OCD Hobbs

ATS-15-1038

Form 3160-3
(June 2015)

HOBBS OCD
JAN 25 2016
RECEIVED

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. NMNM 0 001244A
NMLC 0 070544A & 0 070544B
6. If Indian, Allotee or Tribe Name NM 0 000587

1a. Type of work: ☑ DRILL ☐ REENTER
1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other
1c. Type of Completion: ☐ Hydraulic Fracturing ☑ Single Zone ☐ Multiple Zone

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

8. Lease Name and Well No.
North Bell Lake Unit 6 2BSS 1H (315948)

2. Name of Operator
Kaiser-Francis Oil Company (12361)

9. API Well No.
30-025-43033

3a. Address
6733 South Yale Ave Tulsa Oklahoma 74136

3b. Phone No. *(include area code)*
918-494-0000

10. Field and Pool, or Exploratory
North Bell Lake; BONE SPRING (5150)

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface 2057' FSL & 800' FEL Section 6-23S-34E (I)
At proposed prod. zone 330' FNL & 800' FEL Section 31-22S-34E (A)

11. Sec., T. R. M. or Blk. and Survey or Area
Section 6-23S-34E

14. Distance in miles and direction from nearest town or post office*
Approximately 21 miles southwest of Eunice, 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) 300'	16. No of acres in lease 1898.22	17. Spacing Unit dedicated to this well 160 acres
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1350'	19. Proposed Depth MD: 18,230.77	20. BLM/BIA Bond No. in file WYB000055
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3456' GL	22. Approximate date work will start* ASAP	23. Estimated duration 25 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

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 requested by the BLM.

25. Signature	Name *(Printed/Typed)*	Date
Steven A. Dowdy	Steven A. Dowdy	11/9/2015

Title
Consulting Engineer for Kaiser-Francis Oil Company

Approved by *(Signature)* Steve Caffey	Name *(Printed/Typed)*	Date JAN 19 2016
Title Consulting Engineer for Kaiser-Francis Oil Company	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.

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.

RECEIVED
2015 NOV 13 PM 2:24
BUREAU OF LAND MGMT
CARLSBAD FIELD OFFICE

KZ
01/26/16

(Continued on page 2)

*(Instructions on page 2)

JAN 27 2016

KAISER-FRANCIS OIL COMPANY
P. O. BOX 21468 TULSA, OKLAHOMA 74121-1468
6733 South Yale Avenue, 74136
(918) 494-0000

October 26, 2014

Carlsbad Field Office
Bureau of Land Management
620 E. Greene Street
Carlsbad, NM 88220

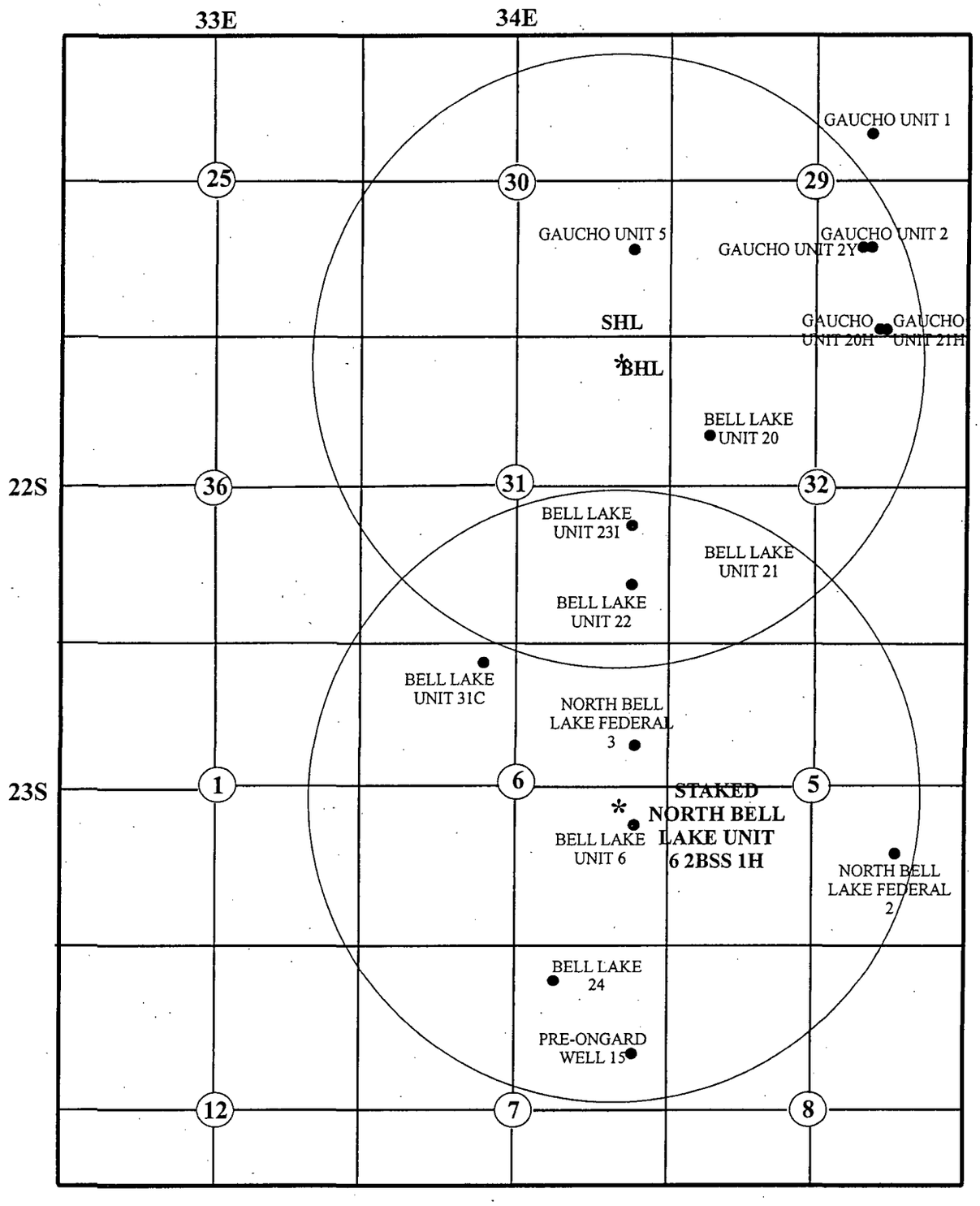
Re: Letter of Authorization

Dear Sir,

Please consider this letter as notice of authorization for Steven A, Dowdy with Triman, Inc., to act on behalf of Kaiser-Francis Oil Company. Please allow him to represent and secure Federal permits to drill and subsequent filings, amendments, onsite inspections, and notices.

