Form 3160-3
(August 2007)

HOBBS OCD
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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

UNORTHODOX LOCATION

FORM APPROVED
OMB No. 1004-0137
Expires July 31, 2010

16-965

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☑ DRILL ☐ REENTER	5. Lease Serial No. NMNM 132953
	6. If Indian, Allotee or Tribe Name
	7. If Unit or CA Agreement, Name and No.
1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone	8. Lease Name and Well No. Duo Sonic 29 Federal #701H (316013)
2. Name of Operator Endurance Resources, LLC (270329)	9. API Well No. 30-025-43433
3a. Address 203 West Wall Suite 1000 Midland, Tx 79701 / 3b. Phone No. (include area code) 432-242-4680	10. Field and Pool, or Exploratory DOGIE DRAW; Wolfcamp (97980)
4. Location of Well (Report location clearly and in accordance with any State requirements.*) At surface 150' FSL & 660' FWL At proposed prod. zone 330' FNL & 660' FWL	11. Sec., T. R. M. or Blk. and Survey or Area Sec 29-25s-35e
14. Distance in miles and direction from nearest town or post office* 15 miles Northwest of Jal, New Mexico	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) 150'	16. No. of acres in lease 640 ac	17. Spacing Unit dedicated to this well 160 ac
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 150'	19. Proposed Depth MD: 17128' TVD: 12575'	20. BLM/BIA Bond No. on file NMB001200
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3289.4' GL	22. Approximate date work will start* 10/01/2016	23. Estimated duration 45 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 Tinlee Tilton	Name (Printed/Typed) Tinlee Tilton	Date 06/10/2016
Title Drilling Engineer		
Approved by (Signature) /s/Cody Layton	Name (Printed/Typed)	Date SEP 19 2016
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

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

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. 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)

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

KZ 09/28/16

CARLSBAD CONTROLLED WATER BASIN

SEE ATTACHED FOR CONDITIONS OF APPROVAL

ENDURANCE
RESOURCES, LLC

Endurance Resources LLC

DRILLING & OPERATIONS PROGRAM

Duo Sonic 29 Federal #701H

SHL: 150' FSL & 660' FWL

Sec 29-25S-35E

BHL: 330' FNL & 660' FWL

Sec 29-25S-35E

Lea Co, NM

1. Geological Name of Surface Formation
   Quaternary

2. Estimated Tops of Important Geological Markers

Fresh Water	400'
Rustler	1003'
Top of Salt	1,538'
Lamar Limestone	5,252'
Delaware	5,277' – Oil
Bone Spring	9,134' – Oil
1st Bone Spring	10,381' – Oil
2nd Bone Spring	10,934' – Oil
3rd Bone Spring	12,007' – Oil
Wolfcamp	12,403' – Oil

   TVD: 12,575'; MD: 17,128'

3. Estimated Depths of Anticipated Fresh Water, Oil or Gas
   The estimated depths at which water, oil and gas will be encountered are as follows:
   Water: Average depth to water: 400'. Minimum depth: 0'. Max: 400'. As reported from the New Mexico Office of the State Engineer website.

   Oil & Gas: 5,277' – 12,575' (Delaware through Wolfcamp)

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No other formations are expected to give up oil, gas, or fresh water in measurable quantities.

4. Proposed Casing Program:

Hole Size	Casing Size	Depth	#/ft	Grade	Connection	Collapse	Burst	Tension
14 ¾"	10 ¾"	0 - 1,103'	40.5	J-55	STC	3.13	6.21	9.4
9 7/8"	7 5/8"	0 - 11,445'	29.7	HCP-110	LTC	1.25	1.77	2.26
6 ¾"	5"	0 - 17,128'	23.2	HCP-110	TTRS-1	3.1	2.68	1.69

