

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Hobbs

FORM APPROVED
OMB NO. 1004-0137
Expires March 31, 2007

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

HOBBS OCD

SUBMIT IN TRIPLICATE - Other instructions on reverse side

OCT 02 2013

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

XTO Energy Inc.

3a. Address

200 N. Loraine, Suite 800, Midland, TX 79701

3b. Phone No. (include area code)

432-620-6714

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

SHL: 350 FSL & 680 FEL; UL A, Sec 31, T23S, R32E
350 FNL & 350 FEL; UL A, Sec 31, T23S, R32E

5. Lease Serial No.

NM 18848

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.

SDE 31 Federal

184

9. API Well No.

30-025-38888 40460

10. Field and Pool, or Exploratory Area

Sand Dunes; Bone Spring S

11. County or Parish, State

Lea

NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

☒ Notice of Intent☐ Subsequent Report☐ Final Abandonment Notice

TYPE OF ACTION

☐ Acidize☐ Alter Casing☐ Casing Repair☒ Change Plans☐ Convert to Injection☐ Deepen☐ Fracture Treat☐ New Construction☐ Plug and Abandon☐ Plug Back☐ Production (Start/Resume)☐ Reclamation☐ Recomplete☐ Temporarily Abandon☐ Water Disposal☐ Water Shut-Off☐ Well Integrity☐ Other

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the final site is ready for final inspection.)

The purpose of this sundry is to amend approved APD to change pools, the csg & cmt program, directional drill survey & geological info. A 1-year extension to the current approved APD is also requested due to change of plans and rig availability. No extension per Stephanie Rabadue 9/24/13

Intermediate Casing 2: 7", 26#, New HCP-110, LT&C csg to be set at 11,100'.

Cement: Lead: 260sx Tamed Light Cement + .5pps CFR-3 + 3pps Kol-Seal + 25pps D-Air 5000 + .2% HR-800 (10.5ppg, .68 ft3/sk, 11.94 gal/sx wtr)

Compr Strength: 12hr - 676psi, 24hr - 1398psi

500 SX tamed light yield 2.68 per Stephanie Rabadue 9/26/13

Tail: 175sx VersaCem-PBSH2 + .5% Halad344 + .4% CFR-3 + 1pps Salt + 2pps Kol-Seal + .125 Poly-E-Flake + .25pps D-Air 5000 (13.20ppg, 1.62 ft3/sk, 8.23 gal/sx wtr)

Compr Strength: 12hr - 1382psi, 24hr - 1690psi

TOC: 3700'

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

No DV Tool to be set

See Attached Drilling Plan & Directional Survey

14. I hereby certify that the foregoing is true and correct
Name (Printed/Typed)

Stephanie Rabadue

Title

Regulatory Analyst

Date

08/27/2013

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title

Office

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Title 18 U.S.C. Section 1001, and Title 43 U.S.C. Section 212, makes 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.

OCT 03 2013

Drilling Plan

(Supplement to BLM 3160-3)

XTO Energy Inc., 200 North Loraine, Suite 800, Midland, TX

SDE 31 Federal 18H

350' FSL & 680' FEL

Unit P, Section 31, T-23-S, R-32-E

Lea County, NM

Sand Dunes; Bone Spring South: Pool Code: 53805

Projected TD: 10,718' TVD/15,068' MD

NMNM-18848

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1. GEOLOGIC NAME OF SURFACE FORMATION: Quaternary

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

Formation	Well Depth (ft)	Water / Oil / Gas
	100-300	Fresh Water
Rustler	900	Water
Top of Salt	1030	
Base of Salt	3110	
Lamar	4652	
Bell Canyon	4707	Water/Oil/Gas
Cherry Canyon	5415	Water/Oil/Gas
Brushy Canyon *	6774	Water/Oil/Gas
Brushy Canyon E3 zone	8280	Water/Oil/Gas
Brushy Canyon E5 zone	8410	Water/Oil/Gas
Bone Spring	8501	Water/Oil/Gas
Bone Spring 2	9955	Water/Oil/Gas

(*) Primary hydrocarbon-bearing strata

3. CASING PROGRAM:

The surface fresh water sands will be protected by setting 13-3/8" casing at $\pm 900'$ and circulating cement back to surface. The hydrocarbon productive zones will be isolated by setting 4-1/2" casing to total depth and cementing above the 9-5/8" intermediate casing.

