

Split Estate

12-201

Form 3160-3
(March 2012)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia

HIGH CAVEKARST

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 20145. Lease Serial No.
NMNM 99017

6. If Indian, Allottee or Tribe Name

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

8. Lease Name and Well No.
OSAGE "18" FEE A COM #1H

9. API Well No.

10. Field and Pool, or Exploratory

North Seven Rivers; Glorieta-Yeso

11. Sec., T. R. M. or Blk. and Survey or Area
O, SEC 18, T20S, R25E12. County or Parish
EDDY13. State
NM1a. Type of work: ☒ DRILL ☐ REENTER1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

2. Name of Operator OXY USA INC

3a. Address P.O. BOX 4294
HOUSTON, TX 772103b. Phone No. (include area code)
713-513-6640

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

At surface 330' FSL & 1800' FEL

At proposed prod. zone 330' FNL & 1700' FEL

14. Distance in miles and direction from nearest town or post office*
20 miles Northwest of Carlsbad, NM15. Distance from proposed* 330'
location to nearest
property or lease line, ft.
(Also to nearest drig. unit line, if any)16. No. of acres in lease
24017. Spacing Unit dedicated to this well
16018. Distance from proposed location*
to nearest well, drilling, completed.
applied for, on this lease, ft.19. Proposed Depth
6953' MD / 2600' TVD
3500' Pilot Hole20. BLM/BIA Bond No. on file
ESB00022621. Elevations (Show whether DF, KDB, RT, GL, etc.)
3560.1'22. Approximate date work will start*
10/06/201223. Estimated duration
10 DAYS

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

Title

REGULATORY ANALYST

Name (Printed/Typed)

JENNIFER DUARTE (jennifer_duarte@oxy.com)

Date

05/31/2012

Approved by (Signature)

/s/ Don Peterson

Name (Printed/Typed)

/s/ Don Peterson

Date

SEP 26 2012

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. 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)

Roswell Controlled Water Basin

Approval Subject to General Requirements
& Special Stipulations AttachedSEE ATTACHED FOR
CONDITIONS OF APPROVAL

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-402
Revised October 12, 2005
Submit to Appropriate District Office
State Lease- 4 Copies
Fee Lease- 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-40759	Pool Code 97565	Pool Name North Seven Rivers; Gloria-Yeso
Property Code 39481	Property Name OSAGE "18" FEE A COM	Well Number 1H
OGARD No. 16696	Operator Name OXY USA INC.	Elevation 3560.1'

Surface Location

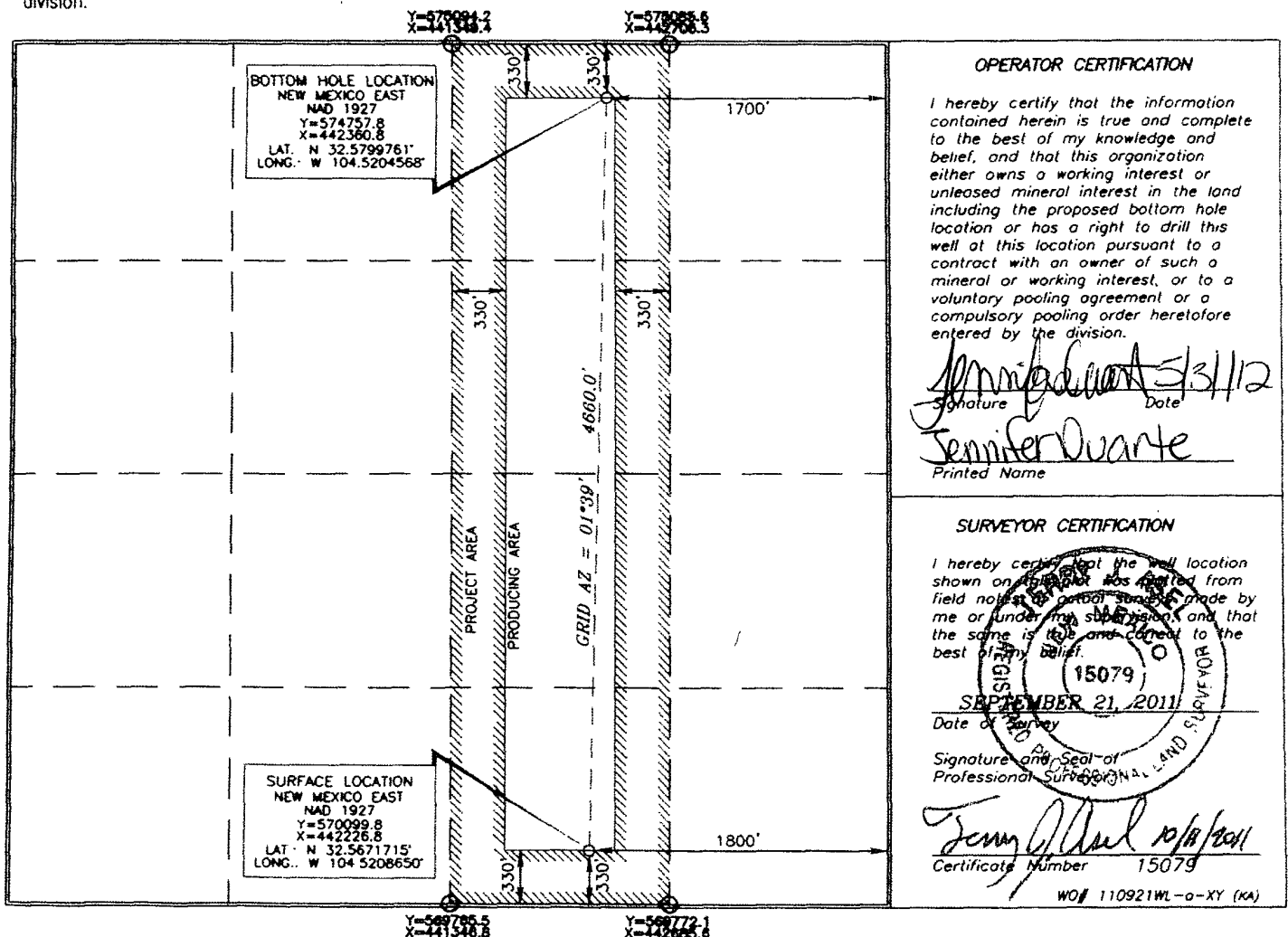
UL or lot no	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	18	20 SOUTH	25 EAST, N.M.P.M.		330'	SOUTH	1800'	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot no	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	18	20 SOUTH	25 EAST, N.M.P.M.		330'	NORTH	1700'	EAST	EDDY

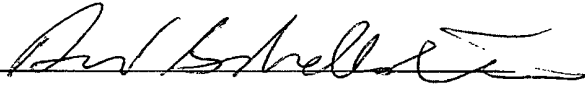
Dedicated Acres 160	Joint or Infill	Consolidation Code	Order No
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



OPERATOR CERTIFICATION

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements. Executed this 30th day of May, 2012.

Name: David Schellstede 
Position: Reservoir Management Team Leader
Address: 5 Greenway Plaza, Suite 110, Houston, TX 77046
Telephone: 713-366-5013
E-mail: (optional): david_schellstede@oxy.com
Company: OXY USA Inc.
Field Representative (if not above signatory): Dusty Weaver
Address (If different from above): P.O. Box 50250 Midland, TX 79710
Telephone (if different from above): 432-685-5723
E-mail (if different from above): calvin_weaver@oxy.com



Taylor Cann, RPL
Land Negotiator

OXY USA Inc.
Box 4294, Houston, TX 77210-4294

Phone (713) 366-5119
Cell (832) 291-9168
Fax (713) 985-1859
Taylor_Cann@oxy.com

United States Department of the Interior
Bureau of Land Management
Carlsbad Field Office
620 East Greene Street
Carlsbad, New Mexico 88220

Attention: Linda Denniston

RE: Osage 18 Fee A Com 1H

Eddy County, New Mexico

STATEMENT ACCEPTING RESPONSIBILITY FOR OPERATIONS

OPERATOR NAME: OXY USA Inc.
ADDRESS: P.O. Box 4294
Houston, Texas 77210-4294

The undersigned accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted on the leased land or portion thereof, as described below:

LEASE NO.: NMNM 99017
LEGAL DESCRIPTION:
Surface Location: 330' FSL & 1800' FEL
Bottom Hole Location: 330' FNL & 1700' FEL
Section 18-T20S-R25E
Eddy County, New Mexico

FORMATIONS: None

BOND COVERAGE: Nationwide

BLM BOND FILE NO.: ES 0136

AUTHORIZED SIGNATURE:

OXY USA Inc.

Taylor Cann

TITLE: Land Negotiator

DATE: February 7, 2012

cc: David Stewart

OXY USA Inc
Osage 18 Fee A Com # 1H
APD Data

OPERATOR NAME / NUMBER: OXY USA Inc

16696

LEASE NAME / NUMBER: Osage 18 Fee A Com # 1H

Federal Lease No:

STATE: NM

COUNTY: Eddy

SURFACE LOCATION: 330' FSL & 1800' FEL, Sec 18, T20S, R25E

BOTTOM HOLE LOCATION: 330' FNL & 1700' FEL, Sec. 18, T20S, R25E

C-102 PLAT APPROX GR ELEV: 3560.1'

EST KB ELEV: 3576.6' (16.5' KB)

1. GEOLOGIC NAME OF SURFACE FORMATION

a. Permian

2. ESTIMATED TOPS OF GEOLOGICAL MARKERS & DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS

Formation	TVD	(SS) ft	Margin of Error	Expected Fluids
T. Grayburg	0	3560	50	Form Water
T. San Andres	265	3295	50	Form Water
T. Glorietta	2270	1292	50	Oil
T. Yeso Target Depth	2600	962	50	Oil
T. BSPG Sands (Base Yeso)	3250	313	50	Oil
T. BSPG Sands (Pilot Hole TD)	3500	-60		

A. Appropriately weighted mud will be used to isolate potential gas, oil, and water zones until such time as casing can be cemented into place for zonal isolation.