NOTE: ALL CASING IS NEW & API APPROVED. WHILE RUNNING CASING, PIPE WILL BE KEPT A MINIMUM OF 1/3 FULL AT ALL TIMES TO AVOID APPROACHING COLLAPSE PRESSURE OF THE CASING. SURFACE CASING WILL BE WATCHED & NECESSARY ADJUSTMENTS MADE TO ENSURE PIPE IF FULL DUE TO LOST CIRCULATION ZONES THAT MAY OCCUR. CENTRALIZERS WILL BE USED ON SURFACE CASING

5. Proposed Cement Program:
   a. 10 3/4" Surface
      Lead: 400 sks ExtendaCem Class C (13.7 ppg / 1.694 cuft/sk)
      Tail: 425 sks HalCem Class C (14.8 ppg / 1.32 cuft/sk)
      **Calculated w/ 100% excess on OH volume
   b. 7 5/8" Intermediate
      Lead: 720 sks Tuned Light Class H (9 ppg / 3.556 cuft/sk)
      Tail: 415 sks HalCem Class C (14.8 ppg / 1.326 cuft/sk)
      **Calculated w/ 30% excess on OH volumes & 10% in CH
   c. 5" Production
      Lead: 130 sks 50/50 Poz (Class H) + 5% Cal-Seal 60 Lost Circulation Additive + 8% Bentonite + 0.1% FE-2 + 0.25 lbm/sk D-Air 5000 Defoamer (11.5 ppg / 2.672 cuft/sk)
      Tail: 565 sks Class H + 0.5% Halad R-344 Low Fluid Loss Control + 0.4% Halad R-322 + 0.4% HR-800 Retarder (14.5 ppg / 1.227 cuft/sk)
   **Calculated w/ 20% excess in vertical OH, 20% excess on lateral OH volumes & 10% in CH

NOTE: THE ABOVE CEMENT VOLUMES COULD BE REVISED PENDING FLUID CALIPER & CALIPER LOG DATA. SURFACE AND INTERMEDIATE VOLUMES ARE DESIGNED TO CIRCULATE TO SURFACE. PRODUCTION IS DESIGNED TO TIE INTO 7 5/8" CASING 2000'.

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6. Minimum Specifications for Pressure Control:

13-5/8 (10M) working pressure BOP system consisting of one set of blind rams and two sets of pipe rams and a 10,000# annular type preventer (please see schematic). A 10M choke manifold & 120 gallon accumulator with floor and remote operating stations & auxiliary power system. Rotating head as needed. ~~A KC~~ Upper & Lower KC will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor.

BOP unit will be hydraulically operated. BOP will be NU and operated at least once a day while drilling and the blind rams will be operated when out of the hole during trips. From the base of the surface casing through running of production casing, the well will be equipped with a 10M BOP system. Below the surface casing shoe, this 10M system will be equipped with a HCR valve, remote kill line, & annular to match. The remote kill line will be installed prior to testing the system & tested to stack pressure.

Before drilling out of the surface casing, BOP will be tested by an independent testing company to 250 psi low & 5,000 psi high. Hydril will be tested to 250 psi low and 5,000 psi high. Surface casing will be tested to 1500 psi for 30 minutes. Before drilling out the intermediate casing, the BOP will be retested by an independent testing company to 250 psi low & 10,000 psi high. Hydril will be test to 250 psi low and 5000 psi high. Intermediate casing will be tested to 3000 psi for 30 minutes. These low pressure tests from 250 to 300 psi will be held a minimum of 10 minutes if test is done with a test plug & 30 minutes without a test plug.

An IBOP or float sub will be in use at all times. A wear bushing will be installed in the casing head. All BOPE connections subjected to well pressure will be flanged, welded, or clamped.

A multi-bowl wellhead type system will be used so we will not N/D the BOP system in order to set the intermediate casing (please see attached schematic).

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6. Minimum Specifications for Pressure Control:

13-5/8 (10M) working pressure BOP system consisting of one set of blind rams and one set of pipe rams and a 5000# annular type preventer (please see BOP schematic). A 5M choke manifold & 120 gallon accumulator with floor and remote operating stations & auxiliary power system. Rotating head as needed. A KC will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor.