See COA

Hole Size	Depth	OD Csg.	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
17-1/2"	0' - 900' 1045'	13-3/8"	48	STC	H-40	New	2.24	1.29	4.56
12-1/4"	0' - 4700' 4650'	9-5/8"	40#	LTC	HCL-80	New	1.56	1.48	8.39
8-3/4"	0' - 11,100'	7"	26#	LTC	HCP-110	New	2.58	2.38	4.23
6-1/8"	10,850' - 15,068'	4-1/2"	11.6#	LTC	HCP-110	New	2.49	2.02	2.12

4-1/2" liner will have at least 150' overlap back into the 7" casing.

WELLHEAD:

- A. Starting Head: 13-5/8" 3000 psi top flange x 13-3/8" SOW bottom (to be removed upon setting intermediate casing)
- B. Lower Casing Head: 11" 3000 psi top flange x 9-5/8" SOW bottom
- C. "B" Section: Casing Hanger 11" Bowl x 5-1/2" casing
- D. Tubing Spool: 11" 3000 psi bottom flange x 7-1/16" 5000 psi top flange

4. CEMENT PROGRAM: (Note yields and DV tool depths if multiple stages)

A. Surface Cement: 13-3/8"

Lead Slurry: 500 sacks Class C Cement + 2% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 4% bwoc Bentonite + 81.3% Fresh Water
(13.50 ppg, 1.75 cu ft/sk, 9.20 gal wtr/sk) 12 hr compr strength - 450 psi 24 hr compr strength - 900 psi

Tail Slurry: 200 sacks Class C Cement + 2% bwoc Calcium Chloride + 56.4% Fresh Water
(14.8 ppg, 1.34 cu ft/sk, 6.36 gal wtr/sk) 12 hr compr strength - 750 psi 24 hr compr strength - 1500 psi

100% excess. Cement to surface.

B. Intermediate 1 Cement: 9-5/8"

Lead Slurry: 740 sacks (35:65) Poz (Fly Ash):Class C Cement + 5% bwoc Sodium Chloride + 5 lbs/sack LCM-1 + 6% bwoc Bentonite + 0.2% bwoc Sodium Metasilicate + 0.25 lbs/sack Cello Flake + 103% Fresh Water
(12.5 ppg, 2.05 cu ft/sk, 10.75 gal wtr/sk) 12 hr compr strength - 350 psi; 24 hr compr strength - 1100 psi

Tail Slurry: 340 sacks Class C Cement + 1% bwoc Calcium Chloride + 56.3% Fresh Water
(14.8 ppg, 1.34 cu ft/sk, 6.34 gal wtr/sk) 12 hr compr strength - 625 psi; 24 hr compr strength - 2200 psi

50% excess. Cement to surface.

C. Intermediate 2 Cement: 7"

Lead Slurry: ~~260~~⁵⁰⁰sx Tuned Light Cement + .5pps CFR-3 + 3pps Kol-Seal + .25pps D-Air 5000 + .2% HR-800 (10.5ppg, ~~2.68~~^{2.68} ft³/sk, 11.94 gal/sx wtr) 12 hr compr strength - 676psi; 24hr compr strength-1398psi

Tail Slurry: 175sx VersaCem-PBSH2 + .5% Halad344 + .4% CFR-3 + 1pps Salt + 2pps Kol-Seal + .125pps Poly-E-Flake + .25pps D-Air 5000 (13.20ppg, 1.62 ft³/sk, 8.23 gal/sx wtr) 12hr compr strength - 1382psi; 24hr - 1690psi

per Stephanie Rabadue 9/26/13

TOC - 3700'.

30% excess, all volumes to be adjusted per caliper log.

5. PRESSURE CONTROL EQUIPMENT:

The blow out preventer equipment (BOP) diagram is attached to this Drilling Plan. The blowout preventer stack for the intermediate and production hole will consist of a double ram blowout preventer and annular preventer rated to 5000 psi working pressure. All BOP's and accessory equipment will be tested according to Onshore Order #2 before drilling out. A hydraulic closing unit will be a part of this equipment and will be function tested daily.

See COA

6. PROPOSED MUD CIRCULATION SYSTEM:

INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
0' to 900' <i>1015'</i>	13-3/8"	FW/Native	8.5 – 8.8	35-40	NC
900' to 4400' <i>4650'</i>	12-1/4"	Brine/ Gel Sweeps	9.8 – 10.2	30-32	NC
4400' to 11,100'	8-3/4"	FW/Polymer Sweeps	8.6-8.8	29-32	NC-20
10,850' to 15,068'	6-1/8"	FW/Polymer Sweeps	8.6-8.8	32-35	20

The necessary mud products for weight addition and fluid loss control will be on location at all times.