Thank you,

Michael D. Maxey
Landman



1 MILE RADIUS OFF SET WELLS

NORTH BELL LAKE UNIT 6 2BSS 1H
SHL: 2057'FSL;800'FEL
Section 6-23S-34E
Lea County, New Mexico

N

PREPARED BY:
TRIMAN, INC.
OKLAHOMA CITY, OKLAHOMA
DRAWING NOT TO SCALE

11/5/2015

CONFIDENTIAL-TIGHT HOLE

DRILLING PROGRAM

North Bell Lake Unit 6 2BSS #1H

SHL: 2057' FSL, 800' FEL, SEC. 6 T23S-R34E
BHL: 330' FNL, 800' FEL, SEC. 31 T22S-R34E

LEA COUNTY, NEW MEXICO

Submitted by:
Kaiser Francis Oil Company
6733 S Yale Avenue
Tulsa, OK 74136

Copies Sent To:
1 Bureau of Land Management

ONSHORE OIL & GAS ORDER NO.1

1. ESTIMATED TOPS OF ALL GEOLOGIC GROUPS, FORMATIONS, MEMBERS, OR ZONES

Elevation above sea level: 3456'
Geologic Name of Surface Formation: Quaternary Aeolian Deposits

Estimated tops of important geologic markers are as follows:

Formation	Depth TVD	Interval Thickness	Depth Subsea	Mineral Zone
Surface	350			Water
Rustler Anhydrite	1130			Barren
Salado	1500			Barren
Bell Canyon	5050			Oil / Water
Cherry Canyon	5890			Oil / Water
Brushy Canyon	7250			Oil / Water
Leonard Shale	8257			Oil / Water
Upper Bone Spring Lime	8490			Oil / Water
Avalon	8553			Oil / Water
1st Bone Spring Lime	8858			Oil / Water
1st Bone Spring	9493			Oil / Water
2nd Bone Spring Lime	9961			Oil / Water
2nd Bone Spring	10026			Oil / Water

2. ESTIMATED DEPTH AND THICKNESS OF OIL, GAS, WATER & OTHER MINERAL ZONES

a. The estimated depths at which water, oil, gas or other mineral bearing formations are expected to be encountered are as follows:

Substance	Formation(Primary Target Zone)	Depth (MD)	Thickness
Oil	2nd Bone Spring	10,627	460'

All shows of fresh water and minerals will be reported and protected.

See COA

3. SPECIFICATIONS FOR BLOWOUT PREVENTION EQUIPMENT AND DIVERTER SYSTEMS

Kaiser Francis Oil Company minimum specifications for pressure control equipment are as follows:

Ram Type: 5000 psi working pressure

Ram type preventers and associated equipment shall be tested to working pressure if isolated by test plug or to 70 percent of internal yield pressure of casing. Pressure shall be maintained for at least 10 minutes or until requirements of test are met, whichever is longer. If a test plug is utilized, no bleed-off pressure is acceptable. For a test not utilizing a test plug, if a decline in pressure of more than 10 percent in 30 minutes occurs the test shall be considered to have failed. Valve on casing head below test plug shall be open during test of BOP stack.

Annular type preventers shall be tested to 50 percent of rated working pressure. Pressure shall be maintained at least 10 minutes or until provisions of test are met, whichever is longer.

As a minimum, the above test shall be performed:

a. when initially installed
b. whenever any seal subject to test pressure is broken
c. following related repair
d. 30-day intervals

Valves shall be tested from working pressure side during BOPE tests with all downstream valves open.

When testing the kill line valve(s) the check valve shall be held open or the ball removed.

The kill lines should be separate from the fill line. Kill lines should be installed a safe distance (usually not less than 75 feet) from the BOP assembly in a conspicuous place and not in areas of suspected H2S concentration. Slow pump speeds for kill purposes must be posted.

Annular preventers shall be functionally operated at least weekly.

Pipe and blind rams shall be activated each trip; however, this function need not be performed more than once a day.

A BOPE pit level drill shall be conducted weekly for each drilling crew.

Pressure tests shall apply to all related well control equipment.

All of the above described tests and/or drills shall be recorded in the drilling log.

The choke manifold, BOP extension rods and hand wheels will be located outside the substructure. The BOP remote control unit will be located on the rig floor. The casing head and BOP will be flanged 13 5/8" 5000 psi w.p. Kill line will be 2" i.d. with burst pressure rating of at least 10,000 psi. These items will be pressure tested concurrently with BOP's. The BOP will be tested when the stack is first installed on the well. It will also be tested at each casing shoe and at least every 30 days. BOP and choke manifold sizes will be in accordance with API-RP-53 as per the attached. See attached schematic of choke manifold.

a. The size and rating of the BOP stack is shown on the attached diagram.
b. A choke line and a kill line are to be properly installed. The kill line is not to be used as a fill-up line. There will be no remote kill line used.
c. The accumulator system shall have a pressure capacity to provide for repeated operation of hydraulic preventers.
d. The accumulator will be certified, and date of certification will be logged within 6 months of spud of subject well.
e. Drill string safety valve(s), to fit all tools in the drill string, are to be maintained on the rig floor while drilling operations are in progress.

f. A Manufacturers' certification that BOPE and other equipment with potential to be exposed to H2S, is suitable for H2S service will be available at the rig.

See COA

g. There will be a 50' Flex Hose used from the BOP to the choke manifold. The Flex Hose will not be straight and will conform to Onshore Order No 2. III.A.2.a

a. The flex hose will have an ID of 3.0" minimum with a min. bend radius of 5' or 60".
b. Rated pressure rating of 5000 psi with a test pressure of 10,000 psi.
c. Has a minimum temperature rating of -22 to 200 deg. F but can withstand a min. of 5 min. at 700 deg C at maximum working pressure.
d. Manufacture in accordance to specification for H2S Service and NACE treated compliance.

4. PROPOSED DIRECTIONAL PLAN

The well will be drilled vertically until approximately 600' TVD above target zone. The well will then be kicked off as per attached directional program.