B. There is no indication of the presence of fresh water.

LATERAL GREATEST PROJECTED TD 6953' MD/ 2600' TVD

OBJECTIVE: Yeso

PILOT GRATEST PROJECTED TD 3500' TVD/MD

OBJECTIVE: Top BSPG Sand

3. CASING PROGRAM

Surface Casing: 9.625" casing set at $\pm 400'$ MD/ $400'$ TVD in a 12.25" hole filled with 8.40 ppg mud

Interval	Length	Wt	Gr	Cplg	Coll Rating (psi)	Burst Rating (psi)	Jt Str (M-lbs)	ID (in)	Drift (in)	SF Coll	SF Burst	SF Ten
0' - 400'	400'	36	J-55	ST&C	2020	3520	394	8.921	8.765	14.99	2.49	3.51

Production Casing: 5.5" casing set at $\pm 6953'$ MD / $2600'$ TVD in a 8.75" hole filled with 9.20 ppg mud

Interval	Length	Wt	Gr	Cplg	Coll Rating (psi)	Burst Rating (psi)	Jt Str (M-lbs)	ID (in)	Drift (in)	SF Coll	SF Burst	SF Ten
0' - 6953'	6953'	17	J-55	LT-C	4910	5320	247	4.892	4.767	3.41	1.30	1.61

Collapse and burst loads calculated using Stress Check with actual anticipated loads.

All tubulars are new.

4. CEMENT PROGRAM:

Surface Interval

Interval	Amount sx	Ft of Fill	Type	Gal/Sk	PPG	Ft ³ /sk	24 Hr Comp
Surface (TOC: 0' - 400')							
Tail: 0' - 400' (100% Excess)	200	400	Premium Plus cement with 2% Calcium Chloride	6.39	14.80	1.35	1408 psi

Production Interval

Interval	Amount sx	Ft of Fill	Type	Gal/Sk	PPG	Ft ³ /sk	24 Hr Comp
Production (TOC: 0-6953')							
Lead: 0' - 1500' (100 % Excess)	200	1500'	Interfill C with 0.5% LAP-1 (Fluid Loss Control) and 0.25% D-AIR 5000 (Defoamer)	14.31	11.90	2.47	262 psi
Tail: 1500' - 6953' (100% Excess)	1510	5453'	50/50 Poz Premium Plus with 0.4% CFR-3 (Dispersant), 0.4% LAP-1 (LFLC), 0.25 lb/sk D-AIR 5000, 0.125 lbm/sk Poly-E-Flake	5.67	14.2	1.26	1317 psi

Pilot Hole

Interval	Amount sx	Ft of Fill	Type	Gal/Sk	PPG	Ft ³ /sk	24 Hr Comp
1st Lead: 2940' - 3500' 35% Excess	210	560'	50/50 Poz Premium with 0.25% CFR-3 (Dispersant)	5.47	14.4	1.22	1460 psi
2nd Lead: 2380' - 2940' 35% Excess	210	560'	50/50 Poz Premium with 0.25% CFR-3 (Dispersant)	5.47	14.4	1.22	1460 psi
3rd Tail: 1880' - 2380' 35% Excess	240	500'	Premium Cement with 3% Potassium Chloride (Clay Control), 0.75% CFR-3 (dispersant) and 0.1% HR-601 (Retarder)	3.51	17.5	0.95	4550 psi

5. DIRECTIONAL PLAN

Please see attached directional plan

6. PRESSURE CONTROL EQUIPMENT

Surface: 0 – 400' None.

Pilot and Production: 0 – 6953' . The minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required to drill below the surface casing shoe shall be 3000 (3M) psi . Operator will be using a 11" 5M two ram stack w/ 3M annular preventer, & 5M Choke Manifold.

- a. The 11" 5000 psi blowout prevention equipment will be installed and operational after setting the 9 5/8" surface casing and the 9.625" SOW x 11" 3K conventional wellhead; the rotating head body will be installed but the rubber will be installed when it becomes operationally necessary.
- b. The BOP and ancillary BOPE will be tested by a third party upon installation of the 9 5/8", J-55, 36ppf surface casing. All equipment will be tested to 250/3000 psi for 10 minutes and charted, except the annular, which will be tested to 70% of working pressure. This is to be in compliance with the Onshore Order # 2 which states the BOPE shall be tested to full working pressure when isolated from casing (except the annular.)
- c. The pipe rams will be functionally tested during each 24 hour period; the blind rams will be functionally tested on each trip out of the hole. These functional tests will be documented on the Daily Driller's Log. Other accessory equipment (BOPE) will include a safety valve and subs as needed to fit all drill strings, and a 2" kill line and 3 " choke line having a 5000 psi WP rating. Oxy requests that the system be tested at 5,000 psi WP.
- d. Oxy requests a variance if H&P 344 is used to drill this well to use a co-flex line between the BOP and choke manifold. See attached schematic.
Manufacturer: ContiTech Beattie Co.
Serial Number: 60220
Length: 25' Size: 3" Ends: flanges
WP rating: 5000 psi Anchors required by manufacturer: No
- e. See attached BOP & Choke manifold diagrams.

7. MUD PROGRAM:

Depth	Mud Wt ppg	Vis Sec	Fluid Loss	Type System
0 – 400' 690	8.4 – 8.8	32 – 38	NC	Fresh Water /Spud Mud
400' – 6953'	9.0 – 9.2	28 – 29	NC	Salt Gel

Remarks: Pump high viscosity sweeps as needed for hole cleaning. The mud system will be monitored visually/manually as well as with an electronic PVT. The necessary mud products for additional weight and fluid loss control will be on location at all times.

8. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT

- a. A Kelly cock will be in the drill string at all times.
- b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor unobstructed and readily accessible at all times.

- c. Hydrogen Sulfide detection equipment will be in operation after drilling out the surface casing shoe until the production casing is cemented. Breathing equipment will be on location upon drilling the surface casing shoe until total depth is reached. **If Hydrogen Sulfide is encountered, measured amounts and formations will be reported to the BLM**

9. POTENTIAL HAZARDS:

- A. H2S detection equipment will be in operation after drilling out the surface casing shoe until the production casing has been cemented. Breathing equipment will be on location from drilling out the surface shoe until production casing is cemented. If H2S is encountered the operator will comply with Onshore Order #6.
- B. No abnormal temperatures or pressures are anticipated. The highest anticipated pressure gradient is 0.459 psi/ft. Maximum anticipated bottom hole pressure is 1195 psi.
- C. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely.

10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS

Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon as possible after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 35 days. If production casing is run, then an additional 30 days will be needed to complete the well and construct surface facilities and/or lay flow lines in order to place well on production.

10. WIRELINE LOGGING

Run Gamma/Neutron/Density/Resistivity from TD to Surface casing, with Gamma/Neutron to surface.

COMPANY PERSONNEL:

<u>Name</u>	<u>Title</u>	<u>Office Phone</u>	<u>Mobile Phone</u>
Carlos Mercado	Drilling Engineer	(713)366-5418	(713) 455-3481
Victor Guerra	Drilling Engineer Supervisor	(713)215-7256	(832) 659-3911
Sergio Abauat	Drilling Superintendent	(713)366-5689	(832) 531-5636
Douglas Chester	Drilling Manager	(713)366-5194	(713) 918-9124



Scientific Drilling

OXY

Eddy County, New Mexico: Osage

Osage

Osage 18 Fee A Com 1H

API No.:30-015-21451

Original Wellbore

Plan: Design #1

Standard Planning Report

05 January, 2012





Project: Eddy County, New Mexico: Osage
 Site: Osage
 Well: Osage 18 Fee A Com 1H
 Wellbore: Original Wellbore
 Design: Design #1



PROJECT DETAILS: Eddy County, New Mexico: Osage

Geodetic System: US State Plane 1927 (Exact solution)
 Datum: NAD 1927 (NADCON CONUS)
 Ellipsoid: Clarke 1866
 Zone: New Mexico East 3001
 System Datum: Mean Sea Level

SITE DETAILS: Osage

Northing: 570099.80
 Easting: 442226.80
 Elevation: 3560.10
 KB @ 3576.60usft (H&P 345)

CASING DETAILS

TVD	MD	Size
400.00	400.00	9-5/8
2600.00	6952.53	5-1/2

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1883.80	0.00	0.00	1883.80	0.00	0.00	0.00	0.00	
3008.80	90.00	1.65	2600.00	715.90	20.59	8.00	716.20	
6952.53	90.00	1.65	2600.00	4658.00	134.00	0.00	4659.93	BHL

FORMATION TOP DETAILS

TVD	MD	Formation
413.00	413.00	T Grayburg
699.00	699.00	T San Andres
2284.00	2308.45	T Glorieta/Yeso
2600.00	3008.80	Lateral TGT Window

