

**PECOS DISTRICT  
CONDITIONS OF APPROVAL**

**HOBBS OCD**  
**MAY 23 2018**  
**RECEIVED**

OPERATOR'S NAME:	Endurance Resources, LLC
LEASE NO.:	NMNM18306
WELL NAME & NO.:	Stratocaster 20 Fed – 8H
SURFACE HOLE FOOTAGE:	330'/N & 1650'/E
BOTTOM HOLE FOOTAGE:	330'/S & 660'/E
LOCATION:	Section 20, T 23 S., R 34 E., NMPM
COUNTY:	Lea 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.

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## **I. GENERAL PROVISIONS**

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

## **II. PERMIT EXPIRATION**

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

## **III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES**

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

## **IV. NOXIOUS WEEDS**

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

## **V. SPECIAL REQUIREMENT(S)**

### **Pasture Fence**

The pasture fence will be avoided during construction of the pad. If the fence is damaged, construction will cease until the fence is repaired. Any damage to the fence will be immediately reported to the Carlsbad Field Office and the grazing allottee.

### **Watershed**

- The entire well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The berm shall be maintained through the life of the well and after interim reclamation has been completed.
- Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion.
- Stockpiling of topsoil is required. The top soil shall be stockpiled in an appropriate location to prevent loss of soil due to water or wind erosion and not used for berming or erosion control.

### **Surface and Buried Pipeline COAs:**

- A leak detection plan will be submitted to the BLM Carlsbad Field Office for approval prior to pipeline installation. The method could incorporate gauges to detect pressure drops, siting valves and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.

## **VI. CONSTRUCTION**

### **A. NOTIFICATION**

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

### **B. TOPSOIL**

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

### **C. CLOSED LOOP SYSTEM**

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

### **D. FEDERAL MINERAL MATERIALS PIT**

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

### **E. WELL PAD SURFACING**

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

### **F. EXCLOSURE FENCING (CELLARS & PITS)**

**Exclosure Fencing**

The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

**G. ON LEASE ACCESS ROADS****Road Width**

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

**Surfacing**

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

**Crowning**

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

**Ditching**

Ditching shall be required on both sides of the road.

**Turnouts**

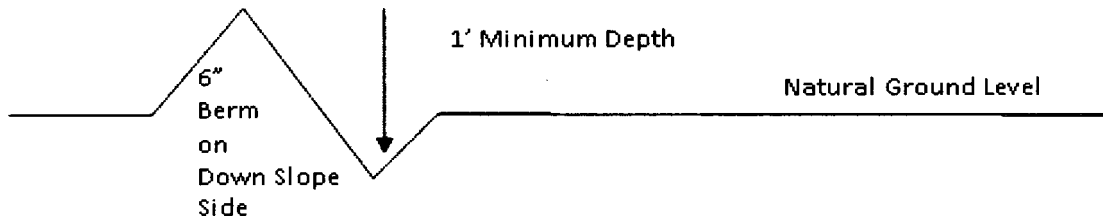
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

**Drainage**

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

#### **Cross Section of a Typical Lead-off Ditch**



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

#### **Formula for Spacing Interval of Lead-off Ditches**

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

#### **Cattleguards**

An appropriately sized cattleguard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattleguards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguards that are in place and are utilized during lease operations.