Spud with fresh water/native mud. Drill out from under 13-3/8" surface casing with brine solution. Use fibrous materials as needed to control seepage and lost circulation. Pump viscous sweeps as needed for hole cleaning. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system.

7. 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 appropriate connections will be on the rig floor at all times.
- C. Hydrogen sulfide detection equipment and breathing equipment will be in operation from drilling out the 9-5/8" casing shoe until the 7" casing is cemented.

8. LOGGING, CORING AND TESTING PROGRAM:

- A. Potential drill stem tests will be based on geological sample shows.
- B. No coring is anticipated.
- C. Mudlogger unit will be on and working from 4400' to TD.
- D. Open hole logging to include Density/Neutron/PE/Dual Laterlog/Spectral Gamma from KOP to intermediate casing, with Neutron/Gamma continuing to surface.

9. ABNORMAL PRESSURES AND TEMPERATURES / POTENTIAL HAZARDS:

No abnormal pressures are anticipated. Max bottom hole pressure should not exceed 4200 psi. BHT of 165-175° F is anticipated. Hydrogen Sulfide Gas (H₂S) should be expected from about 4600' to TD. Monitors will be in place to detect H₂S occurrences (as mentioned above). Lost circulation could occur but is not expected to be a serious problem in this area and hole seepage will be compensated for by additions of small amounts of LCM in the drilling fluid. Should any abnormal or hazardous circumstances be encountered personnel on location will take necessary steps to ensure safety of all personnel and environment.

10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:

Road and location construction will begin after APD has been approved. Anticipated spud date will be as soon as location is complete and rig is available. Move in operations and drilling is expected to take 12 days. If production casing is run then an additional 30 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.

11. SPECIAL INSTRUCTIONS:

- A. Reports will be filled out on the XTO Drilling Report form, and the Casing/Cementing Detail Forms provided.
- B. Deviation:
 - Surface Hole: Maximum of 1° and not more than 1° change per 100'.
 - Production Hole: Maximum of 90° (horizontal drilling) and not more than 10° change per 100'.
 - Note: Maximum distance between surveys is 500'.**
- C. WOC a minimum of 18 hours or before cement gains compressive strength of 500 psi, whichever is greater, before drilling out shoe joint on surface casing string. Use minimal WOB and RPM until drill collars are below the shoe joints.
- D. Check BOP blind rams each trip and pipe rams each day. Strap out of hole for logging and/or casing jobs.
- E. A trash trailer will be provided on each location. Keep trash picked up and the location as clean as possible. All drilling line, oil filters, etc. should be hauled away at the Drilling Contractor's expense. At the conclusion of drilling operations, the contents of the trash trailer will be disposed of into a commercial sanitary landfill.

