
	11. Sec., T. R. M. or Blk. and Survey or Area SHL: SECTION 26, T. 20 S., R. 32 E. BHL: SECTION 23, T. 20 S., R. 32 E.
14. Distance in miles and direction from nearest town or post office* 34 MILES SOUTHWEST OF HOBBS, NM	12. County or Parish LEA / 13. State NM
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) SHL: 163' BHL: 330'	16. No. of acres in lease 640 / 17. Spacing Unit dedicated to this well 160
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. SHL: 20' BHL: 1370'	19. Proposed Depth TVD: 9,951' MD: 14,966' / 20. BLM/BIA Bond No. on file NM-2729
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3554.3' GL	22. Approximate date work will start* ASAP / 23. Estimated duration 30 DAYS

UNORTHODOX LOCATION

HOBBS OCD

JUL 06 2016

RECEIVED

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 /Barry W. Hunt/	Name (Printed/Typed) BARRY W. HUNT	Date 12/18/14
Title PERMIT AGENT FOR FASKEN OIL AND RANCH, LTD.		
Approved by (Signature) /s/George MacDonell	Name (Printed/Typed)	Date JUL 5 - 2016
Title FIELD MANAGER	Office 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. Secti... to make to any department or agency of the United States any false, fictitious or fraudulent statements ...

See attached NMOCD Conditions of Approval

(Continued on page 2)

*(Instructions on page 2)

KZ 07/07/16

Carlsbad Controlled Water Basin

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

APPLICATION FOR PERMIT TO DRILL
EIGHT POINT DRILLING PLAN
Fasken Oil and Ranch, Ltd.

Baetz "23" Federal No. 3H
SHL: 163' FNL & 700' FEL, Sec. 26, T20S, R32E
BHL: 394' FNL & 2321' FEL, Sec. 22, T20S, R32E
Lea County, New Mexico

1. Estimated formation tops, please see below.

2. Water, oil, gas, and/or mineral bearing formations, see below.

KB: 3,575' (estimated)

Formation	Top Est. From KB (TVD)	MD	Bearing
Fresh Water	125'	125'	Fresh Water
Rustler	1065'	1065'	Barren
Salt	1379'	1379'	Barren
Base Salt	2910'	2910'	Barren
Yates	2933'	2933'	Oil/Gas
Reef	3544'	4308'	Brackish Water
Del. Mountain Group	4740'	4740'	Oil/Gas
Bone Springs	7810'	7880'	Oil/Gas
1st Bone Springs	8917'	9007'	Oil/Gas
2nd Bone Springs	9196'	9286'	Oil/Gas
TD	9,951'	16,608'	Oil/Gas

3. Casing Program: See COA

All casing will be new.

Hole Size	Interval	Size	Weight	Grade	Thread
26"	0'-1350'	20"	133#	J-55	BT&C

17-1/2"	0'-1600'	13-3/8"	54.50#	K-55	BT&C
	1600'-~~2925~~' 3050'	13-3/8"	61.00#	HCK-55	BT&C
12-1/4"	0'-4650'	9-5/8"	40.00#	HCK-55	BT&C
8-3/4"	0'-16,608'	5-1/2"	17.00#	HC-P110	TTRS1

*A spec sheet is included in this application for TTRS1 casing connections.
Minimum casing design factors used are a 1.8 for tensile strings, 1.125 for collapse, and 1.1 for burst.

4. Pressure Control Equipment:

Exhibit "I". A 20" 2000 psi annular preventer will be installed prior to drilling out from the 20" surface casing. The annular will be tested to 50% of its rated working pressure by an independent tester, the rest of the system will be tested to 2000 psi. On the 13-3/8" casing a 13-5/8" 5000 psi working pressure BOP consisting of one set of blind rams, one set of pipe rams, and a 5000 psi annular preventer will be utilized. A choke manifold and accumulator with floor and remote operating stations and an auxiliary power system. There will also be a rotating head equipped after drilling out from the 9-5/8" casing. A Kelly cock will be installed and maintained in operating condition and a drill string safety valve in the open position will be available on the rig floor. A mud gas separator will also be utilized. The BOP unit will be hydraulically operated. BOP will be operated once a day while drilling and the blind rams will be function tested when out of the hole on trips. No abnormal temperatures or pressures are anticipated on this well. Before drilling out from the 13-3/8" salt protection string, the BOP will be tested to 250 psi low and 2000 psi high by an independent service company. Before drilling out of the 9-5/8" casing the BOP will be tested to 250 psi low and 5000 psi high by an independent service company. The Hydril (annular) will be tested to 250 psi low/2500 psi high.