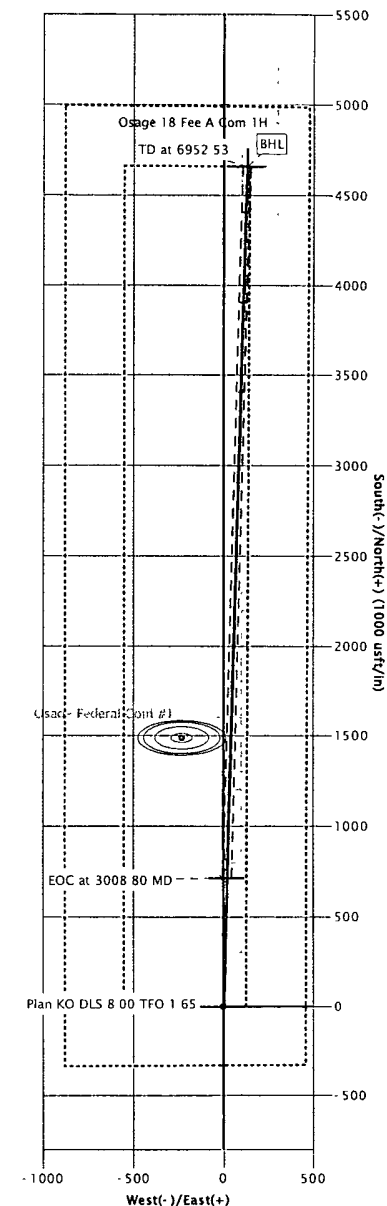
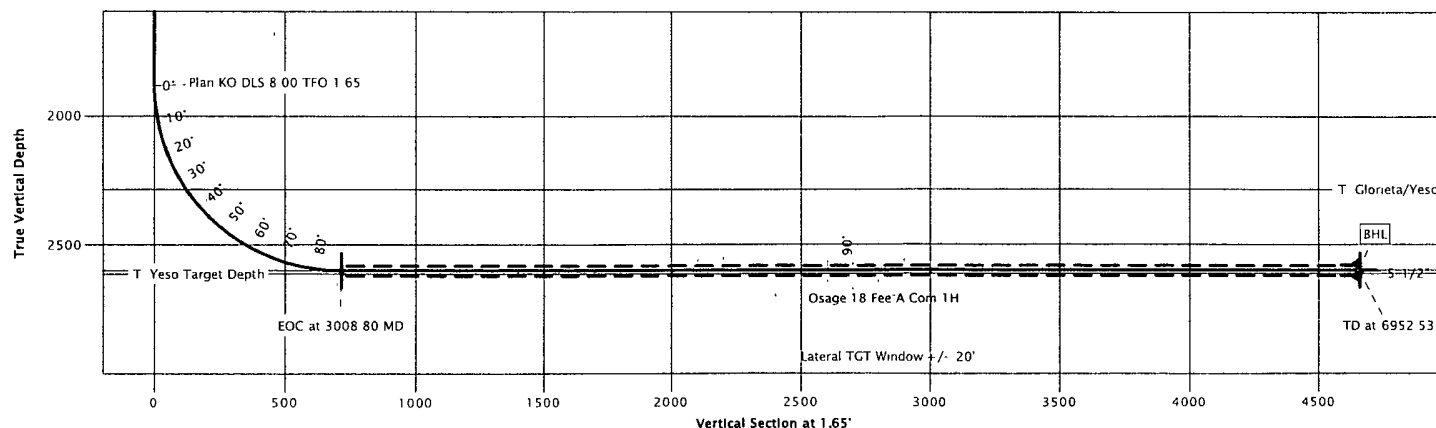
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
BHL	2600.00	4658.00	134.00	574757.80	442360.80	Point
plan hits target center						
Lateral TGT Window +/- 20'	2600.00	715.90	20.59	570815.70	442247.39	Rectangle
plan misses target center by 0.01usft at 3008.80usft MD (2600.00 TVD, 715.90 N, 20.59 E)						



Azimuths to Grid North
 True North 0.10°
 Magnetic North 8.08°

Magnetic Field
 Strength 48658.6snT
 Dip Angle 60.33°
 Date 01/05/2012
 Model ICRF2010



Database:	EDM-OXY-DB	Local Co-ordinate Reference:	Well Osage 18 Fee A Com 1H
Company:	OXY	TVD Reference:	KB @ 3576 60usft (H&P 345)
Project:	Eddy County, New Mexico Osage	MD Reference:	KB @ 3576 60usft (H&P 345)
Site:	Osage	North Reference:	Grid
Well:	Osage 18 Fee A Com 1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Design #1		

Project:	Eddy County, New Mexico. Osage, New Mexico, Osage 18		
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:	Osage		
Site Position:		Northing:	570,099 80 usft
From:	Map	Easting:	442,226 80 usft
Position Uncertainty:	0 00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 34' 1 817 N
		Longitude:	104° 31' 15 114 W
		Grid Convergence:	-0.10 °

Well:	Osage 18 Fee A Com 1H		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0 00 usft	Easting:
Position Uncertainty	0 00 usft		Wellhead Elevation:
			Ground Level:

Wellbore:	Original Wellbore		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	01/05/12	7 98
			Dip Angle
			60.33
			Field Strength
			48,659

Design:	Design #1		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth:
			0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0 00	0 00	0 00
			Direction
			(°)
			1 65

Plan Sections:										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0 00	0 00	0 00	0.00	0 00	0.00	
1,883.80	0 00	0 00	1,883.80	0 00	0 00	0.00	0 00	0 00	0 00	
3,008.80	90 00	1 65	2,600.00	715.90	20 59	8.00	8.00	0.15	1 65	
6,952.53	90 00	1 65	2,600 00	4,658 00	134.00	0.00	0 00	0.00	0.00 BHL	

Database:	EDM-OXY-DB	Local Co-ordinate Reference:	Well Osage 18 Fee A Com 1H
Company:	OXY	TVD Reference:	KB @ 3576 60usft (H&P 345)
Project:	Eddy County, New Mexico Osage	MD Reference:	KB @ 3576 60usft (H&P 345)
Site:	Osage	North Reference:	Grid
Well:	Osage 18 Fee A Com 1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
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
9 5/8"									
413.00	0.00	0.00	413.00	0.00	0.00	0.00	0.00	0.00	0.00
T. Grayburg									
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
699.00	0.00	0.00	699.00	0.00	0.00	0.00	0.00	0.00	0.00
T. San Andres									
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
1,883.80	0.00	0.00	1,883.80	0.00	0.00	0.00	0.00	0.00	0.00
Plan KO Start DLS 8.00 TFO 1.65									
1,900.00	1.30	1.65	1,900.00	0.18	0.01	0.18	8.00	8.00	0.00
1,950.00	5.30	1.65	1,949.91	3.06	0.09	3.06	8.00	8.00	0.00
2,000.00	9.30	1.65	1,999.49	9.40	0.27	9.41	8.00	8.00	0.00
2,050.00	13.30	1.65	2,048.51	19.19	0.55	19.20	8.00	8.00	0.00
2,100.00	17.30	1.65	2,096.73	32.37	0.93	32.39	8.00	8.00	0.00
2,150.00	21.30	1.65	2,143.91	48.88	1.41	48.90	8.00	8.00	0.00
2,200.00	25.30	1.65	2,189.83	68.65	1.97	68.67	8.00	8.00	0.00
2,250.00	29.30	1.65	2,234.25	91.56	2.63	91.60	8.00	8.00	0.00
2,300.00	33.30	1.65	2,276.97	117.52	3.38	117.57	8.00	8.00	0.00
2,308.45	33.97	1.65	2,284.00	122.20	3.52	122.25	8.00	8.00	0.00
T. Glorieta/Yeso									
2,350.00	37.30	1.65	2,317.77	146.39	4.21	146.45	8.00	8.00	0.00
2,400.00	41.30	1.65	2,356.45	178.04	5.12	178.11	8.00	8.00	0.00
2,450.00	45.30	1.65	2,392.84	212.30	6.11	212.39	8.00	8.00	0.00
2,500.00	49.30	1.65	2,426.74	249.03	7.16	249.13	8.00	8.00	0.00
2,550.00	53.30	1.65	2,458.00	288.02	8.29	288.14	8.00	8.00	0.00
2,600.00	57.30	1.65	2,486.46	329.10	9.47	329.24	8.00	8.00	0.00
2,650.00	61.30	1.65	2,511.99	372.06	10.70	372.22	8.00	8.00	0.00
2,700.00	65.30	1.65	2,534.45	416.70	11.99	416.88	8.00	8.00	0.00
2,750.00	69.30	1.65	2,553.74	462.80	13.31	462.99	8.00	8.00	0.00
2,800.00	73.30	1.65	2,569.78	510.13	14.68	510.34	8.00	8.00	0.00
2,850.00	77.30	1.65	2,582.46	558.46	16.07	558.70	8.00	8.00	0.00
2,900.00	81.30	1.65	2,591.75	607.56	17.48	607.82	8.00	8.00	0.00
2,950.00	85.30	1.65	2,597.58	657.19	18.91	657.46	8.00	8.00	0.00
3,000.00	89.30	1.65	2,599.94	707.10	20.34	707.40	8.00	8.00	0.00
3,008.80	90.00	1.65	2,600.00	715.90	20.59	716.20	8.00	8.00	0.00

EOC Start 3943.73 hold at 3008.80 MD - Lateral TGT Window - Lateral TGT Window (Osage 18 Fee A Com Original We