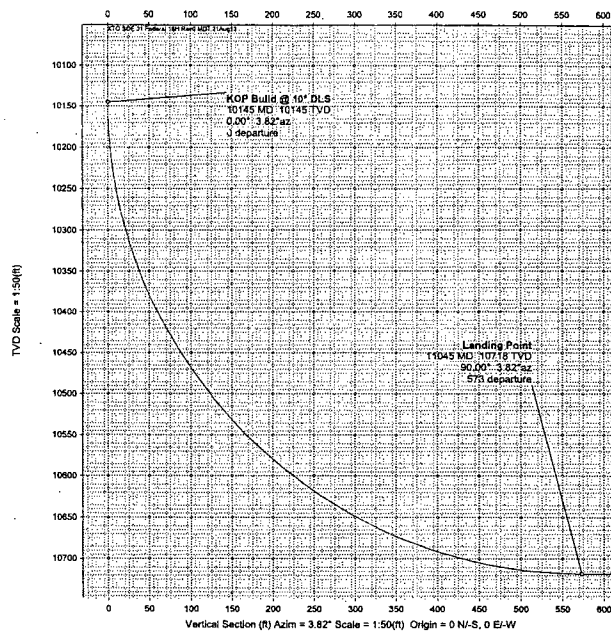


XTO

Rev0

PATHFINDER
A Schlumberger Company

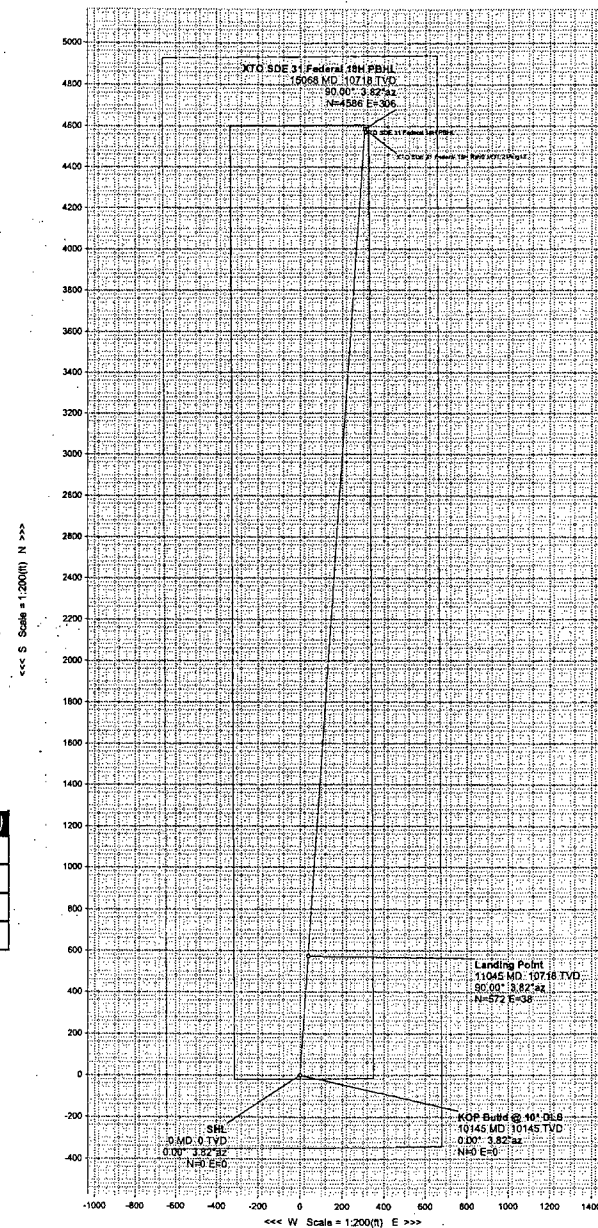
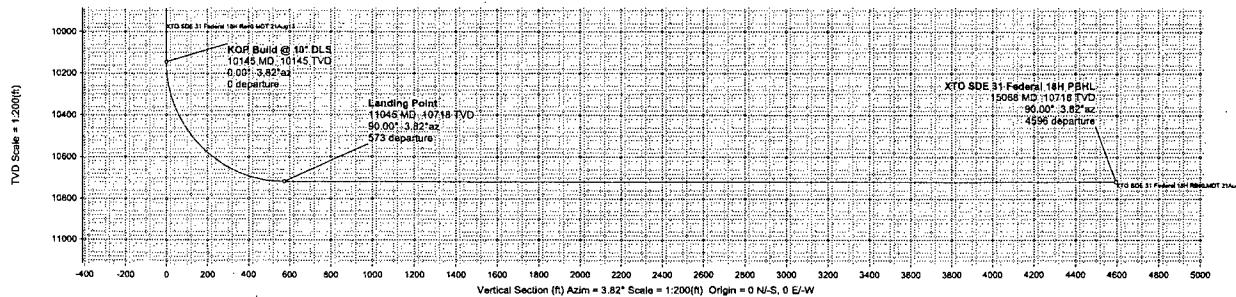
WELL	SDE 31 Federal 18H	FIELD	NM Lea County (NAD 27)	STRUCTURE	Pioneer 33
Magnetic Parameters	Model: BUCKM 2013 Dip: 80.124° Mag Dec: 7.489°	Date: August 21, 2013 FS: 48388 1st T	Surface Location Lat: N 32 15 16.370 Lon: W 103 42 24.940 Northing: 456887.30 DLS Easting: 693645.70 DLS Utlr Conv: 0.334° Scale Fact: 0.99995204	Miscellaneous Sht: Rev0 MDT 21 Aug 13 TVD Ref: RKB/M218 above 1 Srv Date: August 21, 2013	



Grid North
Tot Corr (M->G)
7.1549°
Mag Dec (7.489°)
Grid Conv (0.334°)