#### **Fence Requirement**

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

#### **Public Access**

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

## Construction Steps

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

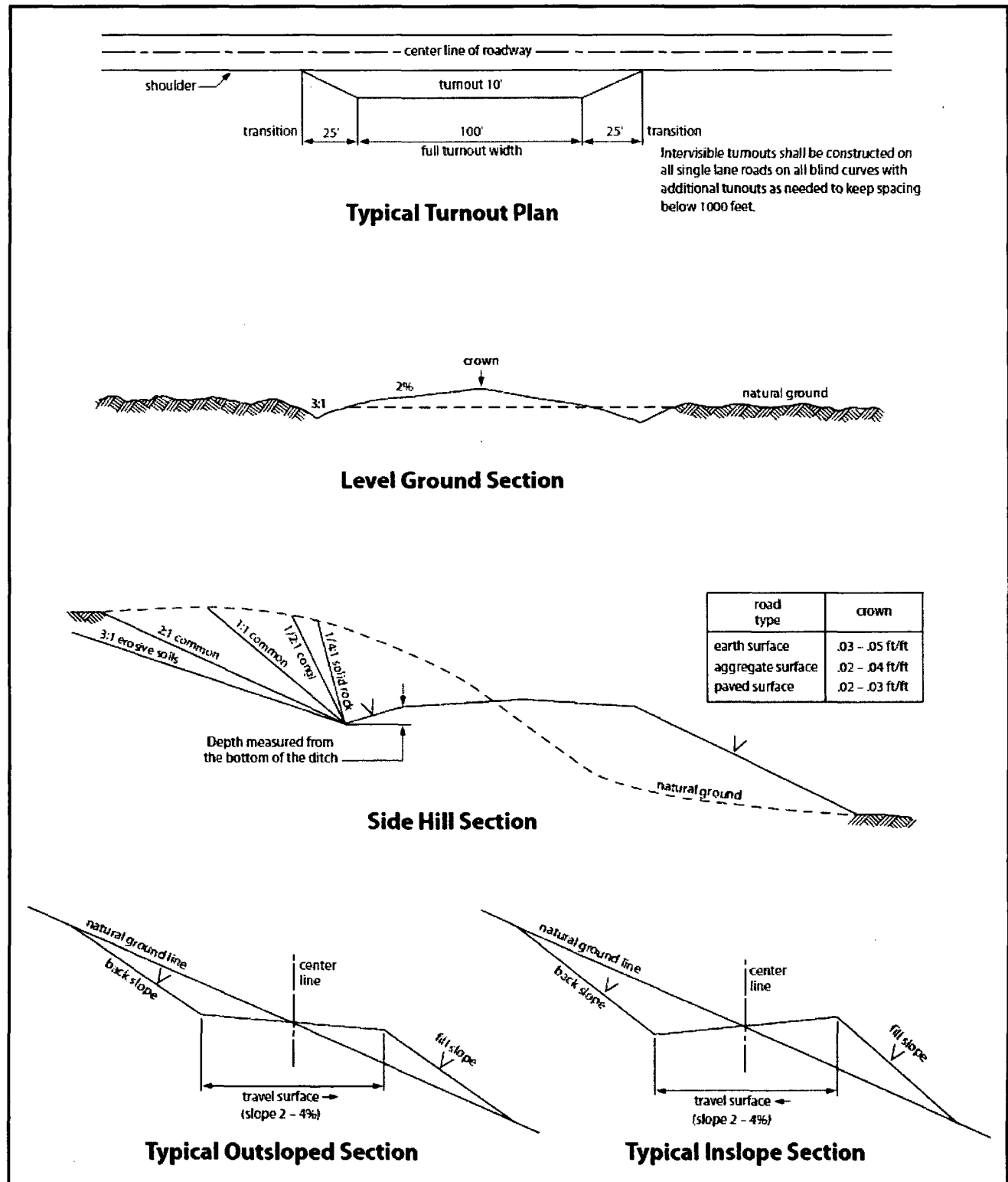


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

## VII. DRILLING

### A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

☒ **Lea County**

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,  
(575) 393-3612

1. A Hydrogen Sulfide (H<sub>2</sub>S) Drilling Plan shall be activated **500** feet prior to drilling into the **Delaware** formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.
4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

### B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

**Centralizers required on surface casing per Onshore Order 2.III.B.1.f.**



**Wait on cement (WOC) for Water Basin:**

After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. **DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE.**

**Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.**

**No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.**

**Possible water flows in the Salado and Castile.**

**Possible lost circulation in the Red Beds, Rustler, and Delaware.**

1. The 13-3/8 inch surface casing shall be set at approximately 1100 feet (if salt is encountered, set casing at least 25 feet above the salt) and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
  - b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**
  - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
  - d. If cement falls back, remedial cementing will be done prior to drilling out that string.

**Formation below the 13-3/8" shoe to be tested according to Onshore Order**

**2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office**

2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is:

☒ Cement to surface. If cement does not circulate see B.1.a, c-d above.

**Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office**

3. The minimum required fill of cement behind the 5-1/2 inch production casing is:  
☒ Cement should tie-back at least **200** feet into previous casing string. Operator shall provide method of verification.

**Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.**

### **C. PRESSURE CONTROL**

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API 53.
2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 5000 (5M) psi. **5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure**
3. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
  - b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.
  - c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
  - d. The results of the test shall be reported to the appropriate BLM office.
  - e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test**

**will be submitted to the appropriate BLM office.**

- f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

#### **D. DRILL STEM TEST**

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

#### **E. WASTE MATERIAL AND FLUIDS**

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

**TMAK 09192016**

### **VIII. PRODUCTION (POST DRILLING)**

#### **A. WELL STRUCTURES & FACILITIES**

##### **Placement of Production Facilities**

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

##### **Exclosure Netting (Open-top Tanks)**

Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

##### **Chemical and Fuel Secondary Containment and Exclosure Screening**

The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will

dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock enclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

#### **Open-Vent Exhaust Stack Enclosures**

The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended enclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

#### **Containment Structures**

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

#### **Painting Requirement**

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

### **B. PIPELINES**

#### **BURIED PIPELINE STIPULATIONS**

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the

reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, *et seq.* or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, *et seq.*) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of 36 inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be 30 feet:

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed 20 feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)
- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed 30 feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)
- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately   6   inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

☐ seed mixture 1

☐ seed mixture 3

☒ seed mixture 2

☐ seed mixture 4

☐ seed mixture 2/LPC

☐ Aplomado Falcon Mixture

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

17. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes associated roads, pipeline corridor and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches [that are not otherwise fenced, screened, or netted] to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

- a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
- b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

### **C. ELECTRIC LINES**

#### **STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES**

**A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.**

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to

any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.



7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:

- For reclamation remove poles, lines, transformer, etc. and dispose of properly.
- Fill in any holes from the poles removed.

## **IX. INTERIM RECLAMATION**

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

## **X. FINAL ABANDONMENT & RECLAMATION**

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM. Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

### **Seed Mixture 2, for Sandy Sites**

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)\* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed\* per acre:

<u>Species</u>	<u>lb/acre</u>
Sand dropseed ( <i>Sporobolus cryptandrus</i> )	1.0
Sand love grass ( <i>Eragrostis trichodes</i> )	1.0
Plains bristlegrass ( <i>Setaria macrostachya</i> )	2.0

\*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed

# Endurance Resources, LLC

HALLIBURTON

Sperry Drilling Services

**Project:** Lea County, NM (NAD 83)  
**Site:** Stratocaster 20 Fed  
**Well:** Stratocaster 20 Fed #8H  
**Wellbore:** Wellbore #1  
**Plan #2**  
**Rig:** TBD

## SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
9887.04	0.00	0.00	9887.04	0.00	0.00	0.00	0.00	0.00	Start Build
10787.04	90.00	167.40	10460.00	-559.15	125.02	10.00	167.40	572.96	End Build
14939.78	90.00	167.40	10460.00	-4611.83	1031.11	0.00	0.00	4725.69	TD

## WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Stratocaster Fed 20 #8H BHL	10460.00	-4611.83	1031.11	468000.86	803292.48	32° 17' 1.548 N	103° 29' 8.437 W

### Surface Location:

US State Plane 1983  
 New Mexico Eastern Zone  
 Elevation: GL 3485.4' + KB 25' @ 3510.40usft (TBD)  

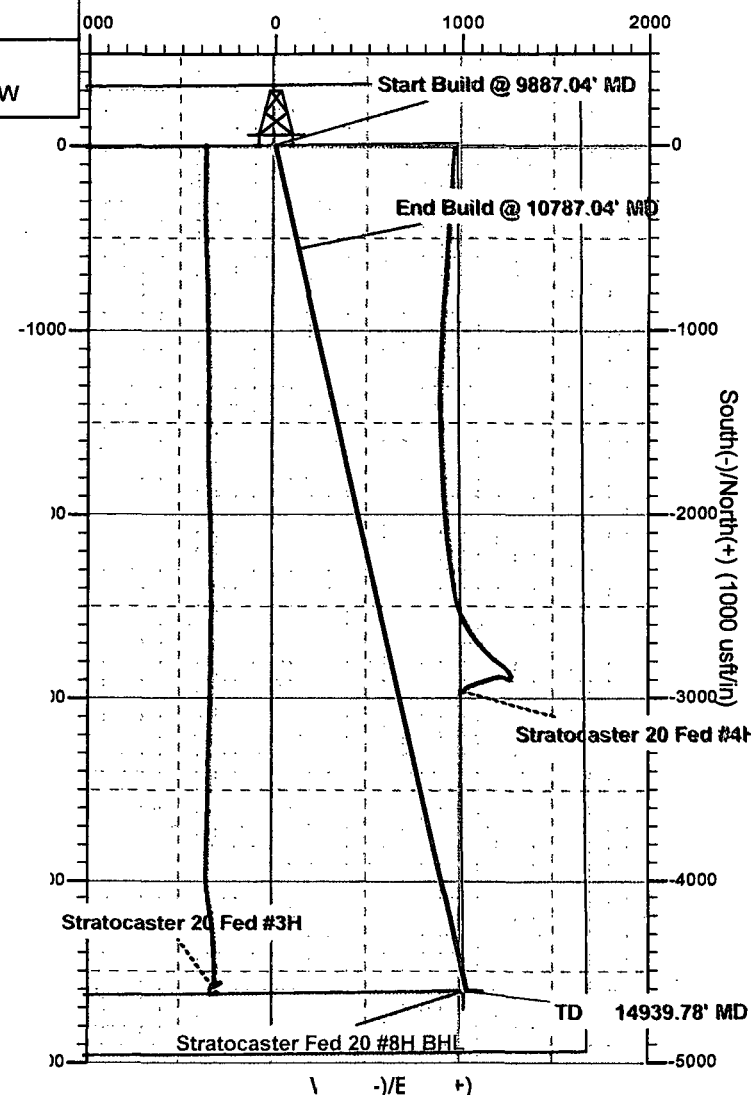
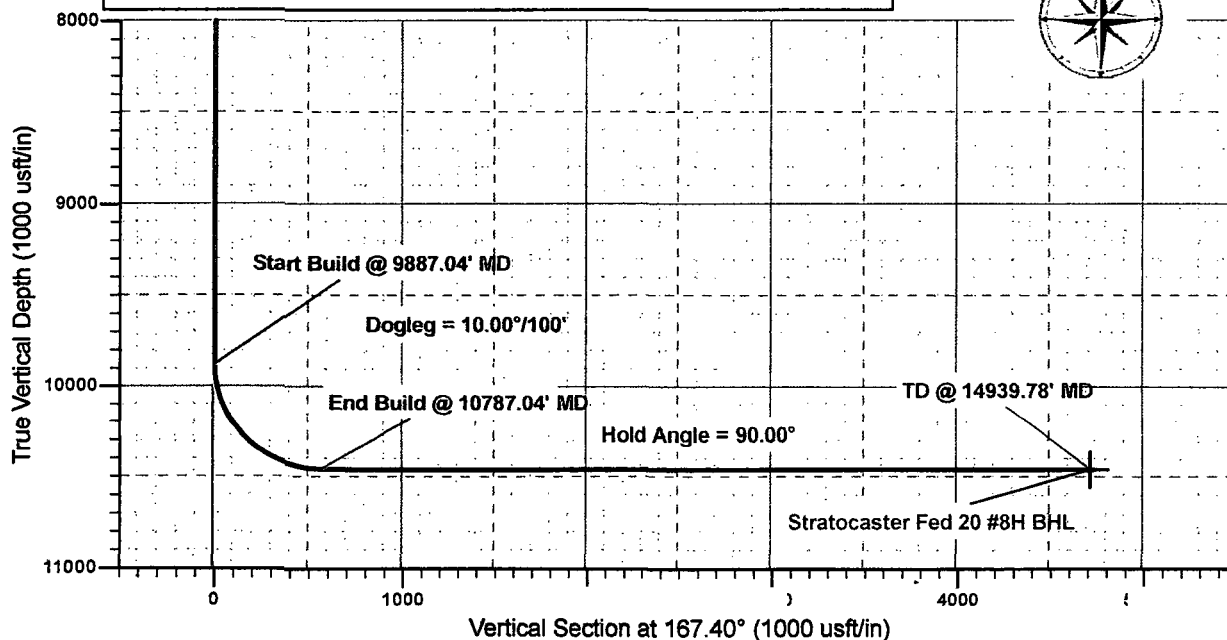
Northing	Easting	Latitude	Longitude
472612.69	802261.37	32° 17' 47.262 N	103° 29' 20.025 W