Database:	EDM-OXY-DB	Local Co-ordinate Reference:	Well Osage 18 Fee A Com 1H
Company:	OXY	TVD Reference:	KB @ 3576.60usft (H&P 345)
Project:	Eddy County, New Mexico. Osage	MD Reference:	KB @ 3576.60usft (H&P 345)
Site:	Osage	North Reference:	Grid
Well:	Osage 18 Fee A Com 1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/S (usft)	+E/W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,100.00	90.00	1.65	2,600.00	807.06	23.22	807.40	0.00	0.00	0.00
3,200.00	90.00	1.65	2,600.00	907.02	26.09	907.40	0.00	0.00	0.00
3,300.00	90.00	1.65	2,600.00	1,006.98	28.97	1,007.40	0.00	0.00	0.00
3,400.00	90.00	1.65	2,600.00	1,106.94	31.84	1,107.40	0.00	0.00	0.00
3,500.00	90.00	1.65	2,600.00	1,206.90	34.72	1,207.40	0.00	0.00	0.00
3,600.00	90.00	1.65	2,600.00	1,306.86	37.60	1,307.40	0.00	0.00	0.00
3,700.00	90.00	1.65	2,600.00	1,406.82	40.47	1,407.40	0.00	0.00	0.00
3,800.00	90.00	1.65	2,600.00	1,506.77	43.35	1,507.40	0.00	0.00	0.00
3,900.00	90.00	1.65	2,600.00	1,606.73	46.22	1,607.40	0.00	0.00	0.00
4,000.00	90.00	1.65	2,600.00	1,706.69	49.10	1,707.40	0.00	0.00	0.00
4,100.00	90.00	1.65	2,600.00	1,806.65	51.97	1,807.40	0.00	0.00	0.00
4,200.00	90.00	1.65	2,600.00	1,906.61	54.85	1,907.40	0.00	0.00	0.00
4,300.00	90.00	1.65	2,600.00	2,006.57	57.72	2,007.40	0.00	0.00	0.00
4,400.00	90.00	1.65	2,600.00	2,106.53	60.60	2,107.40	0.00	0.00	0.00
4,500.00	90.00	1.65	2,600.00	2,206.48	63.48	2,207.40	0.00	0.00	0.00
4,600.00	90.00	1.65	2,600.00	2,306.44	66.35	2,307.40	0.00	0.00	0.00
4,700.00	90.00	1.65	2,600.00	2,406.40	69.23	2,407.40	0.00	0.00	0.00
4,800.00	90.00	1.65	2,600.00	2,506.36	72.10	2,507.40	0.00	0.00	0.00
4,900.00	90.00	1.65	2,600.00	2,606.32	74.98	2,607.40	0.00	0.00	0.00
5,000.00	90.00	1.65	2,600.00	2,706.28	77.85	2,707.40	0.00	0.00	0.00
5,100.00	90.00	1.65	2,600.00	2,806.24	80.73	2,807.40	0.00	0.00	0.00
5,200.00	90.00	1.65	2,600.00	2,906.19	83.60	2,907.40	0.00	0.00	0.00
5,300.00	90.00	1.65	2,600.00	3,006.15	86.48	3,007.40	0.00	0.00	0.00
5,400.00	90.00	1.65	2,600.00	3,106.11	89.36	3,107.40	0.00	0.00	0.00
5,500.00	90.00	1.65	2,600.00	3,206.07	92.23	3,207.40	0.00	0.00	0.00
5,600.00	90.00	1.65	2,600.00	3,306.03	95.11	3,307.40	0.00	0.00	0.00
5,700.00	90.00	1.65	2,600.00	3,405.99	97.98	3,407.40	0.00	0.00	0.00
5,800.00	90.00	1.65	2,600.00	3,505.95	100.86	3,507.40	0.00	0.00	0.00
5,900.00	90.00	1.65	2,600.00	3,605.91	103.73	3,607.40	0.00	0.00	0.00
6,000.00	90.00	1.65	2,600.00	3,705.86	106.61	3,707.40	0.00	0.00	0.00
6,100.00	90.00	1.65	2,600.00	3,805.82	109.48	3,807.40	0.00	0.00	0.00
6,200.00	90.00	1.65	2,600.00	3,905.78	112.36	3,907.40	0.00	0.00	0.00
6,300.00	90.00	1.65	2,600.00	4,005.74	115.24	4,007.40	0.00	0.00	0.00
6,400.00	90.00	1.65	2,600.00	4,105.70	118.11	4,107.40	0.00	0.00	0.00
6,500.00	90.00	1.65	2,600.00	4,205.66	120.99	4,207.40	0.00	0.00	0.00
6,600.00	90.00	1.65	2,600.00	4,305.62	123.86	4,307.40	0.00	0.00	0.00
6,700.00	90.00	1.65	2,600.00	4,405.57	126.74	4,407.40	0.00	0.00	0.00
6,800.00	90.00	1.65	2,600.00	4,505.53	129.61	4,507.40	0.00	0.00	0.00
6,900.00	90.00	1.65	2,600.00	4,605.49	132.49	4,607.40	0.00	0.00	0.00
6,952.53	90.00	1.65	2,600.00	4,658.00	134.00	4,659.93	0.00	0.00	0.00
TD at 6952.53 - BHL									

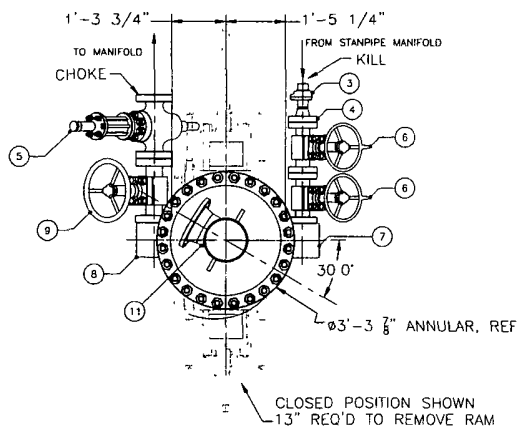
Database:	EDM-OXY-DB	Local Co-ordinate Reference:	Well Osage 18 Fee A Com 1H
Company:	OXY	TVD Reference:	KB @ 3576.60usft (H&P 345)
Project:	Eddy County, New Mexico: Osage	MD Reference:	KB @ 3576.60usft (H&P 345)
Site:	Osage	North Reference:	Grid
Well:	Osage 18 Fee A Com 1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
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
Lateral TGT Window (O:		0 00	1 65	2,600 00	715.90	20 59	570,815.70	442,247 39	32° 34' 8 902 N 104° 31' 14 888 W
- plan misses target center by 0 01usft at 3008 80usft MD (2600.00 TVD, 715.90 N, 20.59 E)									
- Rectangle (sides W0.00 H3,939 00 D40 00)									
BHL		0 00	0.00	2,600 00	4,658.00	134 00	574,757 80	442,360 80	32° 34' 47.914 N 104° 31' 13.644 W
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
400 00	400 00	9 5/8"	9-5/8	12-1/4	
6,952 53	2,600 00	5 1/2"	5-1/2	6	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
413.00	413 00	T Grayburg			
699 00	699.00	T. San Andres			
2,308 45	2,284 00	T Gioneta/Yeso			
3,008 80	2,600.00	Lateral TGT Window		0.00	1 65

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
1,883 80	1,883.80	0 00	0.00	Plan KO Start DLS 8 00 TFO 1 65	
3,008.80	2,600 00	715.90	20.59	EOC Start 3943.73 hold at 3008.80 MD	
6,952.53	2,600.00	4,658.00	134 00	TD at 6952.53	

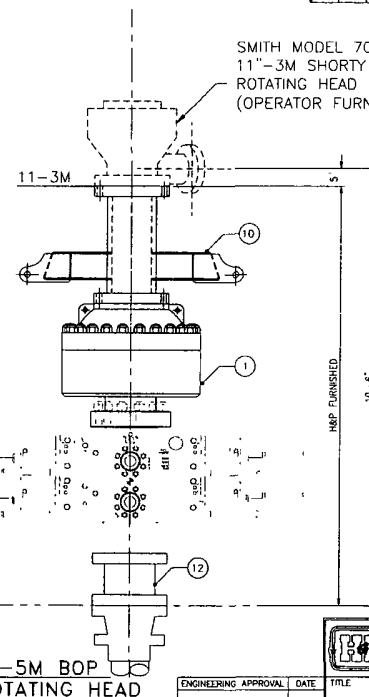
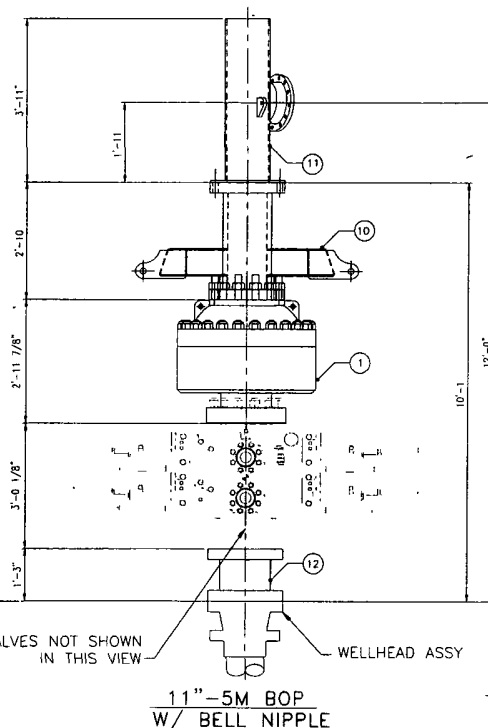
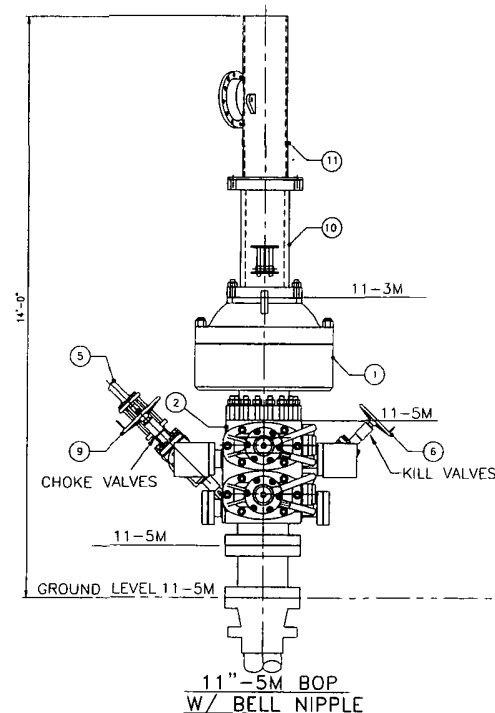