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Comments	Survey MD(ft)	Inclination(deg)	Azimuth(deg)	TVD(ft)	Sub-Sea TVD	VS(ft)	NS(ft)	EW(ft)	Northing(ftUS)	Easting(ftUS)	Latitude(deg)	Longitude(deg)	DLS(°/100ft)	Tool Face(deg)
SHL	0.00	0.00	3.82	0.00	-3623.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.370	W 103 42 24.940	3.82	
KOP Build @ 10° DLS	10145.04	0.00	3.82	10145.04	6522.04	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.370	W 103 42 24.940	0.00	3.82
Landing Point	11045.04	90.00	3.82	10718.00	7095.00	572.96	571.69	38.16	457458.96	693683.86	N 32 15 22.024	W 103 42 24.457	10.00	0.00
XTO SDE 31 Federal 18H PBHL	15068.22	90.00	3.82	10718.00	7095.00	4596.13	4585.93	306.12	461473.00	693951.80	N 32 16 1.731	W 103 42 21.063	0.00	



Drawn By: Cuthbert, Lisa
Data Created: August 21, 2013 02:53:41 PM
Checked By:
Checked Date:
Approved By:
Approved Date:

XTO SDE 31 Federal 18H Rev0 MDT 21Aug13 Proposal Geodetic Report

(Def Plan)

Report Date: August 21, 2013 - 02:59 PM
Client: XTO
Field: NM Lea County (NAD 27)
Structure / Slot: XTO SDE 31 Federal 18H / Slot1
Well: SDE 31 Federal 18H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: XTO SDE 31 Federal 18H Rev0 MDT 21Aug13
Survey Date: August 21, 2013
Tort / AHD / DDI / ERD Ratio: 90.000 ° / 4596.135 ft / 5.765 / 0.429
Coordinate Reference System: NAD27 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 15' 16.36965", W 103° 42' 24.94007"
Location Grid N/E Y/X: N 456887.300 ftUS, E 693645.700 ftUS
CRS Grid Convergence Angle: 0.3343 °
Grid Scale Factor: 0.99995204