BOP unit will be hydraulically operated. BOP will be NU and operated at least once a day while drilling and the blind rams will be operated when out of the hole during trips. From the base of the 13-3/8" csg through running of production casing, the well will be equipped with a 10M BOP system. Below the 9-5/8 csg shoe, this 10M system will be equipped with a HCR valve, remote kill line, & annular to match. The remote kill line will be installed prior to testing the system & tested to stack pressure.

Before drilling out of the 13-3/8 surface casing, BOP will be tested by an independent surface company to 250 psi low & 5000 psi high. Hydril will be tested to 250 psi low and 1500 psi high. Before drilling out the 9-5/8 intermediate shoe BOP will be tested by an independent service company to 250psi low and 5000 psi high. Hydril will be tested to 250 psi low and 2500 psi high. These low pressure tests from 250 to 300 psi will be held a minimum of 10 minutes if test is done with a test plug & 30 minutes without a test plug.

7. Estimated BHP:

5659 psi @ 12,575' TVD

8. Mud Program: The applicable depths & properties of this system are as follows:

Depth	Type of System	Mud Weight	Viscosity (sec)	Waterloss (cc)
0 – 1,103'	Fresh	8.4	29-32	NC
1,103' – 9,234'	OBM	8.8	55-65	<8
9,234' – 17,128'	Cut Brine	8.3 – 9.4	28-32	NC-12

11,445'
09/14/16
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NOTE: NECESSARY MUD PRODUCTS FOR WEIGHT ADDITION & FLUID LOSS WILL BE ON LOCATION AT ALL TIMES. VISUAL MUD MONITORING EQUIPMENT (I.E. TRIP TANK) WILL BE IN PLACE TO DETECT VOLUME CHANGES INDICATING LOSS OR GAIN OF CIRCULATION VOLUME WITH ALARMS.

9. Auxiliary Well Control & Monitoring Equipment:
   a. ~~A KC~~ upper & lower 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 at all times
   c. H2S detection equipment will be in operation & breathing apparatuses will be on location after the drill out of the surface casing shoe until the production casing in cemented.

10. Testing, Logging & Coring Program:
   a. No drill stem tests are planned.
   b. Neutron Porosity well log ran from KOP to 200'.
   c. No open hole logs are planned.
   d. No coring is planned.

11. Potential Hazards:
   No abnormal pressures or temperatures are expected. If H2S is encountered, Endurance Resources LLC will comply with Onshore Order #6. Regardless, all personnel will be trained & qualified with H2S safety. Rig safety equipment will all also be checked daily once drill out of the surface casing shoe to TD. It has been noted that H2S has been encountered in the salt section. If H2S is encountered, measurements & formations will be reported to the BLM.

12. Anticipated starting date & Duration of Operations:
   Road & location construction will begin after the BLM has approved the APD. Anticipated spud date will begin after BLM approval & after a drilling rig is secured. Move in operations & drilling is expected to take no more than 45 days. An additional 30-50 days will be needed to complete this well & construct surface facilities and/or lay flow lines in order to place well on production.

TTRS1 Casing Connection

SIZE: 5 in. [127]
WEIGHT: 23.2 lbm/ft [34.53]
GRADE: HCP-110
CONNECTION: TTRS1
High Collapse