To convert a Magnetic Direction to a Grid Direction, Add 6.70°

Magnetic Model: BGGM2014 Date: 25-Apr-16  
 Azimuths to Grid North



ENDURANCE  
RESOURCES, LLC



# **Endurance Resources, LLC**

**Lea County, NM (NAD 83)**

**Stratocaster 20 Fed**

**Stratocaster 20 Fed #8H**

**Wellbore #1**

**Plan: Plan #2**

## **Sperry Drilling Services Proposal Report**

**25 April, 2016**

Well Coordinates: 472,612.69 N, 802,261.37 E (32° 17' 47.26" N, 103° 29' 20.02" W)

Ground Level: 3,485.40 usft

Local Coordinate Origin:

Centered on Well Stratocaster 20 Fed #8H

Viewing Datum:

GL 3485.4' + KB 25' @ 3510.40usft (TBD)

TVDs to System:

N

North Reference:

Grid

Unit System:

API - US Survey Feet

Version: 5000.1 Build: 81B

**HALLIBURTON**

**HALLIBURTON****Plan Report for Stratocaster 20 Fed #8H - Plan #2**

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)	Toolface Azimuth (°)
0.00	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	0.00
200.00	0.00	0.00	200.00	0.00	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	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	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	0.00
700.00	0.00	0.00	700.00	0.00	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	0.00
900.00	0.00	0.00	900.00	0.00	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	0.00
1,100.00	0.00	0.00	1,100.00	0.00	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	0.00
1,300.00	0.00	0.00	1,300.00	0.00	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	0.00
1,500.00	0.00	0.00	1,500.00	0.00	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	0.00
1,700.00	0.00	0.00	1,700.00	0.00	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	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**HALLIBURTON****Plan Report for Stratocaster 20 Fed #8H - Plan #2**

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)	Toolface Azimuth (°)
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,800.00	0.00	0.00	7,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,900.00	0.00	0.00	7,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8,000.00	0.00	0.00	8,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8,100.00	0.00	0.00	8,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8,200.00	0.00	0.00	8,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8,300.00	0.00	0.00	8,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8,400.00	0.00	0.00	8,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8,500.00	0.00	0.00	8,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8,600.00	0.00	0.00	8,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8,700.00	0.00	0.00	8,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8,800.00	0.00	0.00	8,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8,900.00	0.00	0.00	8,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000.00	0.00	0.00	9,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,100.00	0.00	0.00	9,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,200.00	0.00	0.00	9,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,300.00	0.00	0.00	9,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,400.00	0.00	0.00	9,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,500.00	0.00	0.00	9,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,600.00	0.00	0.00	9,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,700.00	0.00	0.00	9,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,800.00	0.00	0.00	9,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9,887.04	0.00	0.00	9,887.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build @ 9887.04' MD - Dogleg = 10.00°/100'</b>										
9,900.00	1.30	167.40	9,900.00	-0.14	0.03	0.15	10.00	10.00	0.00	167.40
9,950.00	6.30	167.40	9,949.87	-3.37	0.75	3.46	10.00	10.00	0.00	0.00
10,000.00	11.30	167.40	9,999.27	-10.83	2.42	11.10	10.00	10.00	0.00	0.00
10,050.00	16.30	167.40	10,047.81	-22.46	5.02	23.02	10.00	10.00	0.00	0.00
10,100.00	21.30	167.40	10,095.13	-38.18	8.54	39.12	10.00	10.00	0.00	0.00
10,150.00	26.30	167.40	10,140.87	-57.86	12.94	59.29	10.00	10.00	0.00	0.00
10,200.00	31.30	167.40	10,184.67	-81.36	18.19	83.37	10.00	10.00	0.00	0.00
10,250.00	36.30	167.40	10,226.21	-108.49	24.26	111.17	10.00	10.00	0.00	0.00
10,300.00	41.30	167.40	10,265.16	-139.05	31.09	142.49	10.00	10.00	0.00	0.00
10,350.00	46.30	167.40	10,301.24	-172.81	38.64	177.08	10.00	10.00	0.00	0.00
10,400.00	51.30	167.40	10,334.17	-209.51	46.84	214.69	10.00	10.00	0.00	0.00
10,450.00	56.30	167.40	10,363.69	-248.88	55.64	255.02	10.00	10.00	0.00	0.00
10,500.00	61.30	167.40	10,389.59	-290.60	64.97	297.77	10.00	10.00	0.00	0.00
10,550.00	66.30	167.40	10,411.66	-334.36	74.76	342.62	10.00	10.00	0.00	0.00
10,600.00	71.30	167.40	10,429.74	-379.84	84.92	389.22	10.00	10.00	0.00	0.00
10,650.00	76.30	167.40	10,443.69	-426.68	95.40	437.22	10.00	10.00	0.00	0.00
10,700.00	81.30	167.40	10,453.40	-474.53	106.10	486.25	10.00	10.00	0.00	0.00