Fasken Oil and Ranch, Ltd. requests a variance to drill this well using a co-flex line between the BOP and choke manifold. This will be an armored 3.5" 10,000 psi WP flex hose connecting the BOP and choke manifold. The hose is rated to 10,000 psi, and has

10,000 psi flanges on each end. The hose will be tested to 5000 psi along with the rest of the BOP system as set out in this APD. The manufacturer of the hose has stated that anchors are not needed for this model.

Documentation for the hose is attached.

5. Drilling Fluids Program:

Depth	Type	Weight	Viscosity	Waterloss
0'-1,350'	Fresh Water	8.4-8.6	28	NC
1350'-~~2925~~' 3050'	Brine Water	10.0-10.2	30-32	NC
~~2925~~'-4650' 3050'	Fresh Water	8.4-8.8	28-32	NC

4650'-9,400'	Cut Brine	8.6-9.0	28-29	NC
9,400'-16,608'	FW/Gel/Starch	8.5-9.5	28-45	<20

Sufficient mud materials will be kept on location at all times in order to combat lost circulation or unexpected kicks.

6. Technical Testing/Drilling and Cementing Plans

- DST's: None anticipated.
- Cores: None anticipated.
- Mud Logging: 2-man Mudlogging unit from 4,650' to T.D.
- Electric Logs: MWD/Azimuthal Gamma Ray

Cementing Design:

20" Surface Casing: Use "inner string sting in" cementing method, with 5" drillpipe stung into a float in the 20" casing. Lead with 1200 sx Class "C" with 4% gel, 2% calcium chloride, 0.125 lbs/sk cellophane flake, 0.4 lbs/sk anti foam, 9.195 gallons/sk mix water (s.w. 13.5 ppg, yield 1.72 ft^3/sx) plus an estimated 700 sx Class "C" cement using 6.311 gal/sk mix water (s.w. 14.8 ppg, yield 1.33 ft^3/sx). Casing will be centralized on bottom 3 joints and then every 4th joint up to surface.

13-3/8" Salt Protection: Lead with 1325 sx Class "C" with 4% gel, 0.125 lbs/sx cellophane flake, 2% calcium chloride, and 0.4% lbs/sk anti foam, 11.9 gallons/sk mix water (s.w. 12.6 ppg, yield 2.11 ft^3/sx) tail in with 400 sx Class "C" with 0.1% retarder, 6.34 gallons/sk mix water (s.w. 14.8 ppg, yield 1.33 ft^3/sx). Cement will be calculated at 90% excess. Casing will be centralized on bottom 3 joints and then every 4th joint up to surface. TOC will be surface.

9-5/8" Intermediate Casing, DV tool with external casing packer set at 3200'.

1st stage: Lead with 400 sx Lightweight C with 5% salt, , 6% bentonite gel, 0.4% 606 fluid loss additive, 0.4 lbs/sk defoamer, 2 lbs/sk extender, 11.35 gal/sk mix water (s.w.12.6 ppg, yield 2.08 ft^3/sx) tailed in with 200 sx Class "C" with 0.2% retarder, 6.31 gal/sk mix water (s.w. 14.8 ppg, yield 1.33 ft^3/sx). DV Tool/ECP will be installed at 3200'.

2nd stage: Lead with 650 sx Lightweight C with 5% salt, , 6% bentonite gel, 0.4% 606 fluid loss additive, 0.4 lbs/sk defoamer, 2 lbs/sk extender, 11.35 gal/sk mix water (s.w.12.6 ppg, yield 2.08 ft^3/sx) tailed in with 200 sx Class "C" with 0.2% retarder, 6.31 gal/sk mix water (s.w. 14.8 ppg, yield 1.33 ft^3/sx). Cement calculated at 95% excess. Casing will be centralized on bottom 3 joints, above and below the DV tool, and from 1200'-2600'.