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 3.819 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3623.000 ft above
Seabed / Ground Elevation: 3606.000 ft above
Magnetic Declination: 7.489 °
Total Gravity Field Strength: 998.469mgm (9.80665 Based)
Total Magnetic Field Strength: 48388.066 nT
Magnetic Dip Angle: 60.126 °
Declination Date: August 21, 2013
Magnetic Declination Model: BGM 2013
North Reference: Grid North
Grid Convergence Used: 0.3343 °
Total Corr Mag North->Grid North: 7.1549 °
Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL	0.00	0.00	3.82	0.00	0.00	0.00	0.00	N/A	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	100.00	0.00	3.82	100.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	200.00	0.00	3.82	200.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	300.00	0.00	3.82	300.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	400.00	0.00	3.82	400.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	500.00	0.00	3.82	500.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	600.00	0.00	3.82	600.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	700.00	0.00	3.82	700.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	800.00	0.00	3.82	800.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	900.00	0.00	3.82	900.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	1000.00	0.00	3.82	1000.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	1100.00	0.00	3.82	1100.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	1200.00	0.00	3.82	1200.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	1300.00	0.00	3.82	1300.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	1400.00	0.00	3.82	1400.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	1500.00	0.00	3.82	1500.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	1600.00	0.00	3.82	1600.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	1700.00	0.00	3.82	1700.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	1800.00	0.00	3.82	1800.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	1900.00	0.00	3.82	1900.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	2000.00	0.00	3.82	2000.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	2100.00	0.00	3.82	2100.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	2200.00	0.00	3.82	2200.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	2300.00	0.00	3.82	2300.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	2400.00	0.00	3.82	2400.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	2500.00	0.00	3.82	2500.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	2600.00	0.00	3.82	2600.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	2700.00	0.00	3.82	2700.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	2800.00	0.00	3.82	2800.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	2900.00	0.00	3.82	2900.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	3000.00	0.00	3.82	3000.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	3100.00	0.00	3.82	3100.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	3200.00	0.00	3.82	3200.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	3300.00	0.00	3.82	3300.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	3400.00	0.00	3.82	3400.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	3500.00	0.00	3.82	3500.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	3600.00	0.00	3.82	3600.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	3700.00	0.00	3.82	3700.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	3800.00	0.00	3.82	3800.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	3900.00	0.00	3.82	3900.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	4000.00	0.00	3.82	4000.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	4100.00	0.00	3.82	4100.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	4200.00	0.00	3.82	4200.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	4300.00	0.00	3.82	4300.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	4400.00	0.00	3.82	4400.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	4500.00	0.00	3.82	4500.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	4600.00	0.00	3.82	4600.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	4700.00	0.00	3.82	4700.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	4800.00	0.00	3.82	4800.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	4900.00	0.00	3.82	4900.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	5000.00	0.00	3.82	5000.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	5100.00	0.00	3.82	5100.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	5200.00	0.00	3.82	5200.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	5300.00	0.00	3.82	5300.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	5400.00	0.00	3.82	5400.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	5500.00	0.00	3.82	5500.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	5600.00	0.00	3.82	5600.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	5700.00	0.00	3.82	5700.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	5800.00	0.00	3.82	5800.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	5900.00	0.00	3.82	5900.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	6000.00	0.00	3.82	6000.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	6100.00	0.00	3.82	6100.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	6200.00	0.00	3.82	6200.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	6300.00	0.00	3.82	6300.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	6400.00	0.00	3.82	6400.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS ("/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	6500.00	0.00	3.82	6500.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	6600.00	0.00	3.82	6600.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	6700.00	0.00	3.82	6700.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	6800.00	0.00	3.82	6800.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	6900.00	0.00	3.82	6900.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	7000.00	0.00	3.82	7000.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	7100.00	0.00	3.82	7100.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	7200.00	0.00	3.82	7200.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	7300.00	0.00	3.82	7300.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	7400.00	0.00	3.82	7400.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	7500.00	0.00	3.82	7500.