PROPER TORQUE FOR BOLTS				
COMPONENT	FLANGE SIZE & RATING	BOLT SIZE	TORQUE (FT/LBS)	
			CF=0.07	CF=0.13
SPOOLS, ANNULAR & RAMS	11"x5M	1 7/8" DIA	1890	3330
BLOCKS	3 1/8x5M	1 1/8" DIA	401	686
CHOKE VALVES	3 1/8x5M	1 1/8" DIA	401	686
KILL VALVES	2 1/16x5M	7/8" DIA	188	319

BILL OF MATERIAL				
ITEM NO.	QTY	DESCRIPTION	PART NUMBER	WEIGHT
1	1	11-5M BOP ASSEMBLY		
1	1	ANNULAR, 11x3M BOLTED TYPE		6005
2	1	BOP DOUBLE RAM		7600
4		RAM ELEMENTS		444
3	1	HAMMER UNION, 2-1502# XXH (BW)		5
4	1	FLANGE, WN 2 1/16-5M API		42
5	1	VALVE, GATE FLS-HCR 3 1/8-5M		398
6	2	VALVE, GATE 2 1/16-5M		350
7	1	90° STUDDED BLOCK, 3 1/8-5M X 2 1/16-5M		240
8	1	90° STUDDED BLOCK, 3 1/8-5M X 3 1/8-5M		250
9	2	VALVE, GATE 3 1/8-5M		720
10	1	BELL NIPPLE BOP LIFTING SECTION	MC F4M-H-318 DIA	780
11	1	BELL NIPPLE EXTENSION	MC F4M-H-318 DIA	396
12	1	11"-5M X 11"-5M X 1'-3" LONG SPACER		600
		SPOOL - WORKING PRESSURE 5000 PSI		

HARDWARE				
ITEM NO.	QTY	DESCRIPTION	PART NUMBER	WEIGHT
		RINGS AND BOLTS		400

APPROX TOTAL WEIGHT = 18,228 LBS.



SMITH MODEL 7068
11"-3M SHORTY
ROTATING HEAD
(OPERATOR FURNISHED)



PROPRIETARY
THIS DRAWING AND THE IDEAS AND INFORMATION INCLUDED IN THIS DRAWING ARE PROPRIETARY AND ARE NOT TO BE REPRODUCED, DISTRIBUTED OR DISCLOSED IN ANY MANNER, WITHOUT THE PRIOR WRITTEN CONSENT OF A DUTY AUTHORIZED OFFICER OF HELMERICH & PAYNE INT'L DRILLING CO.

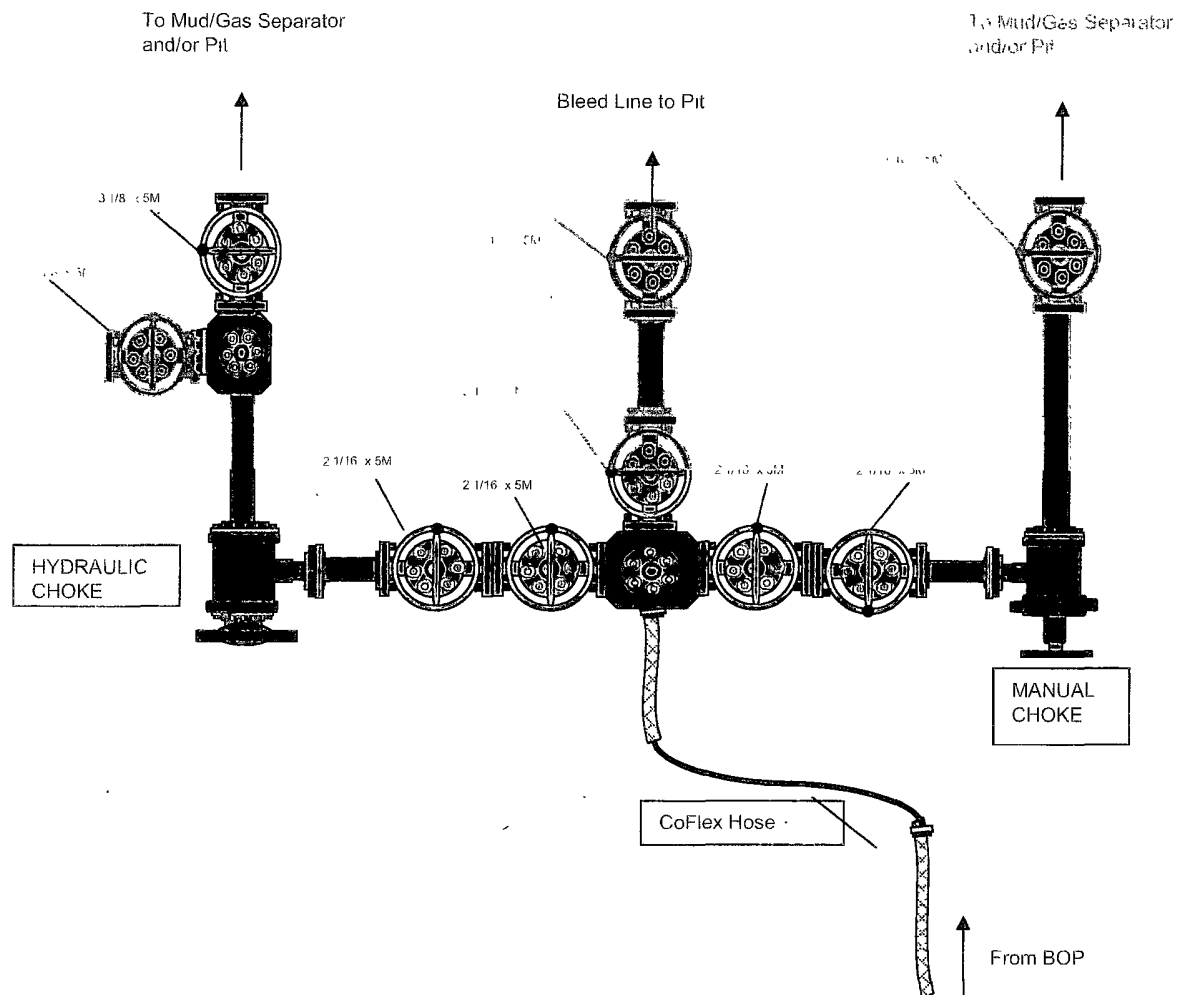
NOTES:
1 ALL BOP RAMS SHOWN ARE SHAFFER MODEL LXT
11-5M PSI WP - FLANGED BOTTOM AND STUDDED TOP

11"-5M BOP
W/ ROTATING HEAD

ENGINEERING APPROVAL DATE

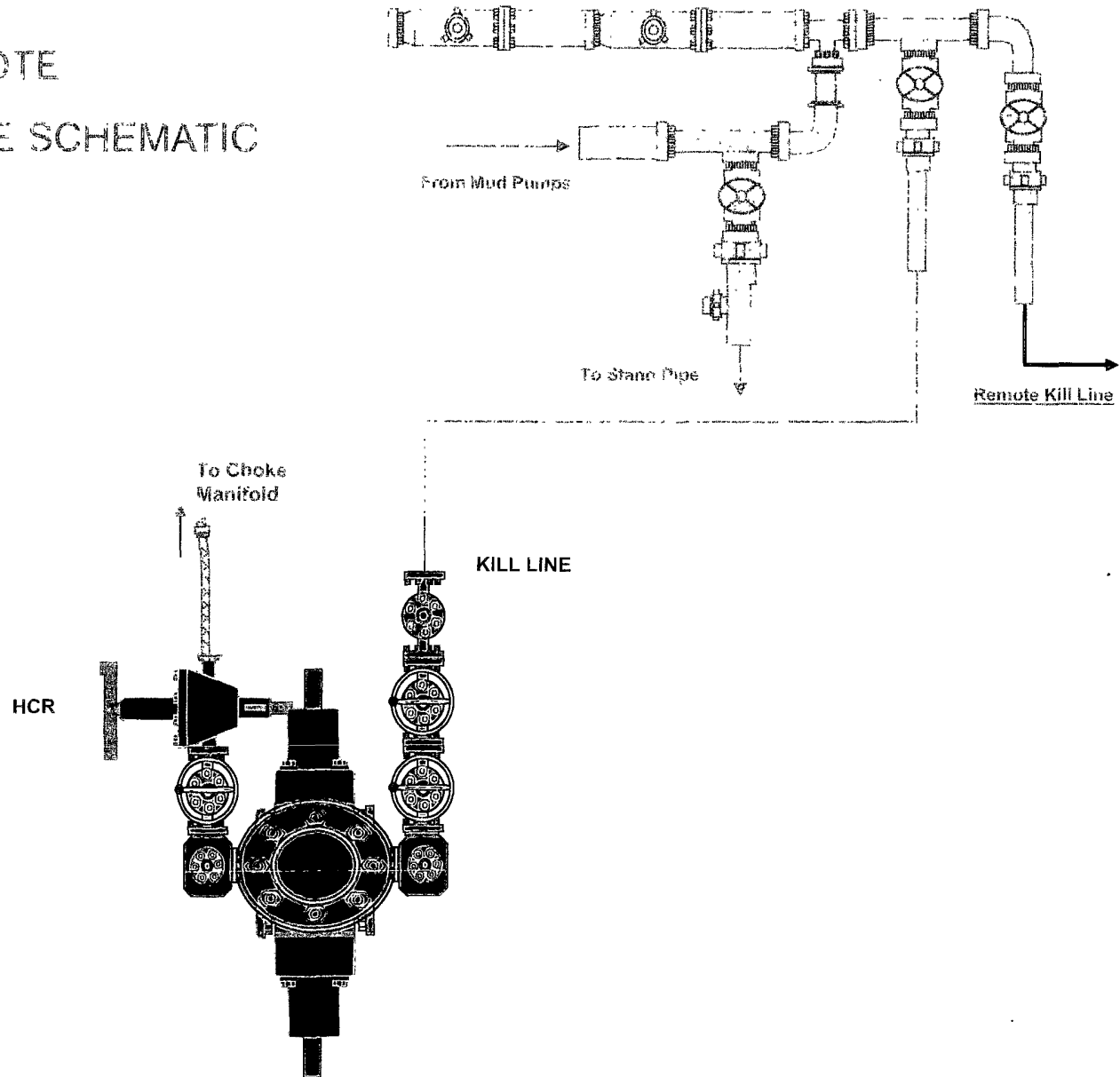
		HELMERICH & PAYNE INTERNATIONAL DRILLING CO	
TITLE		11-5M BOP EQUIPMENT GENERAL ARRANGEMENT	
CUSTOMER		OXY-PERMAN	
PROJECT		F4M	
DRAWN	DJOHNSON	DATE	07/14/08
SCALE	NTS	DWG NO	F4M-H-320
REV	DATE	DESCRIPTION	BY
1	08/08/08	ADDED 1 OF 4 SHITS WAS 1 OF 3	DRJ
2	07/29/08	SHEET 1 OF 3 WAS 1 OF 5	DRJ
3			
4			