Material	Imperial	Metric
Yield Stress (min) (psi [kPa])	110,000	758,423
Yield Stress (max) (psi [kPa])	140,000	965,266
Tensile Stress (min) (psi [kPa])	125,000	861,845
Hardness (max) (HRC [HBW])	N/A	N/A
Pipe Body Data		
Outside Diameter, Nominal (in [mm])	5.000	127.00
Weight, Nominal (lbm/ft [kg/m])	23.20	34.53
Wall Thickness, Nominal (in [mm])	0.478	12.14
Inside Diameter, Nominal (in [mm])	4.044	102.72
API Drift Diameter (in [mm])	3.919	99.54
Alternate Drift Diameter (in [mm])	N/A	N/A
Cross Section, Nominal (sq.in. [mm2])	6.791	4381.28
Pipe Performance		
Tensile Yield (lbf [N]) Assume same for connection	747,000	3,322,820
Internal Yield Pressure (psi [kPa])	18,400	126,864
Collapse Pressure (psi [kPa])	22,630	156,028
Hydrostatic Test Pressure (psi [kPa])	10,000	68,948
Connection Data		
Connection OD (in [mm])	5.785	146.94
Special Clearance OD (in [mm])	N/A	N/A
Connection ID (in [mm])	4.044	102.72
Coupling Length (min) (in [mm])	9.125	231.78
Make-up Loss (in [mm])	4.063	103.20
Threads per Inch (pitch [mm])	5.000	5.08
Torques (Make-Up, Operational, Yield)		
Minimum (lbf-ft[N.m])	10,100	13,690
Optimum (lbf-ft [N.m])	10,500	14,240
Maximum (lbf-ft [N.m])	11,900	16,130
Max Operational, 1.176 S.F. (lbf-ft [N.m])	11,900	16,130
Yield (lbf-ft [N.m])	25,900	35,120

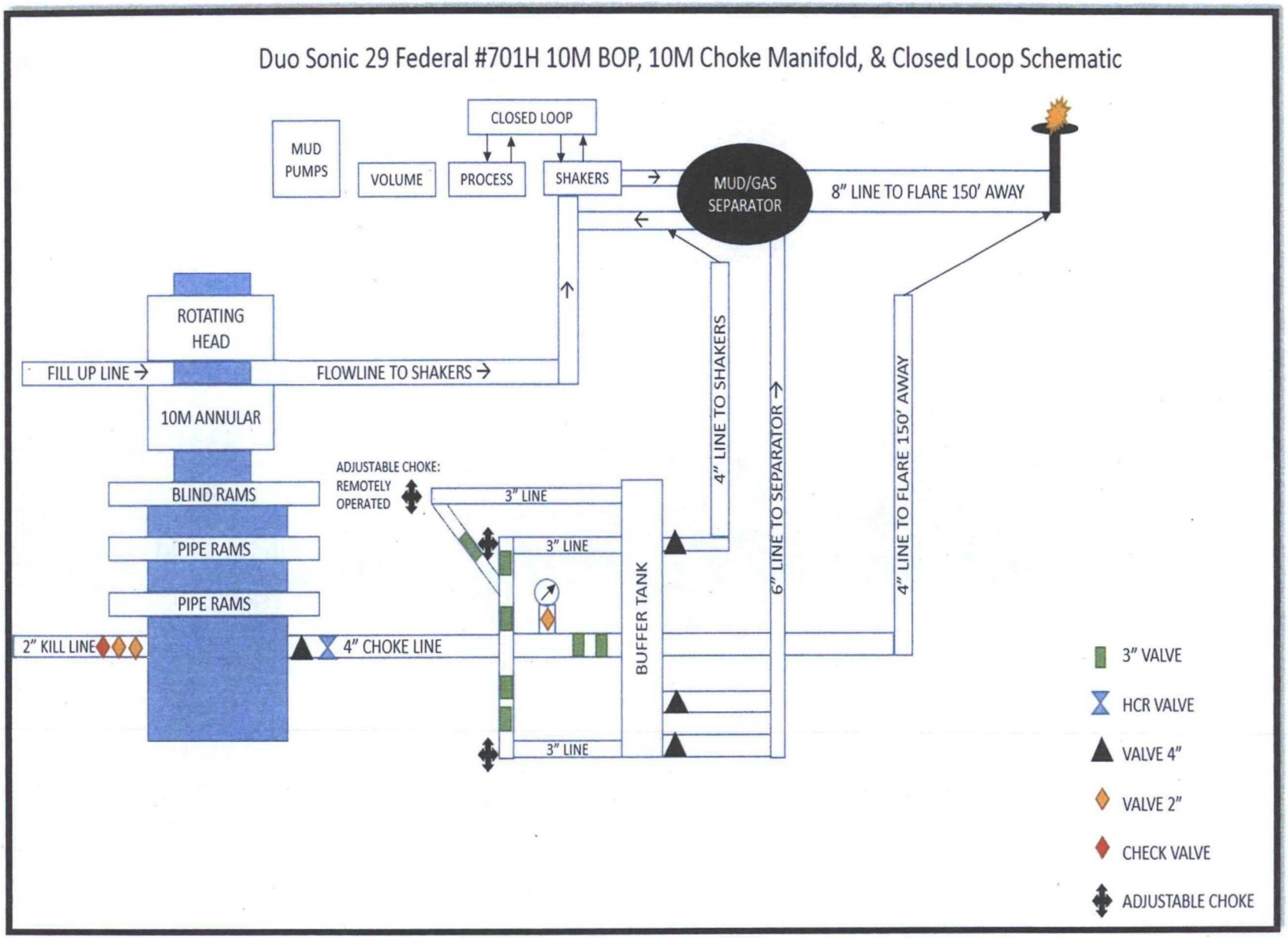
All connection performance and torque values are calculated (to be verified by testing).