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	7600.00	0.00	3.82	7600.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	7700.00	0.00	3.82	7700.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	7800.00	0.00	3.82	7800.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	7900.00	0.00	3.82	7900.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	8000.00	0.00	3.82	8000.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	8100.00	0.00	3.82	8100.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	8200.00	0.00	3.82	8200.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	8300.00	0.00	3.82	8300.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	8400.00	0.00	3.82	8400.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	8500.00	0.00	3.82	8500.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	8600.00	0.00	3.82	8600.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	8700.00	0.00	3.82	8700.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	8800.00	0.00	3.82	8800.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	8900.00	0.00	3.82	8900.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	9000.00	0.00	3.82	9000.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	9100.00	0.00	3.82	9100.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	9200.00	0.00	3.82	9200.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	9300.00	0.00	3.82	9300.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	9400.00	0.00	3.82	9400.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	9500.00	0.00	3.82	9500.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	9600.00	0.00	3.82	9600.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	9700.00	0.00	3.82	9700.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	9800.00	0.00	3.82	9800.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	9900.00	0.00	3.82	9900.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	10000.00	0.00	3.82	10000.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	10100.00	0.00	3.82	10100.00	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	10145.04	0.00	3.82	10145.04	0.00	0.00	0.00	0.00	456887.30	693645.70	N 32 15 16.37	W 103 42 24.94
	10200.00	5.50	3.82	10199.92	2.63	2.63	0.18	10.00	456889.93	693645.88	N 32 15 16.40	W 103 42 24.94
	10300.00	15.50	3.82	10298.12	20.83	20.78	1.39	10.00	456908.08	693647.09	N 32 15 16.58	W 103 42 24.92
	10400.00	25.50	3.82	10391.67	55.80	55.67	3.72	10.00	456942.97	693649.42	N 32 15 16.92	W 103 42 24.89
	10500.00	35.50	3.82	10477.73	106.48	106.24	7.09	10.00	456993.54	693652.79	N 32 15 17.42	W 103 42 24.85
	10600.00	45.50	3.82	10553.68	171.34	170.96	11.41	10.00	457058.25	693657.11	N 32 15 18.06	W 103 42 24.80
	10700.00	55.50	3.82	10617.21	248.40	247.84	16.54	10.00	457135.13	693662.24	N 32 15 18.82	W 103 42 24.73
	10800.00	65.50	3.82	10666.39	335.32	334.57	22.33	10.00	457221.86	693668.03	N 32 15 19.68	W 103 42 24.66
	10900.00	75.50	3.82	10699.74	429.46	428.51	28.60	10.00	457315.78	693674.30	N 32 15 20.61	W 103 42 24.58
	11000.00	85.50	3.82	10716.23	527.96	526.79	35.16	10.00	457414.06	693680.86	N 32 15 21.58	W 103 42 24.49
	11045.04	90.00	3.82	10718.00	572.96	571.89	38.16	10.00	457458.96	693683.86	N 32 15 22.02	W 103 42 24.46
	11100.00	90.00	3.82	10718.00	627.92	626.52	41.82	0.00	457513.79	693687.52	N 32 15 22.57	W 103 42 24.41
	11200.00	90.00	3.82	10718.00	727.92	726.30	48.48	0.00	457613.58	693694.18	N 32 15 23.55	W 103 42 24.33
	11300.00	90.00	3.82	10718.00	827.92	826.08	55.14	0.00	457713.34	693700.84	N 32 15 24.54	W 103 42 24.24
	11400.00	90.00	3.82	10718.00	927.92	925.86	61.80	0.00	457813.11	693707.50	N 32 15 25.53	W 103 42 24.16
	11500.00	90.00	3.82	10718.00	1027.92	1025.63	68.46	0.00	457912.88	693714.16	N 32 15 26.51	W 103 42 24.07
	11600.00	90.00	3.82	10718.00	1127.92	1125.41	75.12	0.00	458012.65	693720.82	N 32 15 27.50	W 103 42 23.99
	11700.00	90.00	3.82	10718.00	1227.92	1225.19	81.78	0.00	458112.43	693727.48	N 32 15 28.49	W 103 42 23.90
	11800.00	90.00	3.82	10718.00	1327.92	1324.97	88.44	0.00	458212.20	693734.14	N 32 15 29.48	W 103 42 23.82
	11900.00	90.00	3.82	10718.00	1427.92	1424.75	95.10	0.00	458311.97	693740.80	N 32 15 30.46	W 103 42 23.74
	12000.00	90.00	3.82	10718.00	1527.92	1524.52	101.78	0.00	458411.75	693747.46	N 32 15 31.45	W 103 42 23.65
	12100.00	90.00	3.82	10718.00	1627.92	1624.30	108.42	0.00	458511.52	693754.12	N 32 15 32.44	W 103 42 23.57
	12200.00	90.00	3.82	10718.00	1727.92	1724.08	115.08	0.00	458611.29	693760.78	N 32 15 33.42	W 103 42 23.48
	12300.00	90.00	3.82	10718.00	1827.92	1823.86	121.74	0.00	458711.07	693767.44	N 32 15 34.41	W 103 42 23.40
	12400.00	90.00	3.82	10718.00	1927.92	1923.63	128.40	0.00	458810.84	693774.10	N 32 15 35.40	W 103 42 23.31
	12500.00	90.00	3.82	10718.00	2027.92	2023.41	135.06	0.00	458910.61	693780.76	N 32 15 36.38	W 103 42 23.23
	12600.00	90.00	3.82	10718.00	2127.92	2123.19	141.73	0.00	459010.38	693787.42	N 32 15 37.37	W 103 42 23.15
	12700.00	90.00	3.82	10718.00	2227.92	2222.97	148.39	0.00	459110.16	693794.08	N 32 15 38.36	W 103 42 23.06
	12800.00	90.00	3.82	10718.00	2327.92	2322.75	155.05	0.00	459209.93	693800.74	N 32 15 39.34	W 103 42 22.98
	12900.00	90.00	3.82	10718.00	2427.92	2422.52	161.71	0.00	459309.70	693807.40	N 32 15 40.33	W 103 42 22.89
	13000.00	90.00	3.82	10718.00	2527.92	2522.30	168.37	0.00	459409.48	693814.06	N 32 15 41.32	W 103 42 22.81
	13100.00	90.00	3.82	10718.00	2627.92	2622.08	175.03	0.00	459509.25	693820.72	N 32 15 42.31	W 103 42 22.72
	13200.00	90.00	3.82	10718.00	2727.92	2721.86	181.69	0.00	459609.02	693827.38	N 32 15 43.29	W 103 42 22.64
	13300.00	90.00	3.82	10718.00	2827.92	2821.64	188.35	0.00	459708.80	693834.04	N 32 15 44.28	W 103 42 22.56
	13400.00	90.00	3.82	10718.00	2927.92	2921.41	195.01	0.00	459808.57	693840.70	N 32 15 45.27	W 103 42 22.47
	13500.00	90.00	3.82	10718.00	3027.92	3021.19	201.67	0.00	459908.34	693847.36	N 32 15 46.25	W 103 42 22.39
	13600.00	90.00	3.82	10718.00	3127.92	3120.97	208.33	0.00	460008.11	693854.02	N 32 15 47.24	W 103 42 22.30
	13700.00	90.00	3.82	10718.00	3227.92	3220.75	214.99	0.00	460107.89	693860.68	N 32 15 48.23	W 103 42 22.22
	13800.00	90.00	3.82	10718.00	3327.92	3320.53	221.65	0.00	460207.66	693867.34	N 32 15 49.21	W 103 42 22.13
	13900.00	90.00	3.82	10718.00	3427.92	3420.30	228.31	0.00	460307.43	693874.00	N 32 15 50.20	W 103 42 22.05
	14000.00	90.00	3.82	10718.00	3527.92	3520.08	234.97	0.00	460407.21	693880.66	N 32 15 51.19	W 103 42 21.96
	14100.00	90.00	3.8									