**HALLIBURTON****Plan Report for Stratocaster 20 Fed #8H - Plan #2**

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Builld Rate (°/100usft)	Turn Rate (°/100usft)	Toolface Azimuth (°)
10,750.00	86.30	167.40	10,458.80	-523.03	116.94	535.94	10.00	10.00	0.00	0.00
10,787.04	90.00	167.40	10,460.00	-559.15	125.02	572.96	10.00	10.00	0.00	0.00
<b>End Build @ 10787.04' MD - Hold Angle = 90.00°</b>										
10,800.00	90.00	167.40	10,460.00	-571.80	127.84	585.92	0.00	0.00	0.00	0.00
10,900.00	90.00	167.40	10,460.00	-669.39	149.66	685.92	0.00	0.00	0.00	0.00
11,000.00	90.00	167.40	10,460.00	-766.98	171.48	785.92	0.00	0.00	0.00	0.00
11,100.00	90.00	167.40	10,460.00	-864.57	193.30	885.92	0.00	0.00	0.00	0.00
11,200.00	90.00	167.40	10,460.00	-962.16	215.12	985.92	0.00	0.00	0.00	0.00
11,300.00	90.00	167.40	10,460.00	-1,059.75	236.94	1,085.92	0.00	0.00	0.00	0.00
11,400.00	90.00	167.40	10,460.00	-1,157.34	258.76	1,185.92	0.00	0.00	0.00	0.00
11,500.00	90.00	167.40	10,460.00	-1,254.93	280.58	1,285.92	0.00	0.00	0.00	0.00
11,600.00	90.00	167.40	10,460.00	-1,352.52	302.40	1,385.92	0.00	0.00	0.00	0.00
11,700.00	90.00	167.40	10,460.00	-1,450.11	324.22	1,485.92	0.00	0.00	0.00	0.00
11,800.00	90.00	167.40	10,460.00	-1,547.70	346.03	1,585.92	0.00	0.00	0.00	0.00
11,900.00	90.00	167.40	10,460.00	-1,645.29	367.85	1,685.92	0.00	0.00	0.00	0.00
12,000.00	90.00	167.40	10,460.00	-1,742.89	389.67	1,785.92	0.00	0.00	0.00	0.00
12,100.00	90.00	167.40	10,460.00	-1,840.48	411.49	1,885.92	0.00	0.00	0.00	0.00
12,200.00	90.00	167.40	10,460.00	-1,938.07	433.31	1,985.92	0.00	0.00	0.00	0.00
12,300.00	90.00	167.40	10,460.00	-2,035.66	455.13	2,085.92	0.00	0.00	0.00	0.00
12,400.00	90.00	167.40	10,460.00	-2,133.25	476.95	2,185.92	0.00	0.00	0.00	0.00
12,500.00	90.00	167.40	10,460.00	-2,230.84	498.77	2,285.92	0.00	0.00	0.00	0.00
12,600.00	90.00	167.40	10,460.00	-2,328.43	520.59	2,385.92	0.00	0.00	0.00	0.00
12,700.00	90.00	167.40	10,460.00	-2,426.02	542.41	2,485.92	0.00	0.00	0.00	0.00
12,800.00	90.00	167.40	10,460.00	-2,523.61	564.23	2,585.92	0.00	0.00	0.00	0.00
12,900.00	90.00	167.40	10,460.00	-2,621.20	586.05	2,685.92	0.00	0.00	0.00	0.00
13,000.00	90.00	167.40	10,460.00	-2,718.79	607.87	2,785.92	0.00	0.00	0.00	0.00
13,100.00	90.00	167.40	10,460.00	-2,816.38	629.68	2,885.92	0.00	0.00	0.00	0.00
13,200.00	90.00	167.40	10,460.00	-2,913.97	651.50	2,985.92	0.00	0.00	0.00	0.00
13,300.00	90.00	167.40	10,460.00	-3,011.56	673.32	3,085.92	0.00	0.00	0.00	0.00
13,400.00	90.00	167.40	10,460.00	-3,109.15	695.14	3,185.92	0.00	0.00	0.00	0.00
13,500.00	90.00	167.40	10,460.00	-3,206.74	716.96	3,285.92	0.00	0.00	0.00	0.00
13,600.00	90.00	167.40	10,460.00	-3,304.33	738.78	3,385.92	0.00	0.00	0.00	0.00
13,700.00	90.00	167.40	10,460.00	-3,401.93	760.60	3,485.92	0.00	0.00	0.00	0.00
13,800.00	90.00	167.40	10,460.00	-3,499.52	782.42	3,585.92	0.00	0.00	0.00	0.00
13,900.00	90.00	167.40	10,460.00	-3,597.11	804.24	3,685.92	0.00	0.00	0.00	0.00
14,000.00	90.00	167.40	10,460.00	-3,694.70	826.06	3,785.92	0.00	0.00	0.00	0.00
14,100.00	90.00	167.40	10,460.00	-3,792.29	847.88	3,885.92	0.00	0.00	0.00	0.00
14,200.00	90.00	167.40	10,460.00	-3,889.88	869.70	3,985.92	0.00	0.00	0.00	0.00
14,300.00	90.00	167.40	10,460.00	-3,987.47	891.52	4,085.92	0.00	0.00	0.00	0.00
14,400.00	90.00	167.40	10,460.00	-4,085.06	913.33	4,185.92	0.00	0.00	0.00	0.00
14,500.00	90.00	167.40	10,460.00	-4,182.65	935.15	4,285.92	0.00	0.00	0.00	0.00
14,600.00	90.00	167.40	10,460.00	-4,280.24	956.97	4,385.92	0.00	0.00	0.00	0.00
14,700.00	90.00	167.40	10,460.00	-4,377.83	978.79	4,485.92	0.00	0.00	0.00	0.00
14,800.00	90.00	167.40	10,460.00	-4,475.42	1,000.61	4,585.92	0.00	0.00	0.00	0.00
14,900.00	90.00	167.40	10,460.00	-4,573.01	1,022.43	4,685.92	0.00	0.00	0.00	0.00
14,939.78	90.00	167.40	10,460.00	-4,611.83	1,031.11	4,725.69	0.00	0.00	0.00	0.00
<b>TD @ 14939.78' MD - Stratocaster Fed 20 #8H BHL</b>										