5-1/2" Production Casing:

Lead with 1200 sx 50/50 Poz "H" with 8% gel, 5% salt, 0.6% fluid loss additive, 1.0% retarder, 0.2% anti foam, 14.2 gal/sk mix water (s.w.11.9 ppg, yield 2.47 ft^3/sx), tail in with 1350 sx Lateral 50/50 Class "H" with 2% expanding/bonding agent, 0.2% anti foam, 0.3% fluid loss, 0.1% dispersant, 0.1% viscosifier, 0.2% retarder, 5.4 gal/sk mix water (s.w.14.5 ppg, yield 1.32

ft^3/sx). Cement will be circulated to surface. Cement will be calculated at 15% over hole volume.

Directional Drilling Program:

Fasken Oil and Ranch, Ltd. will control drill the well vertically to the KOP at 9226 TVD', running directional surveys to ensure a safe distance is kept from the Baetz 4H wellbore. From here a rotary steerable will be picked up. A build rate of 10 degrees/100' will be utilized to build up to a hold angle of 90 degrees and azimuth of 304 degrees. This wellbore will then be turned at a 4.5 degree DLS to a 270 degree azimuth. An inclination of 90.94 degrees will be held until TD. This is the dip angle of the 2nd Bone Springs Sand target. The lateral will be drilled into the eastern half of Section 22. TD is anticipated to be 16,608' MD/9,700' TVD. 5-1/2" production casing will then be installed and cemented to surface. The 2nd Bone Springs will then be hydraulically fractured in multiple stages.

H2S Safety Equipment:

H2S equipment will be rigged up prior to drilling out from surface casing. The flare pit will be located 100' from location. There is not any H2S anticipated in the area, but in the event it is encountered the attached H2S plan will be implemented. Please refer to the attached H2S location layout diagram.

Closed loop system and choke manifold: Please see attached Exhibit "K"

7. **Abnormal Pressure, Temperatures or Other Hazards:** None anticipated. Maximum Anticipated Bottom Hole Pressure is anticipated to be 4900 psi, with a BHT of 165°. Lost circulation is possible in the Reef and Delaware formations.

8. **Other Information:**

   Auxiliary Equipment will include upper and lower kelly cocks. There will be a full opening stabbing valve on the rig floor.

   Anticipated Starting Date: April 1st, 2015

Tejas Tubular® TTRS1® Connection

5 ½" 17# P-110 Tejas Tubular Reduced Stress TTRS1®

Pipe Dimensions			
Pipe O.D. (Nominal)			5.500"
Pipe Weight			17.00 lbs./ft.
Pipe I.D. (Nominal)			4.892"
Pipe Wall			0.304"
Pipe Drift			4.767"
Connection Dimensions			
Coupling O.D.			6.050"
Coupling I.D.			4.892"
Coupling Length			9.250"
Make-Up Loss			4.125"
Threads Per Inch			5 TPI
Connection Efficiency			
Tensile Yield Strength			546,000 lbs.
Internal Pressure			10,640 psi
Collapse Strength			7,480 psi
Compression Strength			546,000 lbs.
Tested Working Bending Rate			20°/100 ft.
Bending Rate (Calculated)			91°/100 ft.
Make-Up Torque (ft.-lbs.)			
•Minimum		6,800 ft.-lbs.	
•Optimum – Recommended Make-Up			7,200 ft.-lbs.
•Maximum		15,500 ft.-lbs.	
•Yield Torque	0312	17,000 ft.-lbs.	

COPPER STATE RUBBER
VISUAL INSPECTION / HYDROSTATIC TEST REPORT
CHOKE & KILL / CEMENTING HOSE
10,000 P.S.I. W/P X 15,000 P.S.I. T/P
SPEC: 090-1015 HS
H2S SUITABLE

SHOP ORDER NO.: 23245 SIZE: 3-1/2" I.D.

SERIAL NO.: 27472 LENGTH 40 FT. IN.