5. PROPOSED CASING PROGRAM See COA

a) The proposed casing and cementing program shall be conducted as approved to protect and/or isolate all usable water zones, potentially productive zones, lost circulation zones, abnormally pressured zones, and any prospectively valuable deposits of minerals. Any isolating medium other than cement shall receive approval prior to use. The casing setting depth shall be calculated to position the casing seat opposite a competent formation which will contain the maximum pressure to which it will be exposed during normal drilling operations. Determination of casing setting depth shall be based on all relevant factors, including: presence/absence of Hydrocarbons, formation pressures; lost circulation zones, other minerals or other unusual characteristics. All indications of usable water shall be reported.

See COA

b) All waiting on cement times shall be adequate to achieve a minimum of 500 psi compressive strength at the casing shoe prior to drilling out.

c) All casing except the conductor casing, shall be new or reconditioned and tested used casing that meets or exceeds API standards for new casing.

See COA *

d) The surface casing shall be cemented back to surface with a minimum of one centralizer per three joints, and a maximum one centralizer per joint. .3. Per Onshore Order

e) Surface Casing-Three centralizers will be run on the bottom two joints of surface casing with a minimum of one centralizer per joint starting with the shoe joint.

f) All casing strings below the conductor shall be pressure tested to 1500 psi.

g) KFOC default design for the production casing is to use a conventional cemented casing back to surface, and perform a plug and perforation completion. Depending on well conditions at the end of drilling, we may employ sliding sleeves with swell packers on the casing run. Neither case would require a frac string.

h) The proposed casing program will be as follows:

NOTE: DEPTHS FROM DIRECTIONAL PLAN

Purpose	Depth	Hole Size	O.D.	Weight	Grade	Type	New/Used
Surface	1400′	17 ½″	13 3/8″	54.50#	J-55	ST&C	New
Intermediate	6700′	12 ¼ ″	9 5/8″	40#	P-110	LT&C	New
Production Liner	0 ′ to TD′	8 ½ ″	5 1/2″	20#	P-110	BT&C	New

Interval-Surface 0-1400′

13-3/8″ 54.50# J-55 STC	Collapse	Burst	Tension (connection)	Tension (body of pipe)
Design	1130 psi	2730 psi	514K	853K
Actual	655 psi	1500 psi	81.7K	81.7K
Safety Factor	1.7	1.82	6.2	10.4

Interval- Intermediate 0-6700′

9 5/8″ 40# P110 HCP LTC	Collapse	Burst	Tension (connection)	Tension (body of pipe)
Design	4230 psi	7900 psi	737K	1260K
Actual	3484 psi	2500psi	268K	268K
Safety Factor	1.2	3.1	2.7	4.7

Interval-Production Liner KOP'-TD'

5.5" 20# P-110 BTC	Collapse	Burst	Tension (connection)	Tension (body of pipe)
Design	11,100 psi	12,640 psi	548K	641K
Actual	10,500 psi	9,000 psi	206K	206K
Safety Factor	1+	1.4	2.6	3.1

i) **Casing design subject to revision based on geologic conditions encountered.**

See COA

6. **PROPOSED CEMENTING PROGRAM**

a. The cement program will be as follows:

Interval	Type and Amount
SURFACE 13 3/8"	
TOC @ Surface	Lead: ECONOCEM (TM) CEMENT w/ 0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive) Fluid Weight 12.7 lbm/gal Slurry Yield: 1.939 ft3/sk Total Mixing Fluid: 10.51 Gal/sk Proposed Sacks: 780 sks Tail: HALCEM (TM) CEMENT w/ 0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive) Fluid Weight 14.8 lbm/gal Slurry Yield: 1.326 ft3/sk Total Mixing Fluid: 6.34 Gal/sk Proposed Sacks: 345 sks
INTERMEDIATE 9 5/8"	
TOC @ Surface	Lead: ECONOCEM (TM) SYSTEM with 5% Salt, 0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive) Fluid Weight 12.5 lbm/gal Slurry Yield: 2.039 ft3/sk Total Mixing Fluid: 11.25 Gal/sk

	Proposed Sacks: 1733 sks Tail: HALCEM (TM) SYSTEM with 0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive), 0.3 % HR-5 (Retarder), 35 % SSA-1 (Heavy Weight Additive), & 0.07 % Ez-Flo LI (Dispersant) Fluid Weight 14.8 lbm/gal Slurry Yield: 1.326 ft3/sk Total Mixing Fluid: 6.34 Gal/sk Proposed Sacks: 249 sks
Production 200	
TOC to ~~100'~~ into 9 5/8" casing if cemented option used.	If cemented option used: **Lead cement:** VERSACEM (TM) SYSTEM with 10% Bentonite, 0.125 lbs/bbl PolyE-Flake, 0.10 % HR-601 (Retarder) & 0.5 % D-AIR 5000 (defoamer) Fluid Weight 11.9 lbm/gal Slurry Yield: 2.243 ft3/sk Total Mixing Fluid: 12.8 Gal/sk Proposed Sacks: 795 sks Tail cement: SOLUCEM ™ CEMENT 0.25 lb/bbl D-AIR 5000, and 0.60% HR-601 Fluid Weight 15.0 lbm/gal Slurry Yield: 2.622 ft3/sk Total Mixing Fluid: 11.38 Gal/sk Proposed Sacks: 1045 sks

See COA

b. After cementing but before commencing any test, the casing string shall stand cemented until the cement has reached a compressive strength of at least 500 psi at the shoe.

c. The following reports shall be filed with the District Manager within 30 days after the work is completed.

1) Progress reports, Form 3160-5 (formerly 9-331) "Sundry Notices and Reports on Wells", must include complete information concerning:

a) Setting of each string of casing, showing the size, grade, weight of casing set, hole size; setting depth, amounts and type of cement used, whether cement circulated or the top of the cement behind the casing, depth of cementing tools used, casing test method and results, and the date work was done. Show the spud date on the first reports submitted.

b) Temperature or bond logs must be submitted for each well where the casing cement was not circulated to the surface.

d. Auxiliary equipment to be used is as follows:

1. Upper and lower kelly cock valves with handles will be used if kelly utilized.
2. If top drive system utilized then a full opening safety valve or an IBOP (internal blow out preventer) will be installed.