**Plan Annotations**

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,887.04	9,887.04	0.00	0.00	Start Build @ 9887.04' MD
9,887.04	9,887.04	0.00	0.00	Dogleg = 10.00°/100'
10,787.04	10,460.00	-559.15	125.01	End Build @ 10787.04' MD
10,787.04	10,460.00	-559.15	125.02	Hold Angle = 90.00°
14,939.78	10,460.00	-4,611.83	1,031.11	TD @ 14939.78' MD

**HALLIBURTON****Plan Report for Stratocaster 20 Fed #8H - Plan #2****Vertical Section Information**

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (usft)	Origin +E/-W (usft)	Start TVD (usft)
TD	No Target (Freehand)	167.40	Slot	0.00	0.00	0.00

**Survey tool program**

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	14,939.78	Plan #2	MWD+SC

***Targets associated with this wellbore***

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
Stratocaster Fed 20 #8H BHL	10,460.00	-4,611.83	1,031.11	Point



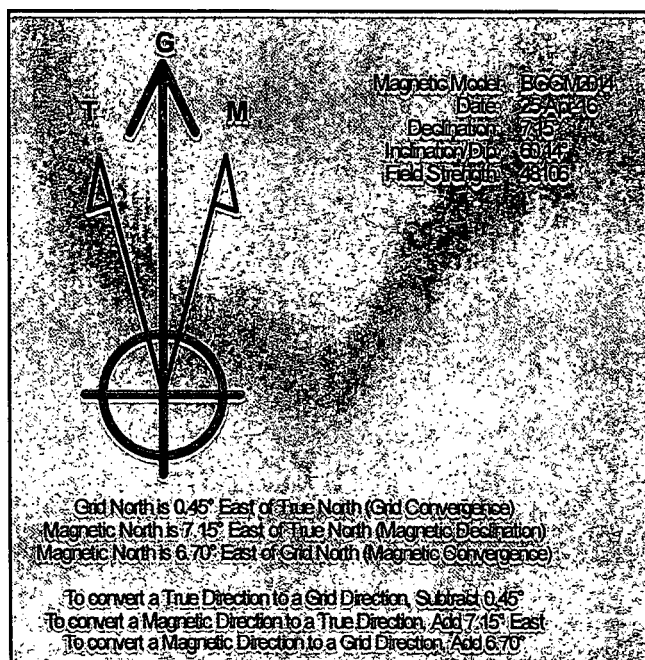
## North Reference Sheet for Stratocaster 20 Fed - Stratocaster 20 Fed #8H - Wellbore #1

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.  
Vertical Depths are relative to GL 3485.4' + KB 25' @ 3510.40usft (TBD). Northing and Easting are relative to Stratocaster 20 Fed #8H  
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: 0.99998706

Grid Coordinates of Well: 472,612.69 usft N, 802,261.37 usft E  
Geographical Coordinates of Well: 32° 17' 47.26" N, 103° 29' 20.02" W  
Grid Convergence at Surface is: 0.45°

Based upon Minimum Curvature type calculations, at a Measured Depth of 14,939.78usft  
the Bottom Hole Displacement is 4,725.69usft in the Direction of 167.40° (Grid).  
Magnetic Convergence at surface is: -6.70° (25 April 2016, , BGGM2014)



# **Endurance Resources, LLC**

**Lea County, NM (NAD 83)**

**Stratocaster 20 Fed**

**Stratocaster 20 Fed #8H**

**Wellbore #1**

**Plan #2**

## **Sperry Drilling Services Ellipse Separation Anticollision Report**

**25 April, 2016**

**Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)**

**Reference Design: Stratocaster 20 Fed - Stratocaster 20 Fed #8H - Wellbore #1 - Plan #2**

**Well Coordinates: 472,612.69 N, 802,261.37 E (32° 17' 47.26" N, 103° 29' 20.02" W)**

**Datum Height: GL 3485.4' + KB 25' @ 3510.40usft (TBD)**

**Scan Range: 0.00 to 14,939.78 usft. Measured Depth.**

**Scan Radius is 1,896.39 usft . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited**

**Version: 5000.1 Build: 81B**

**HALLIBURTON**

## Anticollision Report for Stratocaster 20 Fed #8H - Plan #2

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Offset Design: Stratocaster 20 Fed - Stratocaster 20 Fed #4H - Wellbore #1 - Surveys

Scan Range: 0.00 to 14,939.78 usft. Measured Depth.