5M CHOKE MANIFOLD CONFIGURATION



SM REMOTE

KILL LINE SCHEMATIC





**ISSUED FOR
FABRICATION**
October-23-2008

**DRAFTSMAN
ENGINEER**

PROPRIETARY

THIS DRAWING AND THE IDEAS AND INFORMATION INCLUDED
HEREIN ARE PROPRIETARY AND ARE NOT TO BE
REPRODUCED, DISTRIBUTED OR DISCLOSED IN ANY MANNER
WITHOUT THE PRIOR WRITTEN CONSENT OF A DULY AUTHORIZED
OFFICER OF HELMERICH & PAYNE LITE DRILLING CO.

ALTERNATE FLOWLINE ARRANGEMENT
(FOR RIGS 345 THRU 347 ONLY)



HELMERICH & PAYNE
INTERNATIONAL DRILLING CO

MUD SYSTEM
INTERCONNECT PIPING ASSEMBLY

CUSTOMER	OXY PERMIAN
----------	-------------

PROJECT	F4M
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WRS	
DR-1	DRAWN DJOHNSC

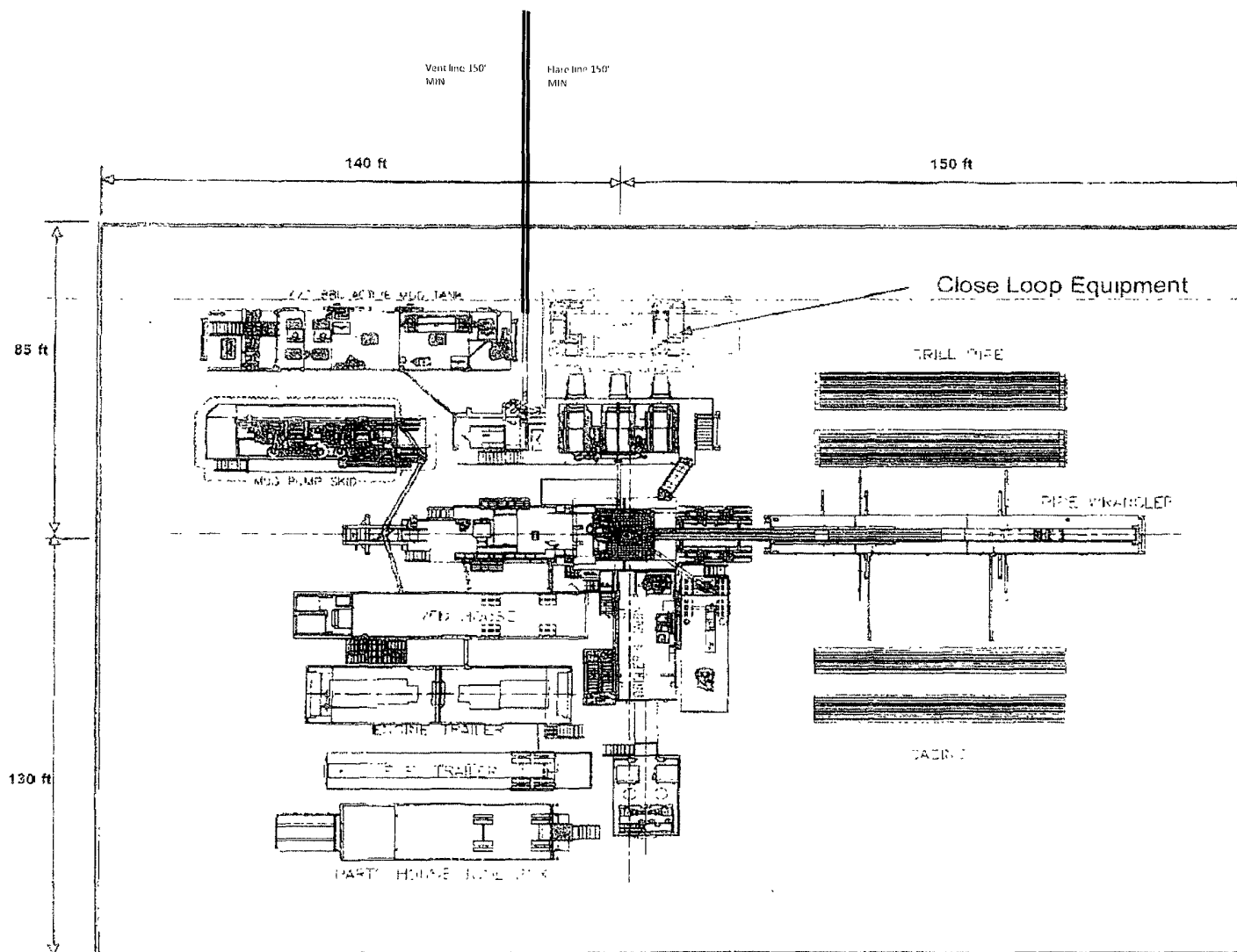
SCALE	3/16" = 1'-0"	SHEET 1 OF 2
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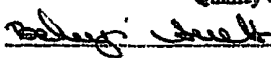
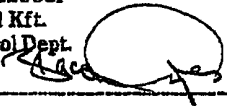
F4M-H--568

C

		
	10/23/08	POW-HIGH & HOT POW-HIGH 14.02 ADD HOT ELEMENTS ADD CLIPS TO THE TOP TWO & REMAIN 1 & 6. CORRECT W/ 1'S FOR STUD & BURY 2 & 11
	08/04/08	WIDE SIDE TRAIL CLOSER TO SHOWER UPDATED PHOTO
	08/05/08	ADDED SH1 2 & BOM
	07/17/08	ADDED K1-MY PIPING TO POP-OFF
REV	DATE	DESCRIPTION