Connection Performance	
Tensile Efficiency (% of pipe Body)	100%
Internal Yield Pressure (% of pipe Body)	100%
External yield pressure (% of pipe Body)	100%
Compression Efficiency (% of pipe Body)	100%
Bending rate, with sealability (°/100 ft)	20°

Inspection Criteria: All the material is inspected to 5% Test notch inspection for OD/ID, Long/Trans and wall check per API/ASTM requirements though EMI/SEA.

Technical Support:
8799 North Loop East, Suite 300
Houston, TX 77029
Local: 713-631-0071 • Toll Free: 1-800-469-7549
licenseesupport@tejastubular.com

Duo Sonic 29 Federal #701H 10M BOP, 10M Choke Manifold, & Closed Loop Schematic



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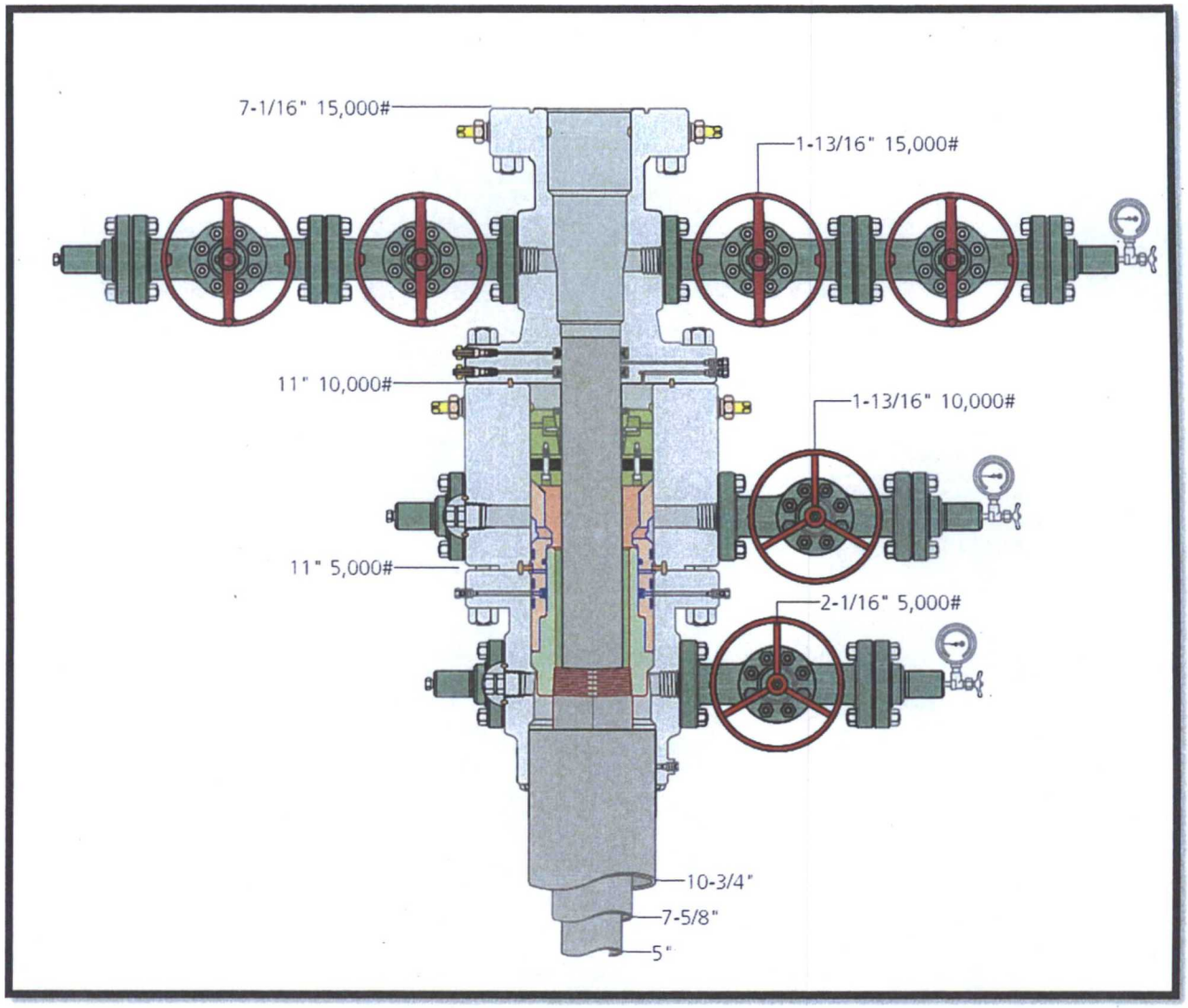