Scan Radius is 1,896.39 usft. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
9,000.00	9,000.00	0.00	0.00	20.09	13,218.68	10,530.13	-109.33	967.20	48.46	1,813.48	1,764.73	96.45	37.193
9,100.00	9,100.00	0.00	0.00	20.31	13,221.36	10,530.20	-106.66	967.39	48.49	1,729.94	1,680.06	96.29	34.678
9,200.00	9,200.00	0.00	0.00	20.54	13,224.04	10,530.27	-103.99	967.58	48.52	1,648.23	1,597.11	96.13	32.248
9,300.00	9,300.00	0.00	0.00	20.76	13,226.73	10,530.35	-101.30	967.76	48.55	1,568.63	1,516.18	95.98	29.911
9,400.00	9,400.00	0.00	0.00	20.99	13,230.11	10,530.44	-97.94	968.00	48.59	1,491.48	1,437.58	95.78	27.670
9,500.00	9,500.00	0.00	0.00	21.21	13,233.44	10,530.53	-94.61	968.23	48.63	1,417.18	1,361.70	95.58	25.544
9,600.00	9,600.00	0.00	0.00	21.44	13,236.66	10,530.61	-91.40	968.45	48.67	1,346.21	1,289.04	95.39	23.545
9,700.00	9,700.00	0.00	0.00	21.66	13,239.77	10,530.69	-88.30	968.67	48.71	1,279.13	1,220.14	95.21	21.686
9,800.00	9,800.00	0.00	0.00	21.89	13,242.78	10,530.77	-85.31	968.87	48.75	1,216.56	1,155.68	95.03	19.982
9,900.00	9,900.00	-0.14	0.03	22.11	13,245.52	10,530.84	-82.57	969.06	48.78	1,159.21	1,096.38	-73.34	18.448
10,000.00	9,999.27	-10.83	2.42	22.28	13,236.38	10,530.61	-91.68	968.43	48.67	1,105.46	1,040.89	-78.99	17.120
10,100.00	10,095.13	-38.18	8.54	22.44	13,211.17	10,529.92	-116.83	966.68	48.37	1,055.12	989.14	-83.27	15.992
10,200.00	10,184.67	-81.36	18.19	22.61	13,171.51	10,528.85	-156.38	963.93	47.92	1,009.21	942.20	-86.21	15.061
10,300.00	10,265.16	-139.05	31.09	22.78	13,117.52	10,527.45	-210.22	960.18	47.30	968.02	900.42	-87.98	14.318
10,400.00	10,334.17	-209.51	46.84	23.01	13,049.85	10,526.55	-277.70	955.31	46.53	931.11	863.33	-88.99	13.737
10,500.00	10,389.59	-290.60	64.97	23.31	12,980.47	10,526.91	-346.91	950.39	45.70	897.77	830.03	-90.09	13.253
10,600.00	10,429.74	-379.84	84.92	23.69	12,896.94	10,528.66	-430.26	945.26	44.67	867.47	800.14	-91.22	12.884
10,700.00	10,453.40	-474.53	106.10	24.17	12,799.46	10,529.71	-527.55	939.24	43.46	838.31	771.70	-92.86	12.584
10,800.00	10,460.00	-571.80	127.84	24.72	12,704.73	10,529.95	-622.08	933.10	42.30	809.85	743.87	-95.16	12.274
10,900.00	10,460.00	-669.39	149.66	25.37	12,609.34	10,529.05	-717.29	927.43	41.19	782.29	716.85	-95.27	11.954
11,000.00	10,460.00	-766.98	171.48	26.11	12,520.27	10,528.13	-806.20	922.13	40.19	754.76	689.59	-95.38	11.582
11,100.00	10,460.00	-864.57	193.30	26.93	12,432.81	10,529.31	-893.56	918.27	39.19	728.86	663.86	-95.65	11.214
11,200.00	10,460.00	-962.16	215.12	27.82	12,329.78	10,529.84	-996.49	913.79	38.06	702.99	638.40	-95.91	10.884
11,300.00	10,460.00	-1,059.75	236.94	28.79	12,236.54	10,529.63	-1,089.61	908.95	37.06	676.27	611.77	-96.12	10.485
11,400.00	10,460.00	-1,157.34	258.76	29.82	12,148.87	10,530.25	-1,177.23	905.96	36.13	651.31	586.70	-96.39	10.081
11,500.00	10,460.00	-1,254.93	280.58	30.90	12,055.78	10,530.36	-1,270.26	902.90	35.15	626.47	561.81	-96.64	9.688
11,600.00	10,460.00	-1,352.52	302.40	32.04	11,976.89	10,530.74	-1,349.14	902.16	34.34	603.93	538.80	-96.88	9.272
11,700.00	10,460.00	-1,450.11	324.22	33.22	11,891.75	10,531.65	-1,434.26	903.51	33.49	583.92	518.39	-97.18	8.910
11,800.00	10,460.00	-1,547.70	346.03	34.44	11,788.77	10,532.35	-1,537.22	905.57	32.45	564.29	498.73	-97.52	8.607
11,900.00	10,460.00	-1,645.29	367.85	35.70	11,706.40	10,532.03	-1,619.54	908.30	31.59	545.83	479.73	-97.70	8.257
12,000.00	10,460.00	-1,742.89	389.67	36.99	11,608.50	10,530.76	-1,717.32	913.19	30.60	528.89	462.54	-97.80	7.971

## Anticollision Report for Stratocaster 20 Fed #8H - Plan #2

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Offset Design: Stratocaster 20 Fed - Stratocaster 20 Fed #4H - Wellbore #1 - Surveys

Scan Range: 0.00 to 14,939.78 usft. Measured Depth.