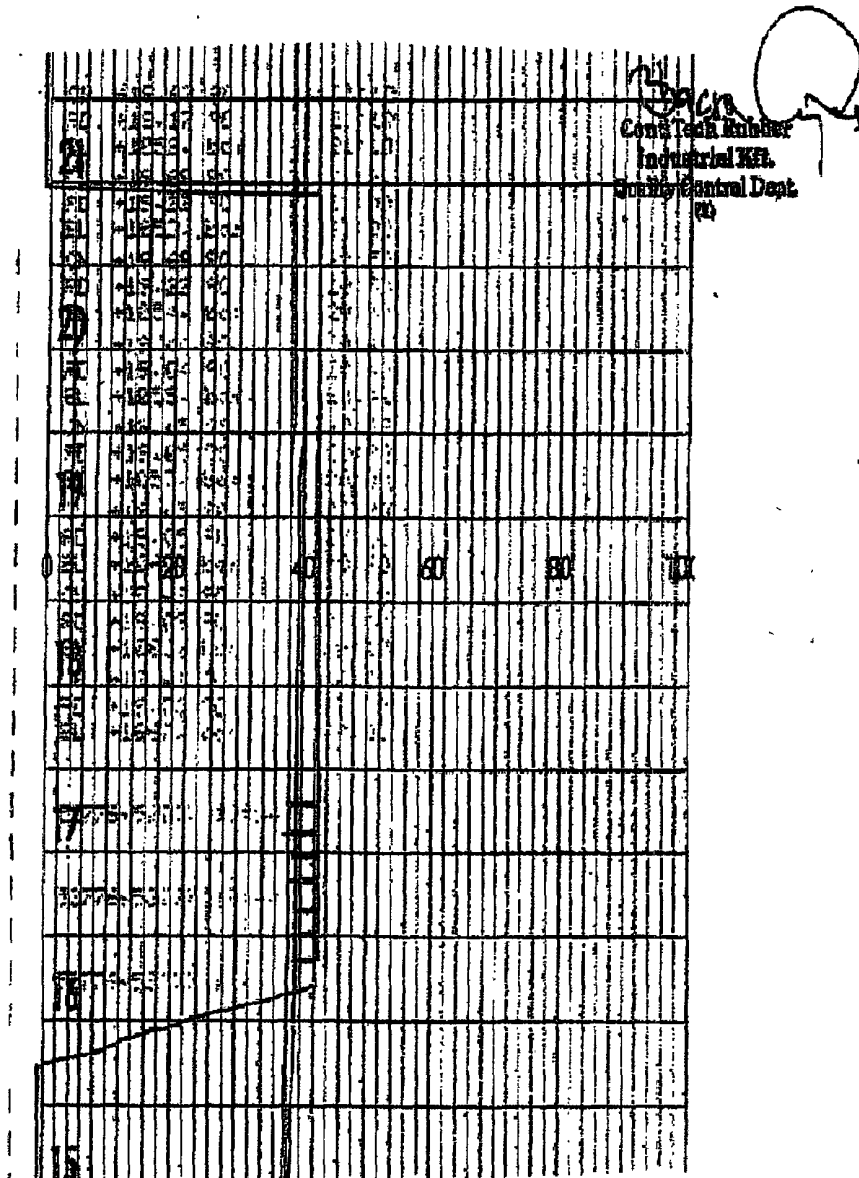
REVISED 10/14/2000



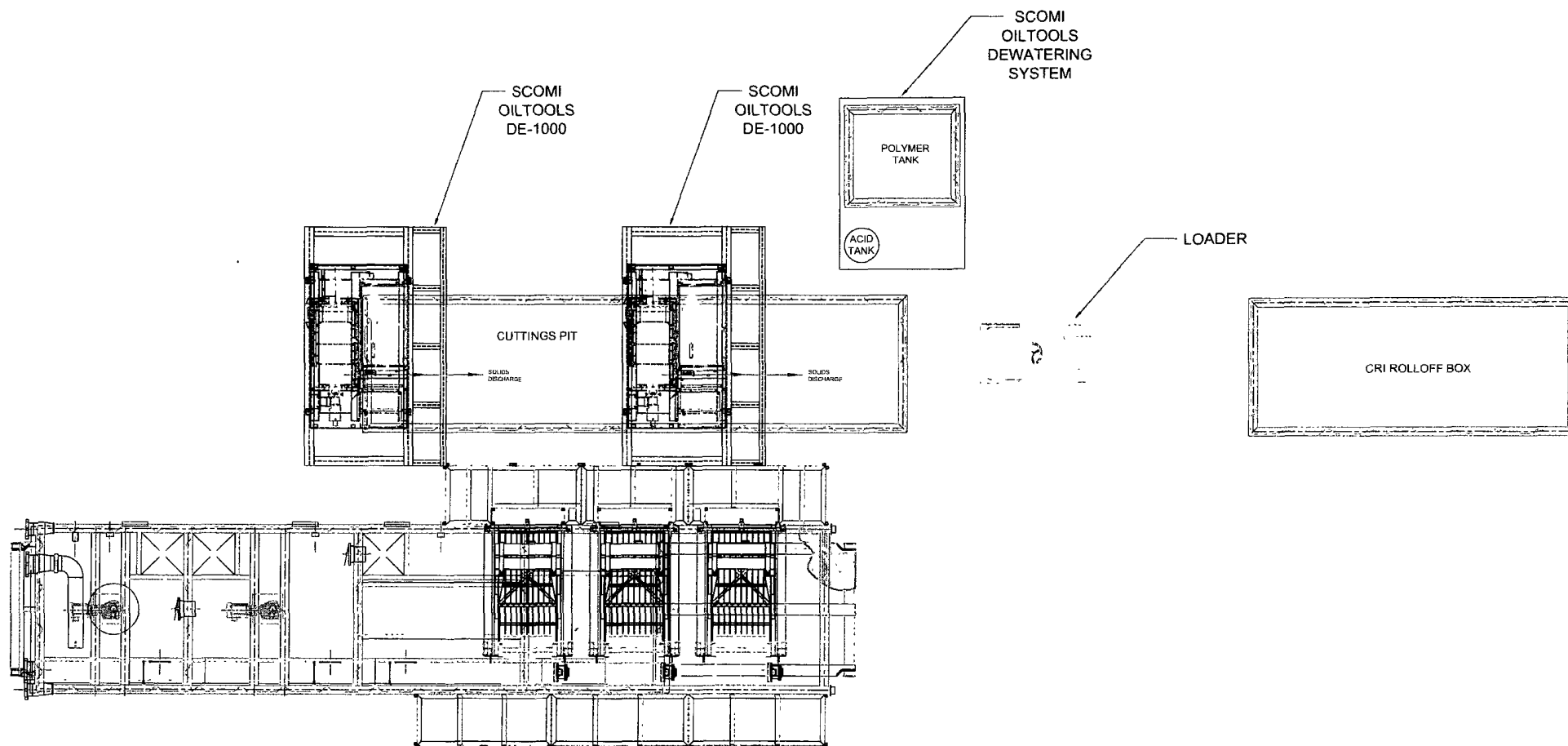
QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 128	
PURCHASER: ContiTech Beattie Co.				P.O. N°: 004721	
CONTITECH ORDER N°: 490278		HOSE TYPE: 3" ID		Choke and Kill Hose	
HOSE SERIAL N°: 60220		NOMINAL / ACTUAL LENGTH: 7,62 m / 7,64 m			
W.P. 34,48 MPa	5000 psi	T.P. 68,9 MPa	10000 psi	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		160 159		AISI 4130	
4 1/16" Flange end				AISI 4130	
ASSET NO. : 66-0606				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	
07. February 2011.				ContiTech Rubber Industrial Kft. Quality Control Dept.  	

Coflex Hose Certification

Page: 1/1



ITEM		QTY	BILL OF MATERIAL DESCRIPTION	LENGTH	WEIGHT
------	--	-----	---------------------------------	--------	--------



REV	DESCRIPTION	BY	CHK	APP	DATE

1. ALL STRUCTURAL MATERIAL SHALL BE ASTM - A36
2. ALL PIPE SCH 40 MATERIAL SA 108 OR 9
3. ALL FLANGES SHALL BE SORF 150# & MATERIAL SA 105
4. ALL FITTINGS SCH 40 MATERIAL SHALL BE SA 234 OR WPB
5. TANK FABRICATION SHALL BE IN ACCORDANCE WITH API-650

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TITLE CLOSED LOOP SYSTEM BASIC LAYOUT OXY - H&P - FLEX 4 M			
DRAWN BY PDL	DATE 3/30/09	CHECKED BY	DATE
APPROVED	DATE	SCALE N.T.S.	ACAD. DRG. D

581 N. Sam Houston Parkway East, Suite 300,
Houston, Texas 77060
PHONE: (811)-880-8016, FAX: (811)-880-8809

JOB NO.	DRAWING NO. 521S-027	PCB
---------	--------------------------------	-----

75'

40'

SCOMI OILTOOLS DEWATERING SYSTEM

POLYMER TANK

ACID TANK

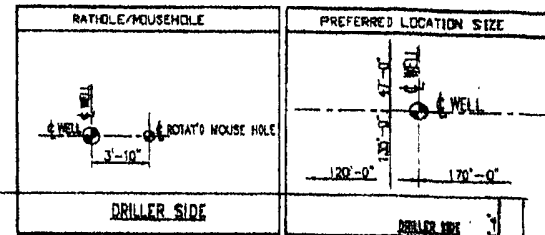
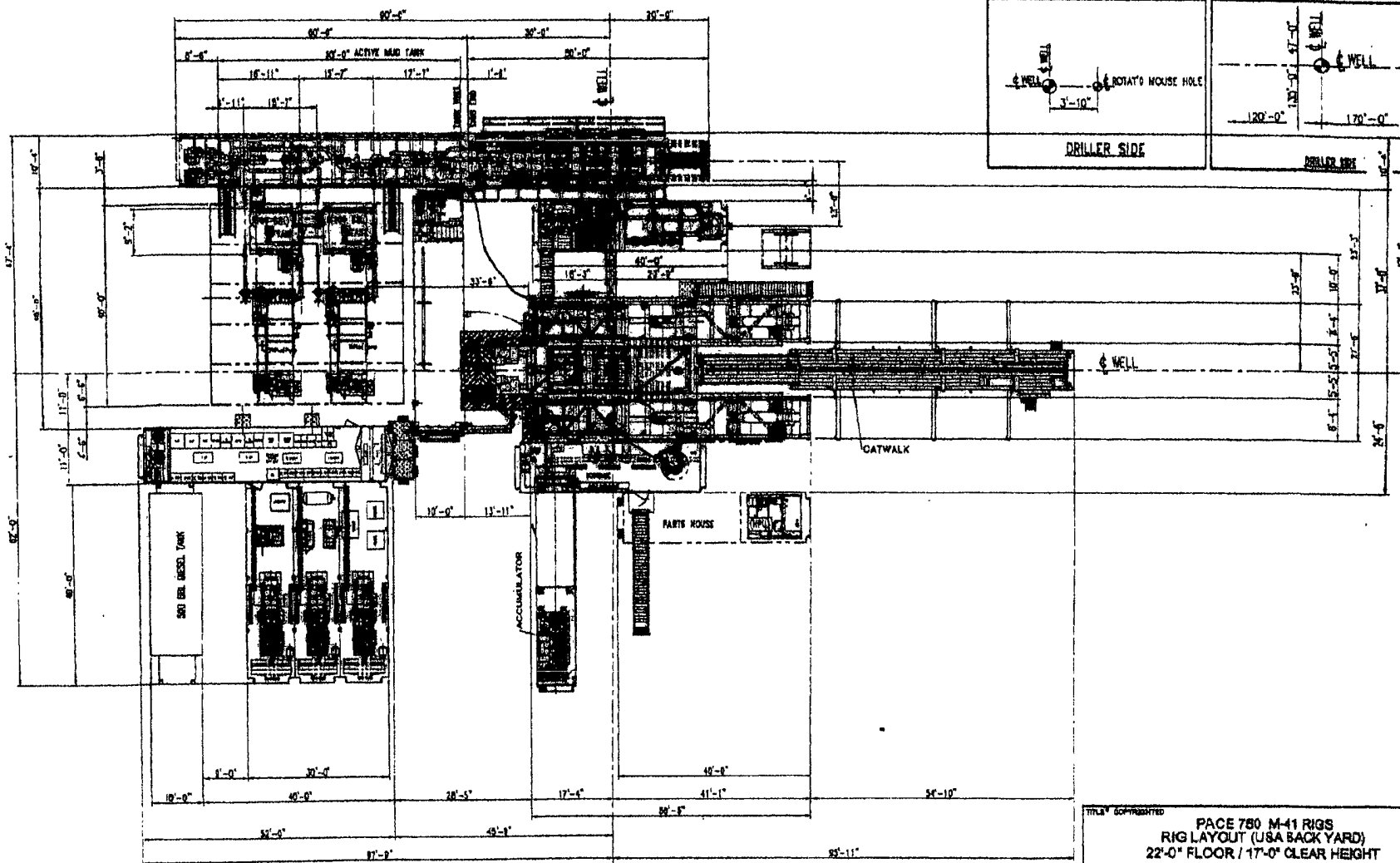
SCOMI OILTOOLS DE-1000