7. PROPOSED CIRCULATING MEDIUM OR MEDIUMS

a. The proposed circulating mediums to be employed in drilling are as follows: Note- Depths are taken from the Directional Plan.
~ Drill fluids will be self-contained and recycled via closed loop system. Cuttings will be hauled off-site to **R360 disposal site.**

Interval	Mud Type	Mud Weight.	Viscocity	Fluid Loss	pH
Surface (80'-1400')	**FW**	**8.8-9.0**	**28-30**	**NC**	**7.5**
Intermediate Vertical Surface to 9 5/8 casing point (1400'-6700')	**BRINE**	**9.4-10**	**30-40**	**4-8 ML 30 min**	**9.0**

Lower Vertical and Curve Drillout to Landing Point (6700'-10500')	**Cut Brine and lite mud up**	**9.1-9.5**	**30-40**	**4-6 ML 30 min**	**9.0**
Lateral **Landing Point to TD** **(10500-18000')**	**Cut Brine and lite mud up**	**9.1-9.5**	**29/40**	**4-6 ML 30 min**	**9.0**

A mud test shall be performed every 24 hours after mudding-up to determine, as applicable, density, viscosity, gel strength, filtration, and pH.

b. Mud monitoring equipment to be used is as follows:

1) Periodic checks will be made each tour of the mud system. The mud level will be checked visually.
2) The minimum quantity of mud material to be kept on location, in case of an emergency, is 700 Bbls.

See COA

8. PROPOSED TESTING, LOGGING, AND CORING

The anticipated type and amount of testing, logging and coring are as follows:

a. The logging program will consist of: a SLB Quad-Combo logging suite to be run at kick off point, consisting of gamma ray, resistivity, neutron density, and sonic logs.
b. No cores are anticipated.
c. The anticipated completion program is as follows: After drilling the Bone Spring lateral, a 5-1/2" production casing with cemented liner for isolation will be run from Surface to the lateral TD.

9. EXPECTED BOTTOM HOLE PRESSURE

See COA

a. The maximum bottom hole pressure 5350 psi. The maximum bottom hole temperature is 195 degrees Fahrenheit.
b. **H2S is not anticipated. However, an H2S Plan has been prepared by Kaiser Francis and is attached to this APD package.**

10. OTHER INFORMATION & NOTIFICATION REQUIREMENTS

a. Kaiser Francis Oil Company agrees to be responsible under the terms and conditions of the lease for the operations on the lease.

b. Drilling is planned to commence on approximately **February 1, 2016,** using **Cactus Rig #170.** It is anticipated that completion operations will begin within 40 days after the well has been drilled.

c. The approved New Mexico OCD permit will be submitted upon its receipt.

d. It is anticipated that the drilling of this well will take approximately 35 days.

e. The following shall be entered on the well site supervisor's log:
   1) Blowout preventer pressure tests, including test pressures and results;
   2) Blowout preventer tests for proper functioning;
   3) Blowout prevention drills conducted;
   4) Casing run, including size, grade, weight, and depth set;
   5) How the pipe was cemented, including amount of cement, type, whether cement circulated, location of the cementing tools, etc.
   6) Waiting on cement (WOC) time for each casing string;
   7) Casing pressure tests after cementing, including test pressures and results.

f. Section 102 (b) (3) of the Federal Oil and Gas Royalty Management Act of 1982, as implemented by the applicable provision of the operating regulations at Title 43 CFR 3162.4-1, requires that "not later than the 5th business day after any well begins production on which royalty is due anywhere on the lease site or allocated to a lease site, or resumes production in the case of a well which has been off production for more than 90 days, the operator shall notify the authorized officer by letter or sundry notice, Form 3160-5 or orally to be followed by a letter or sundry notice of the date on which such production has begun or resumed." The date on which production is commenced or resumed will be construed for oil wells as the date on which liquid hydrocarbons are first sold or shipped from a temporary storage facility, such as a test tank, and for which a run ticket is required to be generated or, the date on which liquid hydrocarbons are first produced into a permanent storage facility, whichever first occurs; and, for gas sales as the date on which associated liquid hydrocarbons are first sold or shipped from a temporary storage facility, such as a test tank, and for which a run ticket is required to be generated or, the

date on which gas is first measured through permanent metering facilities, whichever first occurs. If the operator fails to comply with these requirements in the manner and time allowed, the operator shall be liable for a civil penalty of up to $10,000 per violation for each day such violation continues, not to exceed a maximum of 20 days. See Section 109 (3) of the Federal Oil and Gas Royalty Management Act of 1982 and the implementing regulations at Title 43 CFR 3163.4.

* g. Notification Requirements:

See COA

1. The BLM in Carlsbad will be notified verbally not more than 48 hours after the well is spudded, or on the next regular work day.
2. The BLM will be notified verbally at least 48 hours prior to running/cementing surface casing.
3. For verbal plugging orders on drilling locations, the BLM will be notified 24 hours prior to plugging.

The following standards apply to the abandonment of newly drilled dry or nonproductive wells in accordance with 43 CFR 3162.3-4. Approval shall be obtained prior to the commencement of abandonment. All formations being useable quality water, oil, gas, or geothermal resources, and/or a prospectively valuable deposit of minerals shall be protected. Approval may be given orally by the authorized officer before abandonment operations are initiated. This oral request and approval shall be followed by a written notice of intent to abandon filed not later than the fifth business day following oral approval. Failure to obtain approval prior to commencement of abandonment operations shall result in immediate assessment under 43 CFR 3163.1 (b) (3). The hole shall be in static condition at the time any plugs are placed (this does not pertain to plugging lost circulation zones). Within 30 days of completion of abandonment, a subsequent report of abandonment shall be filed.