CONNECTIONS: 4-1/16" 10,000 PSI API FLANGES

10A2 - 10A3 - 08D2 - HT-GSZ - HT-X1840

VISUAL INSPECTION

(A) END CAPS / SLEEVE RECESS: OK
(B) EXTERIOR / COVER / BRANDING: OK
(C) INTERIOR TUBE: OK

HYDROSTATIC TEST

5 MIN. @ 10,000 PSI

2 MIN. @ 0 PSI 39' - 10" OAL

15 MIN. @ 15,000 PSI

WITNESSED BY: Phil Snider

DATE April 27, 2011

FORM QA-21- REV-3
9/07

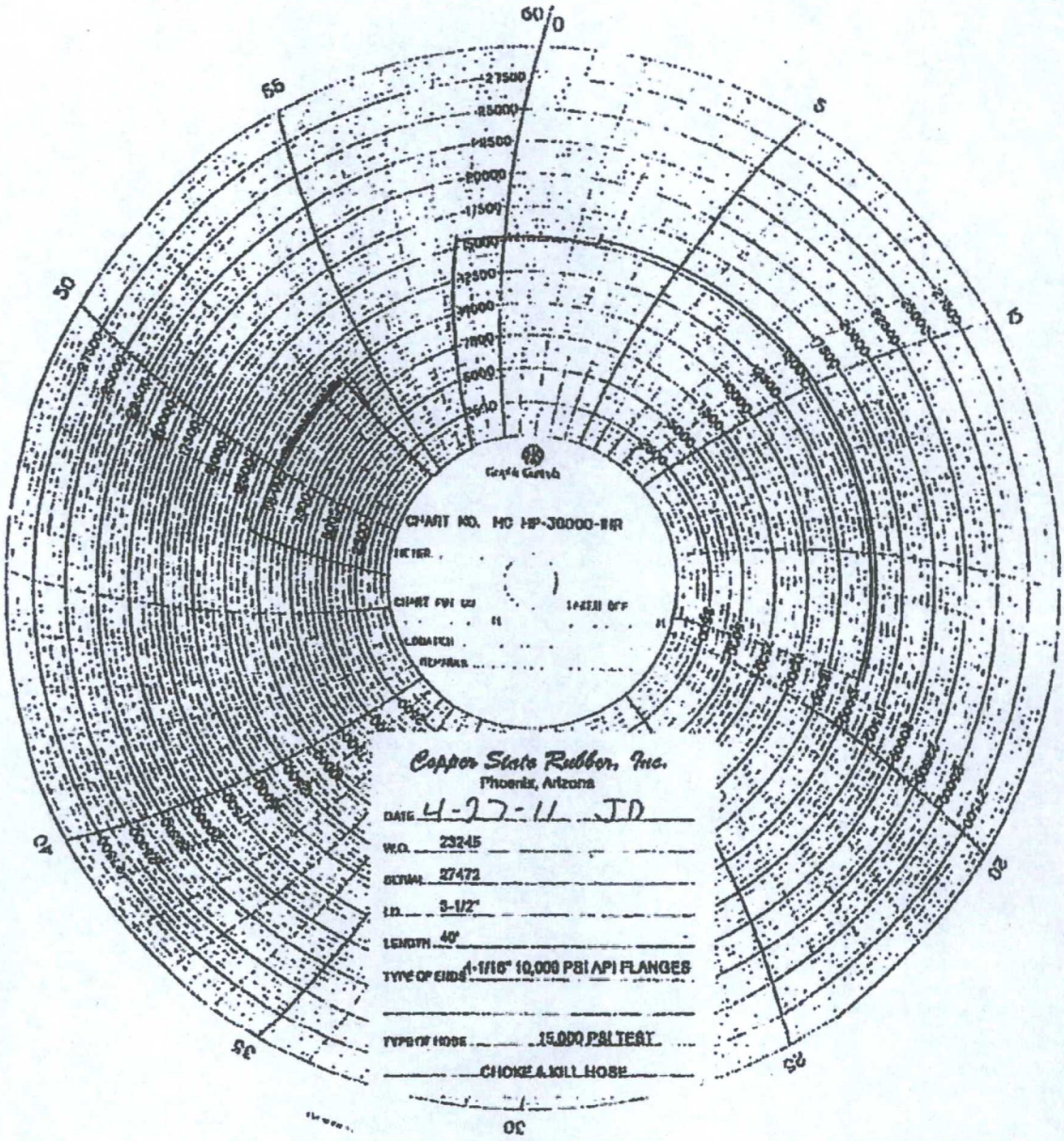
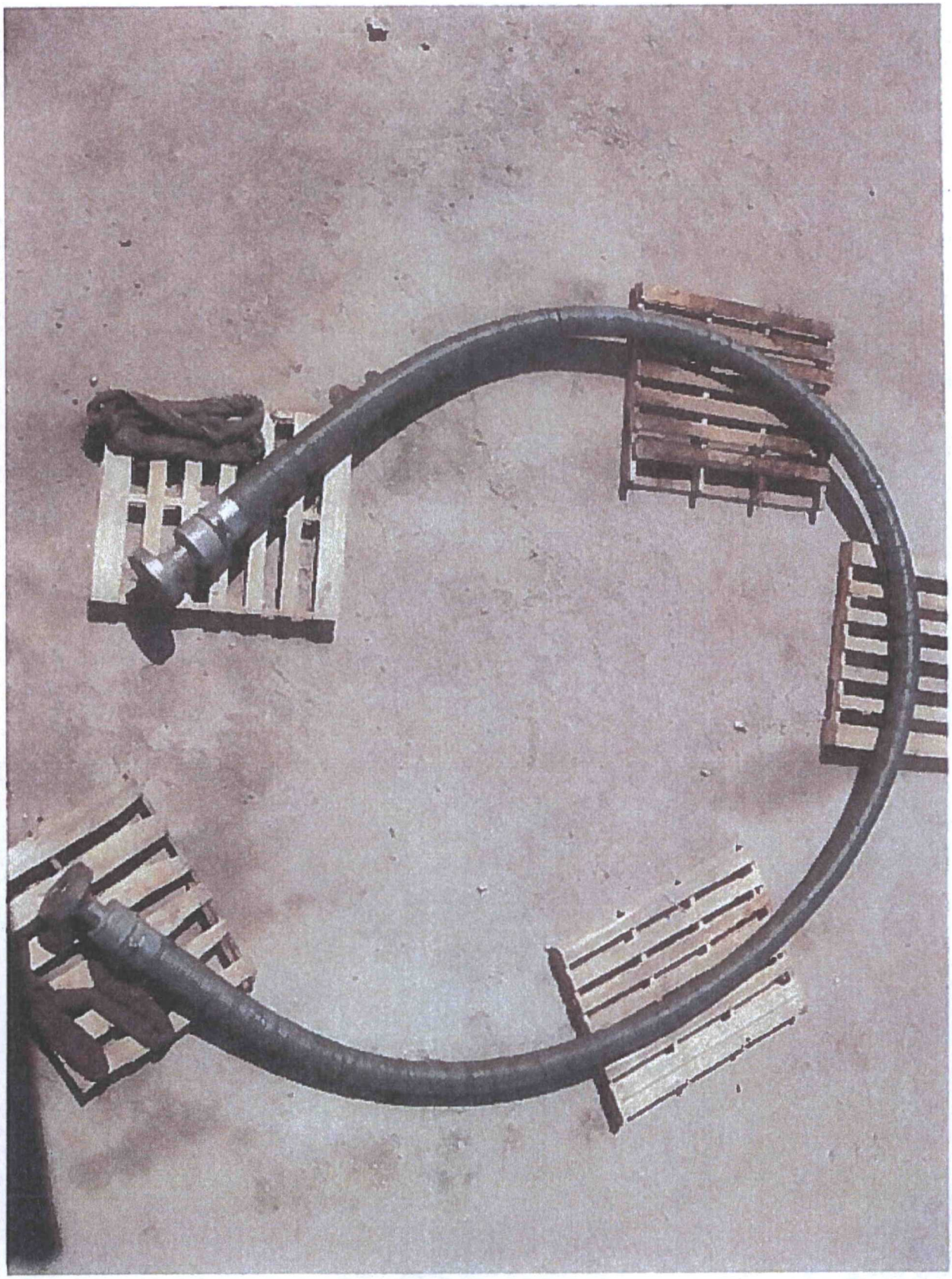
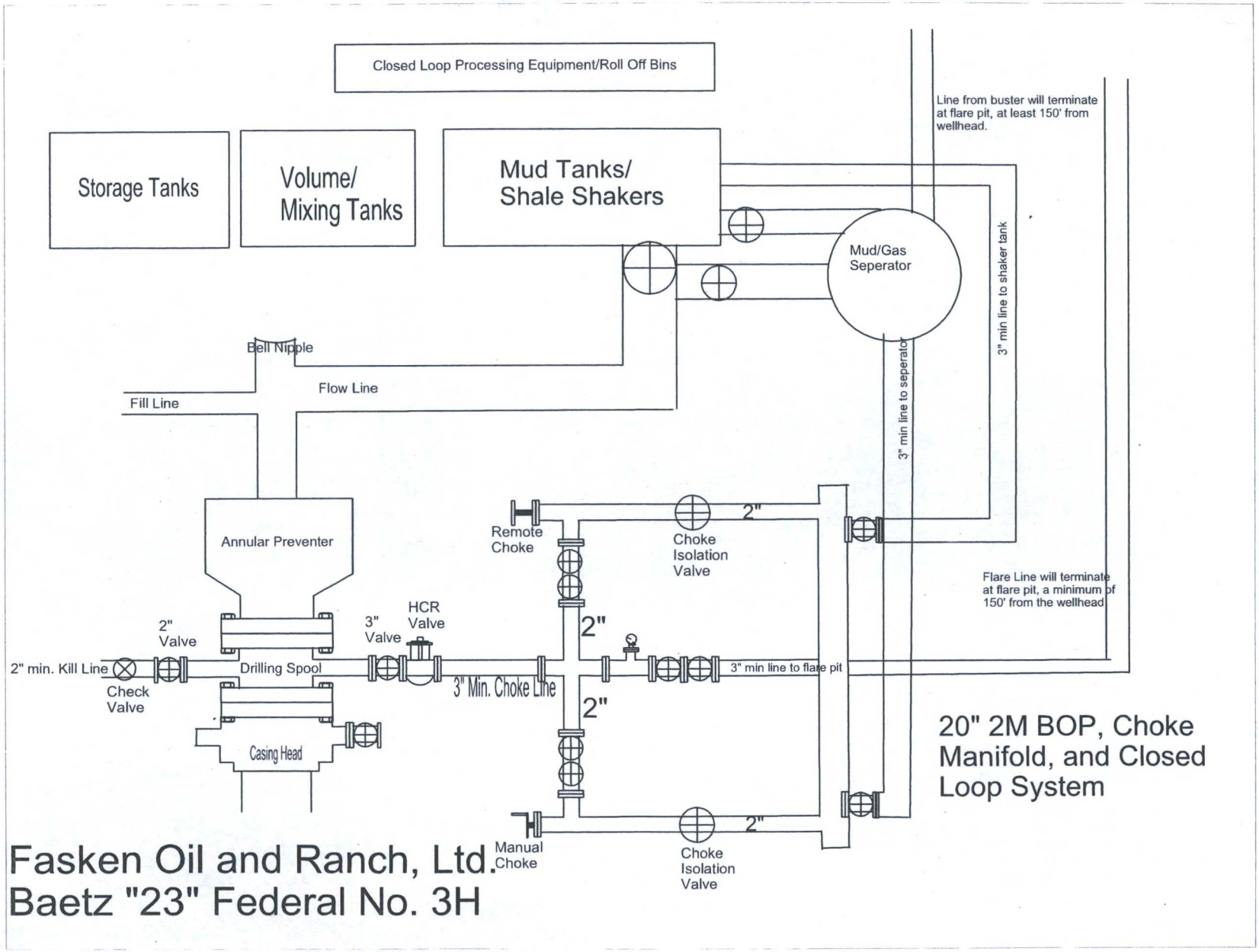
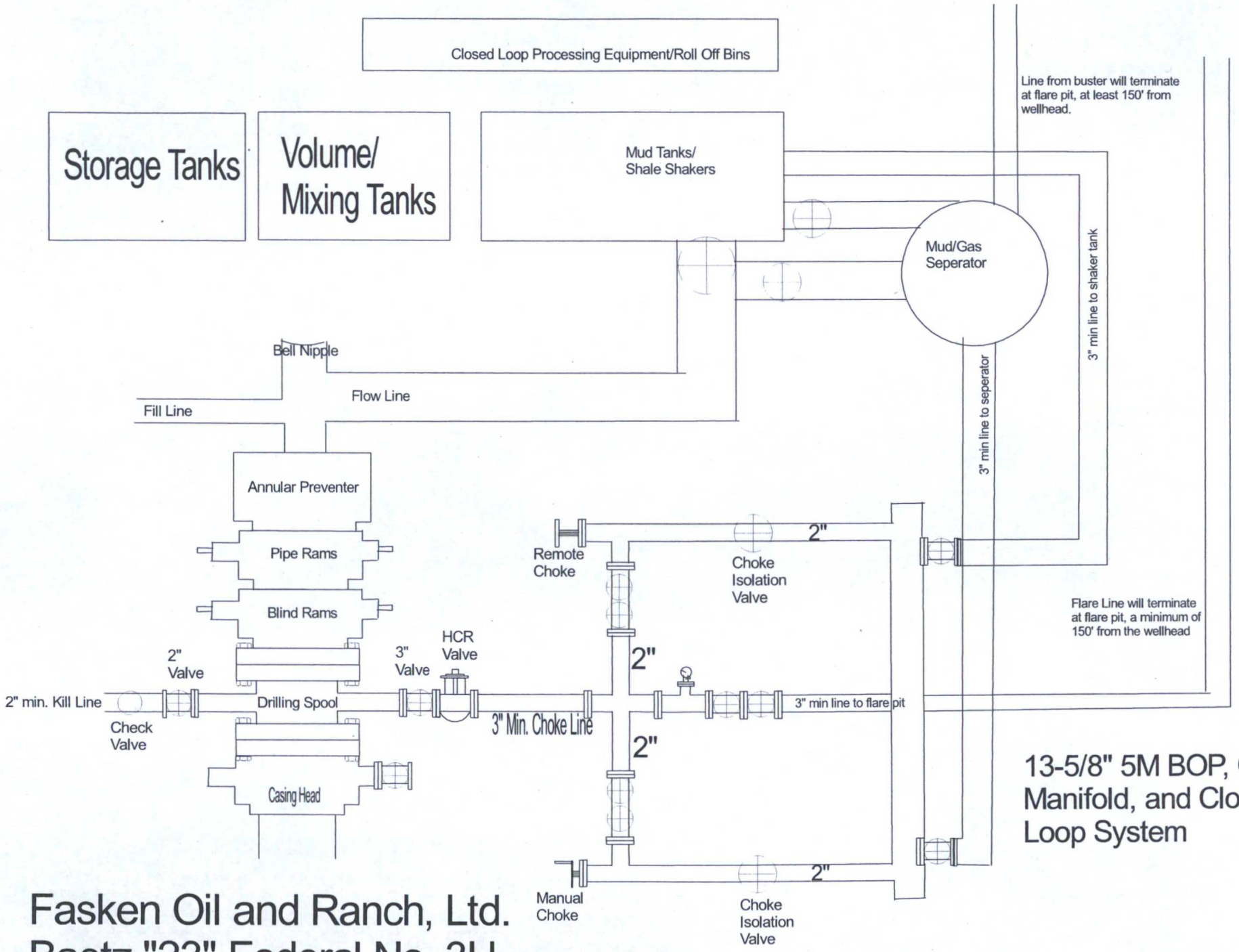