SCOMI OILTOOLS DE-1000

CRI ROLLOFF BOX

NO. 12 100-400

1 ALL STRUCTURAL MATERIAL SHALL ME ASTM - A36 2 ALL PVP SOL. 40 MATERIAL SA 106 Gr B 3 ALL FLANGES SHALL BE 205F, 150F & MATERIAL SA 105 4 ALL FITTINGS SOL. 40 MATERIAL SHALL BE SA 754 Gr WPS 5 TANK FABRICATION SHALL BE IN ACCORDANCE WITH API-650										TRC / CLOSED LOOP SYSTEM BASIC LAYOUT AND TIE IN OXY - H&P - FLEX RIG / PG 1 OF 2										Scomi 4811 N. Main Street, P.O. Box 200, Houston, Texas 77069 PHONE: (281) 299-1111 FAX: (281) 299-8699									
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TITLE: COPYRIGHTED
 PACE 780 M-41 RIGS
 RIG LAYOUT (USA BACK YARD)
 22'-0" FLOOR / 17'-0" CLEAR HEIGHT

THIS DRAWING IS SHOWN TRUE SCALE ONLY WHEN PRINTED ON THIS SIZE PAPER

REV.	DESCRIPTION	DATE	BY	APP.
0000				

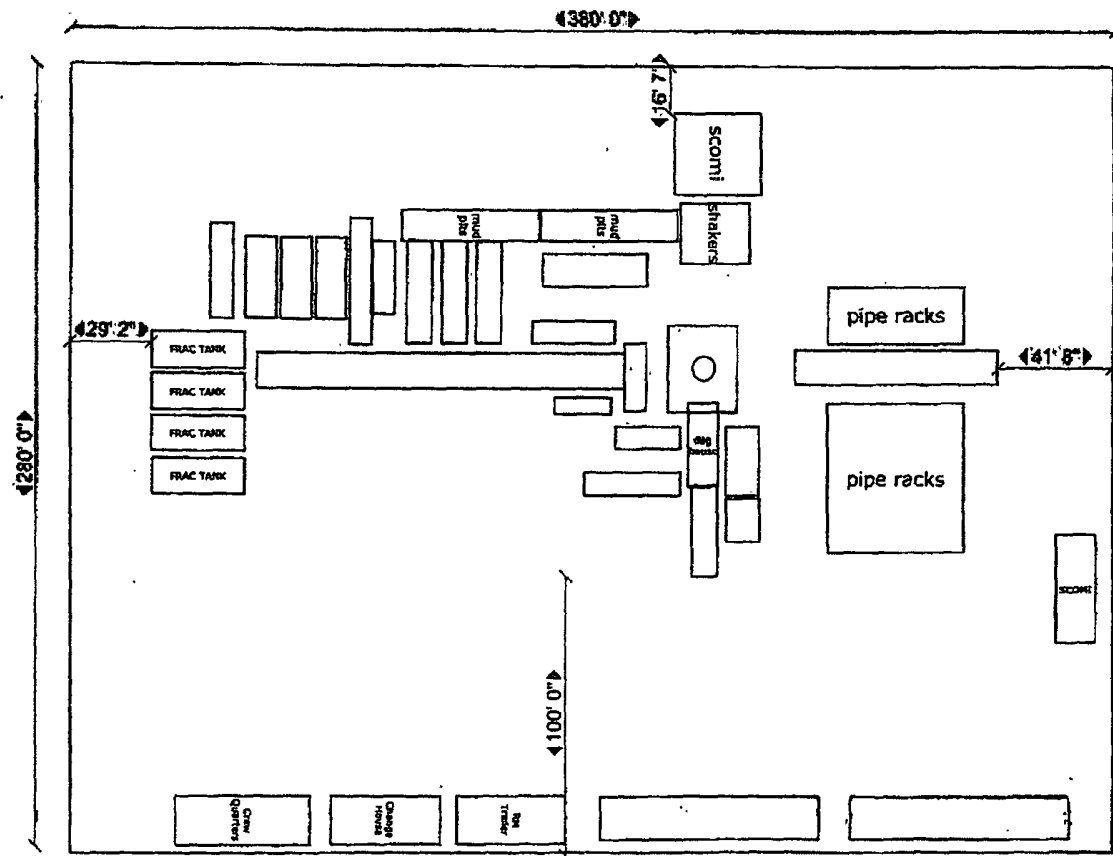


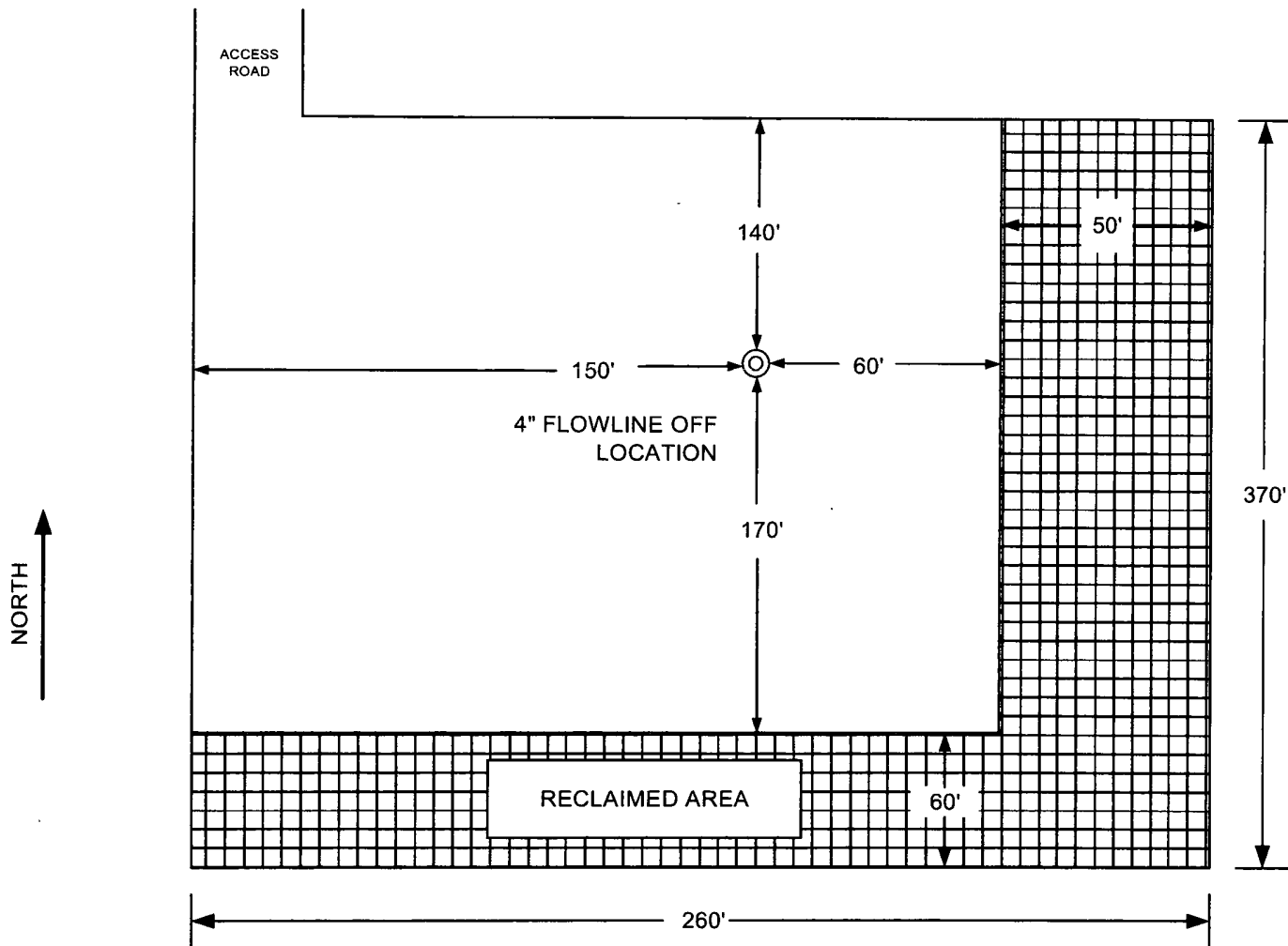
REV.	DATE	BY	APP.	DATE	BY	APP.
0001	02/15/2007					

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DATE: 02/15/2007
 BY: [Signature]
 APP: [Signature]

14-101





REVISION BLOCK						ENGINEERING RECORD	
NO.	DATE	DESCRIPTION	BY	CHK	APP	BY	DATE
1	7/26/12	Facility Layout for Permitting				DRN: MEE	7/26/12
						DES:	
						CHK:	
						APP:	
						AFE:	

FACILITY LAYOUT
Osage 18 Fee A Com #1H

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Oxy USA Inc
LEASE NO.:	NM99017
WELL NAME & NO.:	1H Osage 18 Fee A Com
SURFACE HOLE FOOTAGE:	330' FSL & 1800' FEL
BOTTOM HOLE FOOTAGE:	330' FNL & 1700 FEL
LOCATION:	Section 18, T.20 S., R.25 E., NMPM
COUNTY:	Eddy County, New Mexico

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Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
 - Tank battery**
 - Cave/Karst
 - Communitization Agreement
- ☐ **Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
 - Waste Material and Fluids
 - Logging Requirements
 - High Cave/Karst
- ☐ **Production (Post Drilling)**
 - Well Structures & Facilities
 - Pipelines
 - Electric Lines
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**