4. BLM Representatives- Office Telephone No. XXXXXXXXXXXX.

Position	*Name*	*Telephone*
Petroleum Engineer	**Ed Fernandez**	**575-234-2220**

CASING TABLES

Dimensional & Grade Designators								Collapse Resistance
OD Size	Weight		NOM Wall	NOM ID	API Drift	Alternate Drift	Product	
	T&C	PE						
in.	lb/ft	lb/ft	in.	in.	in.	in.	Grade	psi
9 5/8	36.00	34.89	0.352	8.921	8.765	--	USS C110	2,480
9 5/8	36.00	34.89	0.352	8.921	8.765	--	USS RYH110	2,480
9 5/8	36.00	34.89	0.352	8.921	8.765	--	USS RYS110	2,480
9 5/8	36.00	34.89	0.352	8.921	8.765	--	P110 SR16	2,480
9 5/8	36.00	34.89	0.352	8.921	8.765	--	P110	2,480
9 5/8	36.00	34.89	0.352	8.921	8.765	--	P110 HC	3,090
9 5/8	36.00	34.89	0.352	8.921	8.765	--	P110 HP	3,360
9 5/8	36.00	34.89	0.352	8.921	8.765	--	Q125	2,480
9 5/8	36.00	34.89	0.352	8.921	8.765	--	Q125 HC	3,120
9 5/8	36.00	34.89	0.352	8.921	8.765	--	Q125 HP	3,390
9 5/8	36.00	34.89	0.352	8.921	8.765	--	USS 140	2,480
9 5/8	36.00	34.89	0.352	8.921	8.765	--	USS V150	2,480
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	J55	2,570
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	K55	2,570
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	USS HCK55	3,810
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	USS GT80S	3,090
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	L80	3,090
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	L80 HC	3,870
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	L80 HP	4,230
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	N80	3,090
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	N80 HC	3,940
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	N80 HP	4,290
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	C90	3,250
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	USS C90	3,250
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	R95	3,320
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	T95	3,320
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	USS C95	3,320
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	USS C100	3,380
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	USS RYS100	3,380
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	C110	3,470
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	USS C110	3,470
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	USS RYH110	3,470
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	USS RYS110	3,470
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	P110 SR16	3,470
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	P110	3,470
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	P110 HC	4,230
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	P110 HP	4,590
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	Q125	3,530
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	Q125 HC	4,300
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	Q125 HP	4,660
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	USS 140	3,530
9 5/8	40.00	38.97	0.395	8.835	8.679	8.750	USS V150	3,530
9 5/8	43.50	42.73	0.435	8.755	8.599	--	J55	3,250
9 5/8	43.50	42.73	0.435	8.755	8.599	--	K55	3,250
9 5/8	43.50	42.73	0.435	8.755	8.599	--	USS GT80S	3,810

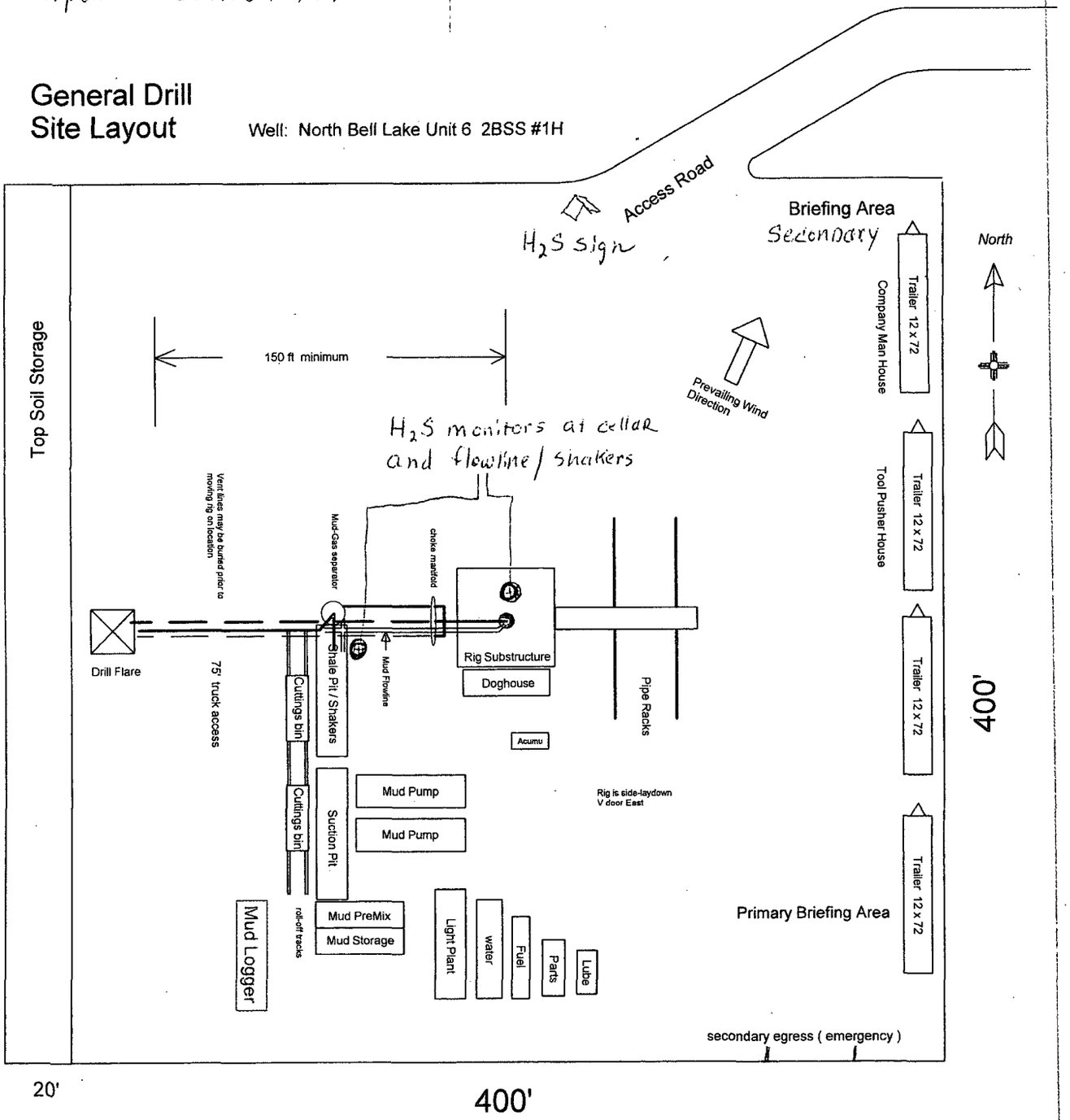