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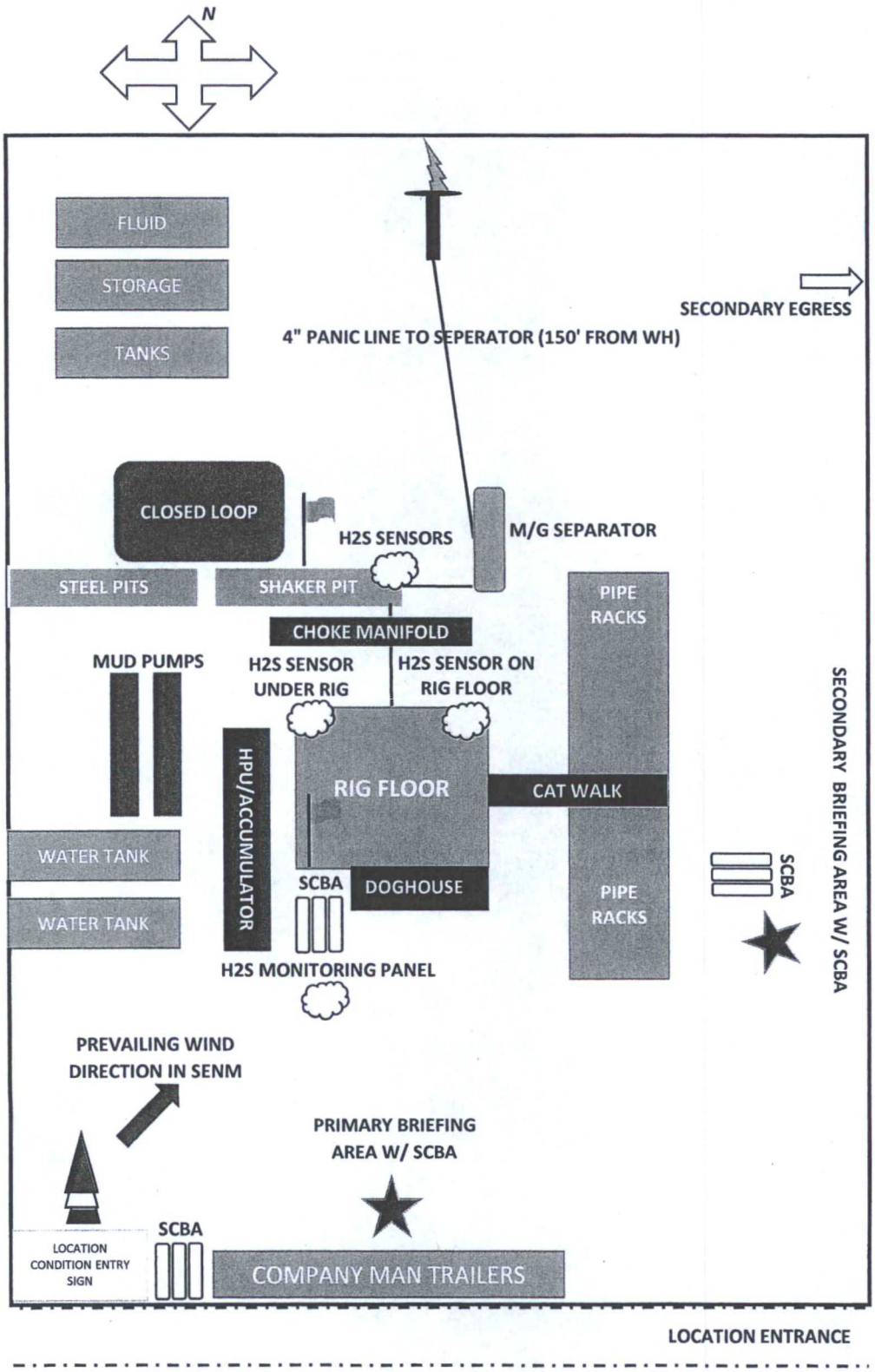