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
XTO SDE 31 Federal 18H PBHL	15068.22	90.00	3.82	10718.00	4598.13	4585.93	308.12	0.00	461473.00	693951.80	N 32 16 1.73	W 103 42 21.06

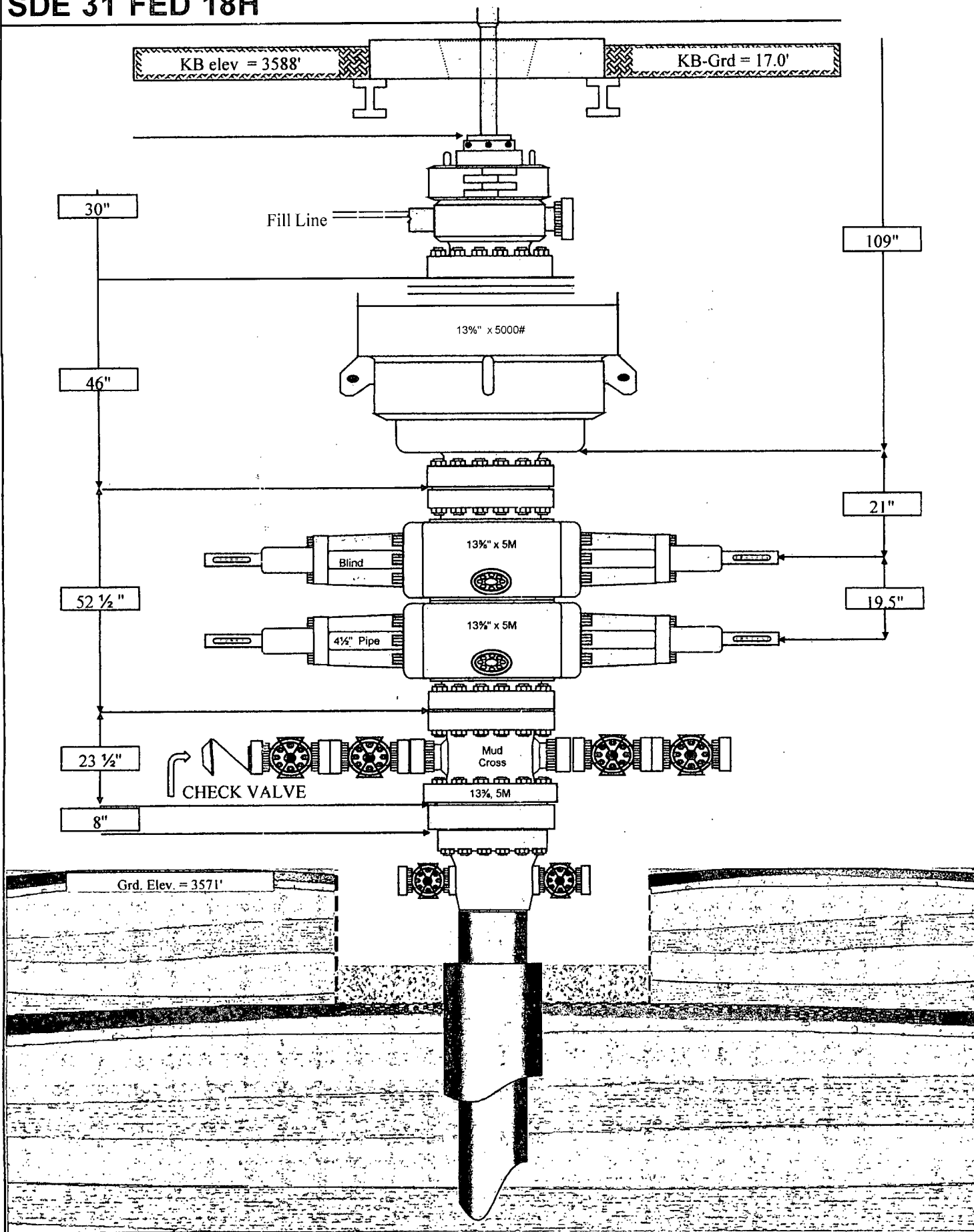
Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	17.000	1/100.000	30.000	30.000	SLB_MWD-STD-Depth Only	Original Borehole / XTO SDE 31 Federal 18H Rev0 MDT 21Aug13
	17.000	15068.219	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / XTO SDE 31 Federal 18H Rev0 MDT 21Aug13

SDE 31 FED 18H



Drilling Operations Choke Manifold 5M Service

Exhibit E-1 – Choke Manifold Diagram