TENSION				Internal Yield						Ductile Rupture Capped End	Outside Diameter	
				API Historical				Lame' - Von Mises				
Joint Strength, 1,000 lbs				Pipe Body	Threaded & Coupled			Open End	Capped End		Regular Coupling	Special Clr Coupling
Yield	Threaded and Coupled				STC	LTC	BTC					
Pipe Body	STC	LTC	BTC	psi	psi	psi	psi	psi	psi	psi	in.	in.
1,128	--	--	--	7,040	--	--	--	7,020	7,850	7,660	--	--
1,128	--	--	--	7,040	--	--	--	7,020	7,850	7,660	--	--
1,128	--	--	--	7,040	--	--	--	7,020	7,850	7,660	--	--
1,128	--	--	--	7,040	--	--	--	7,020	7,850	7,230	--	--
1,128	--	--	--	7,040	--	--	--	7,020	7,850	7,980	--	--
1,128	--	--	--	7,040	--	--	--	7,020	7,850	7,980	--	--
1,282	--	--	--	8,000	--	--	--	7,980	8,920	8,360	--	--
1,282	--	--	--	8,000	--	--	--	7,980	8,920	8,680	--	--
1,282	--	--	--	8,000	--	--	--	7,980	8,920	8,680	--	--
1,384	--	--	--	8,640	--	--	--	8,620	9,630	9,050	--	--
1,436	--	--	--	8,960	--	--	--	8,940	9,990	9,720	--	--
1,538	--	--	--	9,600	--	--	--	9,580	10,700	10,420	--	--
630	452	520	714	3,950	3,950	3,950	3,950	3,940	4,390	3,950	10.625	10.125
630	486	561	843	3,950	3,950	3,950	3,950	3,940	4,390	5,000	10.625	10.125
630	486	561	843	3,950	3,950	3,950	3,950	3,940	4,390	5,000	10.625	10.125
916	--	727	947	5,750	--	5,750	5,750	5,730	6,380	6,100	10.625	10.125
916	--	727	947	5,750	--	5,750	5,750	5,730	6,380	6,100	10.625	10.125
916	--	727	947	5,750	--	5,750	5,750	5,730	6,380	6,100	10.625	10.125
974	--	760	968	6,110	--	6,110	6,110	6,090	6,780	6,100	10.625	10.125
916	--	737	979	5,750	--	5,750	5,750	5,730	6,380	6,430	10.625	10.125
916	--	737	979	5,750	--	5,750	5,750	5,730	6,380	6,430	10.625	10.125
1,088	--	847	1,074	6,830	--	6,830	6,830	6,810	7,580	6,800	10.625	10.125
1,031	--	804	1,021	6,470	--	6,470	6,470	6,450	7,180	7,120	10.625	10.125
1,031	--	804	1,021	6,470	--	6,470	6,470	6,450	7,180	7,120	10.625	10.125
1,088	--	847	1,074	6,830	--	6,830	6,830	6,810	7,580	6,800	10.625	10.125
1,088	--	847	1,074	6,830	--	6,830	6,830	6,810	7,580	7,500	10.625	10.125
1,088	--	847	1,074	6,830	--	6,830	6,830	6,810	7,580	7,500	10.625	10.125
1,145	--	870	1,062	7,190	--	7,190	7,190	7,170	7,980	7,160	10.625	10.125
1,145	--	870	1,062	7,190	--	7,190	7,190	7,170	7,980	7,160	10.625	10.125
1,260	--	--	--	7,910	--	--	--	7,880	8,770	8,280	--	--
1,260	--	--	--	7,910	--	--	--	7,880	8,770	8,640	--	--
1,260	--	--	--	7,910	--	--	--	7,880	8,770	8,640	--	--
1,260	--	--	--	7,910	--	--	--	7,880	8,770	8,640	--	--
1,260	--	988	1,266	7,910	--	7,910	7,910	7,880	8,770	8,150	10.625	10.125
1,260	--	988	1,266	7,910	--	7,910	7,910	7,880	8,770	9,000	10.625	10.125
1,260	--	988	1,266	7,910	--	7,910	7,910	7,880	8,770	9,000	10.625	10.125
1,432	--	1,098	1,360	8,990	--	8,990	8,990	8,960	9,970	9,430	10.625	10.125
1,432	--	1,108	1,393	8,990	--	8,990	8,990	8,960	9,970	9,790	10.625	--
1,432	--	1,108	1,393	8,990	--	8,990	8,990	8,960	9,970	9,790	10.625	--
1,546	--	1,185	1,467	9,710	--	9,710	9,710	9,670	10,770	10,200	10.625	--
1,604	--	1,239	1,552	10,070	--	10,070	10,070	10,030	11,170	10,960	10.625	--
1,718	--	1,326	1,658	10,780	--	10,780	10,780	10,750	11,960	11,750	10.625	--
691	--	--	--	4,350	--	--	--	4,340	4,810	4,360	--	--
691	--	--	--	4,350	--	--	--	4,340	4,810	5,520	--	--
1,005	--	813	1,038	6,330	--	6,330	6,330	6,310	7,000	6,740	10.625	10.125