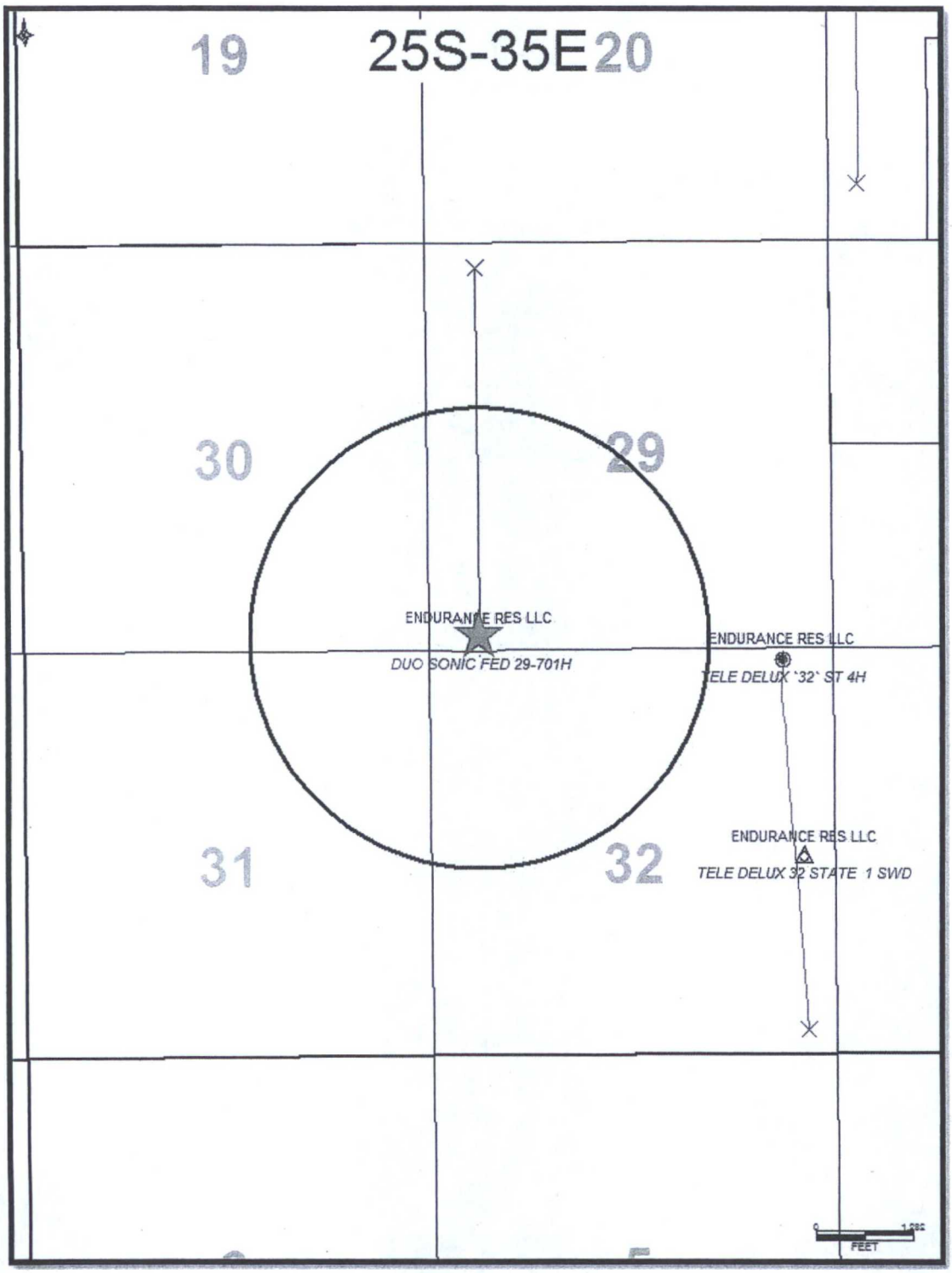
RIG LOCATION LAYOUT & H2S SAFETY EQUIPMENT LOCATION