CHART NO. MC HP-30000-IIR
Copper State Rubber, Inc.
Phoenix, Arizona
DATE 4-27-11 JD
W.O. 23245
SERIAL 27472
I.D. 3-1/2"
LENGTH 40'
TYPE OF ENDS 4-1/16" 10,000 PSI API FLANGES
TYPE OF HOSE 15,000 PSI TEST
CHOKE & KILL HOSE

AMERICAN
MADE




Closed Loop Processing Equipment/Roll Off Bins
Storage Tanks
Volume/
Mixing Tanks
Mud Tanks/
Shale Shakers
Line from buster will terminate at flare pit, at least 150' from wellhead.
Mud/Gas
Seperator
3" min line to shaker tank
3" min line to seperator
Bell Nipple
Flow Line
Fill Line
Annular Preventer
Remote
Choke
Choke
Isolation
Valve
2"
Flare Line will terminate at flare pit, a minimum of 150' from the wellhead
2"
Valve
3"
Valve
HCR
Valve
2" min. Kill Line
Drilling Spool
3" min line to flare pit
Check
Valve
3" Min. Choke Line
2"
Casing Head
2"
Manual
Choke
Choke
Isolation
Valve
20" 2M BOP, Choke Manifold, and Closed Loop System
Fasken Oil and Ranch, Ltd.
Baetz "23" Federal No. 3H



13-5/8" 5M BOP, Choke Manifold, and Closed Loop System

Fasken Oil and Ranch, Ltd.
Baetz "23" Federal No. 3H

Fasken Oil and Ranch, Ltd.
Baetz "23" Federal No. 3H
Rig Plat Only
V Door East