EXTRA COPY

Updated Exhibit A1

General Drill Site Layout

Well: North Bell Lake Unit 6 2BSS #1H



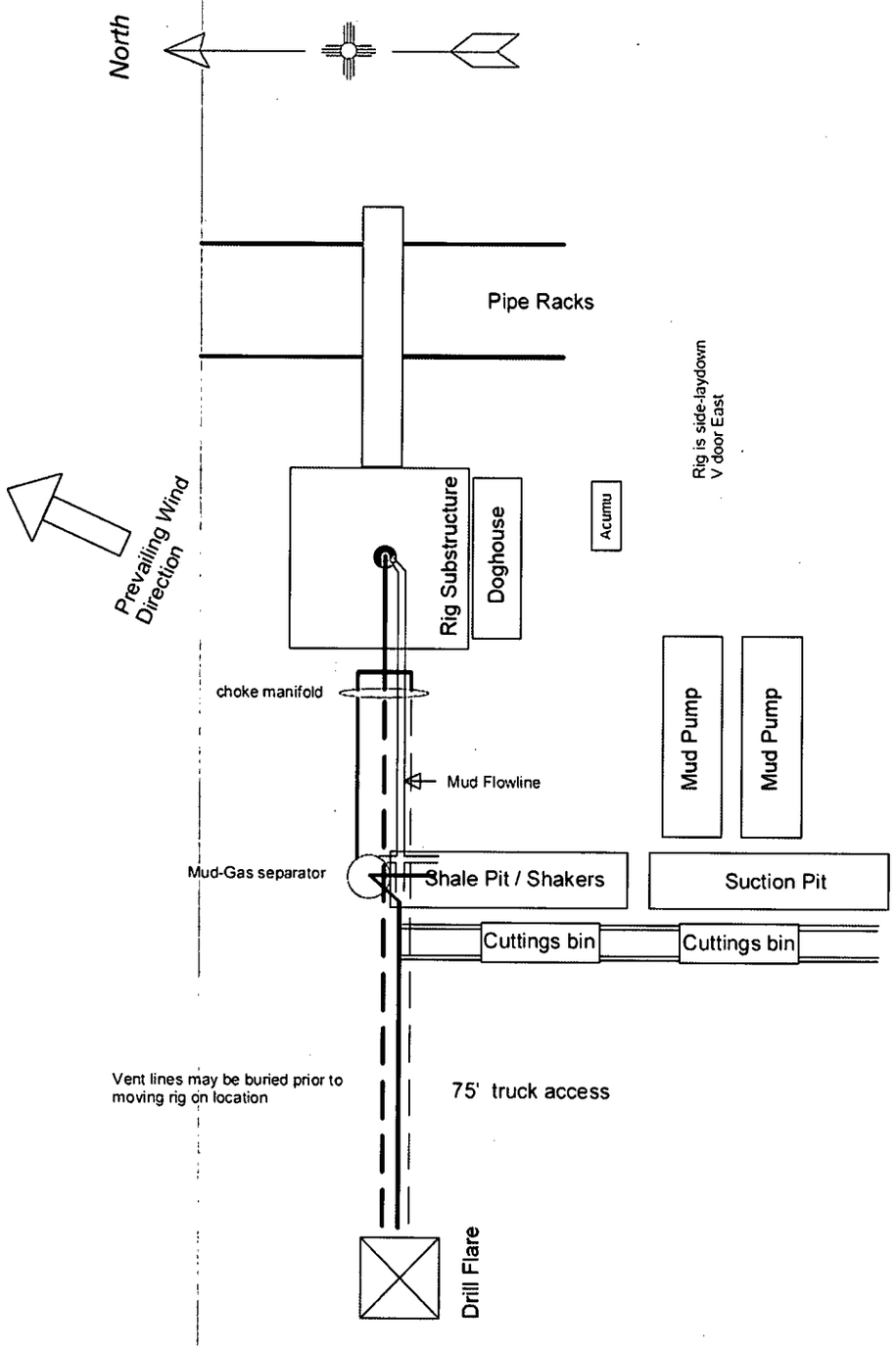


EXHIBIT A2 Expanded view of flowlines to mud-gas separator and blow-down lines to flare