WELL PADS 420' X 350'

NOTE: DRAWING NOT TO SCALE



Duo Sonic 29 Federal-701H
3000' H2S Radius Map



Surface Location

H2S 3000' Radius

North Reference Sheet for Duo Sonic 29 Fed - Duo Sonic 29 Fed 701H - Wellbore #1

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.
Vertical Depths are relative to GL 3289.4' + KB 25' @ 3314.40usft (TBD). Northing and Easting are relative to Duo Sonic 29 Fed 701H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Transverse Mercator (Gauss-Kruger)
Central Meridian is -104.33°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:0° 0' 0.000 N°
False Easting: 541,337.50usft, False Northing: 0.00usft, Scale Reduction: 1.00000561

Grid Coordinates of Well: 399,388.96 usft N, 831,626.95 usft E
Geographical Coordinates of Well: 32° 05' 40.31" N, 103° 23' 45.37" W
Grid Convergence at Surface is: 0.50°

Based upon Minimum Curvature type calculations, at a Measured Depth of 17,128.03usft
the Bottom Hole Displacement is 4,798.95usft in the Direction of 359.45° (Grid).

Magnetic Convergence at surface is: -6.58° (15 March 2016, , BGGM2015)

Magnetic Model:	BGGM2015
Date:	15-Mar-16
Declination:	7.08°
Inclination/Dip:	60.05°
Field Strength:	48087

Grid North is 0.50° East of True North (Grid Convergence)
Magnetic North is 7.08° East of True North (Magnetic Declination)
Magnetic North is 6.58° East of Grid North (Magnetic Convergence)

To convert a True Direction to a Grid Direction, Subtract 0.50°
To convert a Magnetic Direction to a True Direction, Add 7.08° East
To convert a Magnetic Direction to a Grid Direction, Add 6.58°