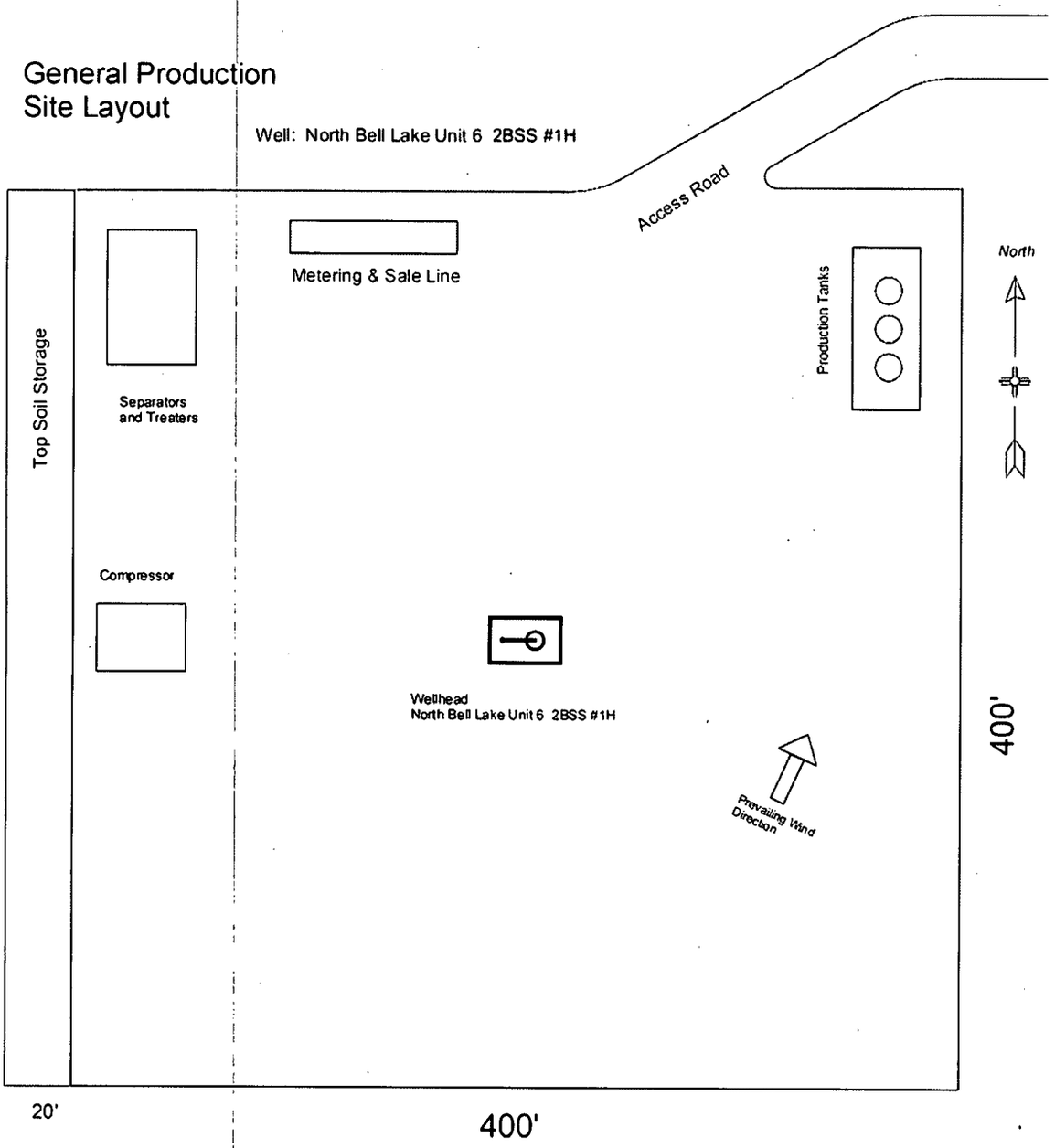


EXHIBIT A3 General production pad layout

EXHIBIT B1 **5000 psi BOP STACK**

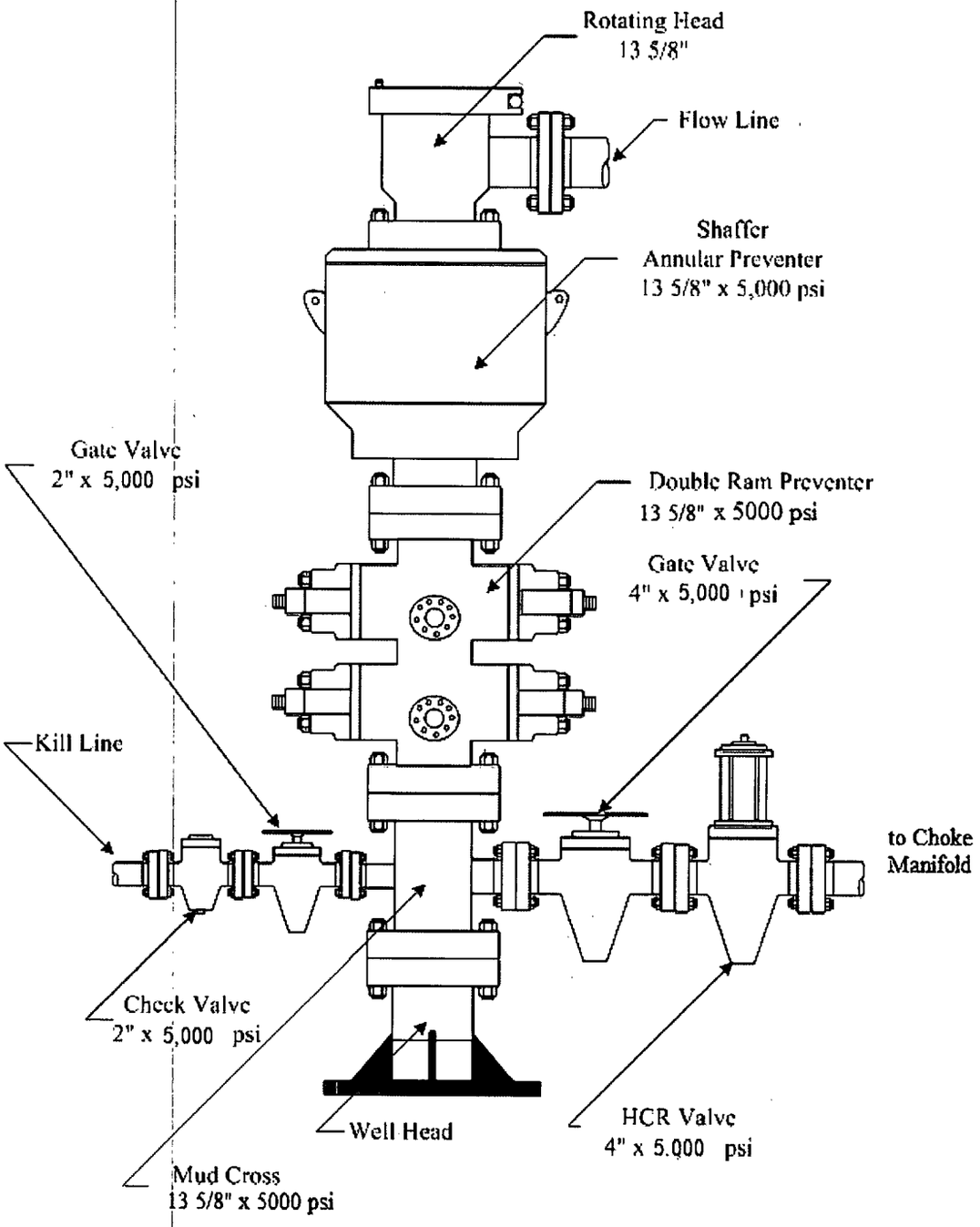
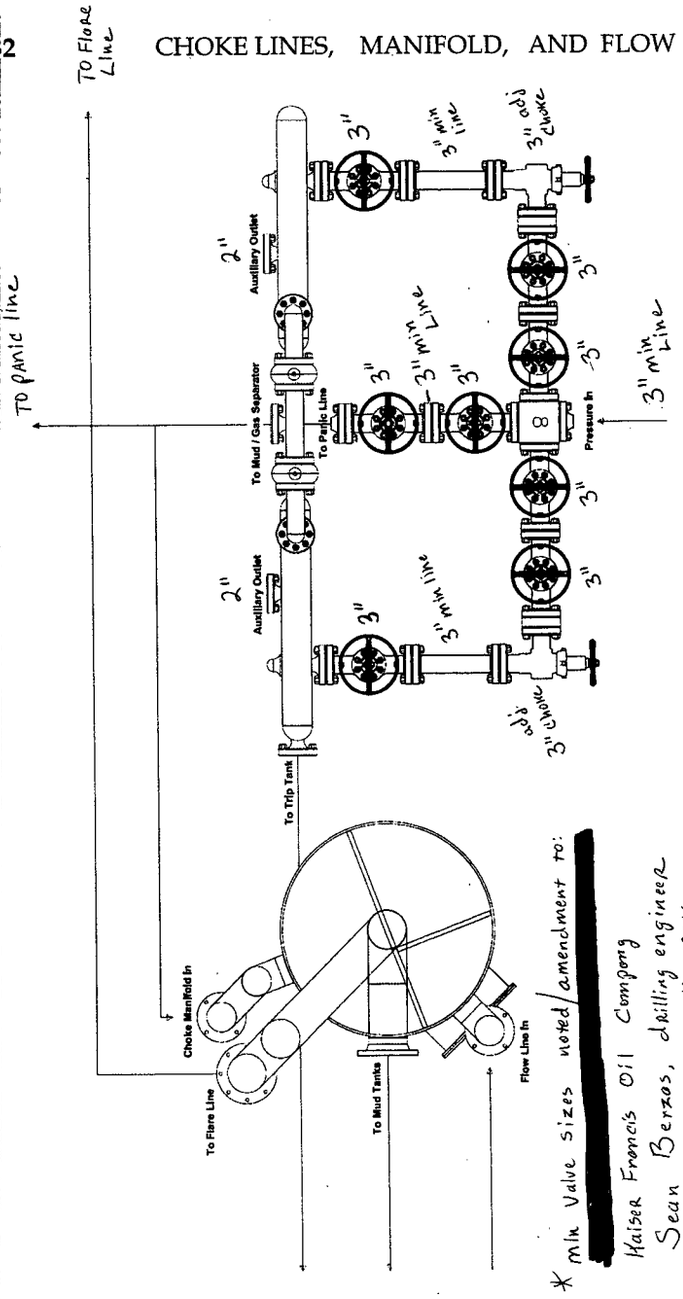


EXHIBIT B2 CHOKE LINES, MANIFOLD, AND FLOW



* min Valve sizes noted / amendment to: [redacted]
Kaiser Francis Oil Company
Sean Berzas, drilling engineer
S- B~ 1-4-2016
Amendment to: North Bell Lake Unit 6 2 BSS-1H