Scan Radius is 1,896.39 usft. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
12,100.00	10,460.00	-1,840.48	411.49	38.30	11,510.15	10,528.96	-1,815.51	918.25	29.65	512.04	445.36	-97.85	7.679
12,200.00	10,460.00	-1,938.07	433.31	39.65	11,412.56	10,526.55	-1,912.94	923.47	28.77	495.30	428.19	-97.83	7.381
12,300.00	10,460.00	-2,035.66	455.13	41.02	11,315.80	10,523.38	-2,009.48	928.98	28.00	478.79	411.09	-97.71	7.072
12,400.00	10,460.00	-2,133.25	476.95	42.41	11,232.85	10,521.46	-2,092.17	935.23	27.43	464.20	395.50	-97.67	6.757
12,500.00	10,460.00	-2,230.84	498.77	43.82	11,149.87	10,521.15	-2,174.67	944.16	26.85	453.06	383.37	-97.79	6.501
12,600.00	10,460.00	-2,328.43	520.59	45.25	11,053.40	10,521.25	-2,270.29	956.93	26.20	444.44	373.99	-97.95	6.308
12,700.00	10,460.00	-2,426.02	542.41	46.69	10,959.86	10,520.23	-2,362.92	969.90	25.63	436.30	364.94	-97.96	6.114
12,800.00	10,460.00	-2,523.61	564.23	48.15	10,873.00	10,518.36	-2,448.56	984.24	25.16	430.64	358.20	-97.80	5.945
12,841.61	10,460.00	-2,564.22	573.31	48.77	10,849.77	10,517.65	-2,471.31	988.87	25.05	429.71	356.67	-97.71	5.883
12,900.00	10,460.00	-2,621.20	586.05	49.63	10,818.51	10,516.41	-2,501.51	996.81	24.89	431.55	357.79	-97.53	5.851
13,000.00	10,460.00	-2,718.79	607.87	51.11	10,763.42	10,512.07	-2,553.14	1,015.42	24.61	443.00	368.33	-96.84	5.932
13,100.00	10,460.00	-2,816.38	629.68	52.61	10,705.89	10,503.15	-2,604.30	1,040.09	24.33	463.98	388.70	-95.52	6.164
13,200.00	10,460.00	-2,913.97	651.50	54.11	10,650.00	10,489.05	-2,650.64	1,067.88	24.08	493.52	417.97	-93.58	6.532
13,300.00	10,460.00	-3,011.56	673.32	55.63	10,590.33	10,467.49	-2,696.06	1,099.94	23.87	530.66	455.01	-90.88	7.014
13,400.00	10,460.00	-3,109.15	695.14	57.15	10,546.01	10,447.78	-2,726.99	1,124.79	23.74	575.15	500.08	-88.61	7.661
13,500.00	10,460.00	-3,206.74	716.96	58.68	10,508.45	10,429.11	-2,750.82	1,147.01	23.65	627.51	553.40	-86.59	8.468
13,600.00	10,460.00	-3,304.33	738.78	60.22	10,475.02	10,410.49	-2,769.88	1,167.16	23.59	686.73	613.81	-84.71	9.418
13,700.00	10,460.00	-3,401.93	760.60	61.77	10,445.81	10,392.16	-2,784.61	1,184.49	23.55	751.91	680.31	-82.95	10.502
13,800.00	10,460.00	-3,499.52	782.42	63.32	10,417.04	10,372.53	-2,797.50	1,201.11	23.52	822.06	751.73	-81.15	11.688
13,900.00	10,460.00	-3,597.11	804.24	64.88	10,386.25	10,349.98	-2,809.95	1,217.95	23.50	896.03	826.83	-79.18	12.947
14,000.00	10,460.00	-3,694.70	826.06	66.44	10,324.39	10,300.13	-2,832.05	1,247.02	23.47	973.10	904.37	-75.06	14.159
14,100.00	10,460.00	-3,792.29	847.88	68.01	10,285.03	10,265.86	-2,845.40	1,260.99	23.46	1,051.17	983.42	-72.34	15.517
14,200.00	10,460.00	-3,889.88	869.70	69.58	10,260.99	10,243.94	-2,852.66	1,267.69	23.45	1,131.77	1,065.16	-70.63	16.991
14,300.00	10,460.00	-3,987.47	891.52	71.16	10,233.02	10,217.84	-2,860.47	1,273.99	23.45	1,214.52	1,148.92	-68.64	18.516
14,400.00	10,460.00	-4,085.06	913.33	72.74	10,204.62	10,190.89	-2,867.93	1,278.91	23.44	1,299.02	1,234.37	-66.62	20.091
14,500.00	10,460.00	-4,182.65	935.15	74.33	10,187.92	10,174.86	-2,872.07	1,281.10	23.44	1,385.13	1,321.38	-65.43	21.726
14,600.00	10,460.00	-4,280.24	956.97	75.92	10,172.00	10,159.45	-2,875.76	1,282.65	23.44	1,472.73	1,409.80	-64.29	23.401
14,700.00	10,460.00	-4,377.83	978.79	77.51	10,161.63	10,149.36	-2,878.04	1,283.40	23.44	1,561.62	1,499.43	-63.55	25.110
14,800.00	10,460.00	-4,475.42	1,000.61	79.11	10,150.68	10,138.67	-2,880.34	1,284.02	23.43	1,651.62	1,590.09	-62.78	26.843
14,900.00	10,460.00	-4,573.01	1,022.43	80.71	10,140.00	10,128.22	-2,882.49	1,284.47	23.43	1,742.58	1,681.65	-62.02	28.597
14,939.78	10,460.00	-4,611.83	1,031.11	81.35	10,140.00	10,128.22	-2,882.49	1,284.47	23.43	1,779.01	1,718.30	-62.02	29.301

## Anticollision Report for Stratocaster 20 Fed #8H - Plan #2

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Offset Design: Broadcaster 29 Federal - Broadcaster 29 Federal 3H - Wellbore #1 - Surveys

Scan Range: 0.00 to 14,939.78 usft. Measured Depth.

Scan Radius is 1,896.39 usft . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
14,100.00	10,460.00	-3,792.29	847.88	68.01	10,426.80	10,385.77	-5,316.28	-259.54	18.52	1,885.32	1,813.25	86.99	26.162
14,200.00	10,460.00	-3,889.88	869.70	69.58	10,428.40	10,387.37	-5,316.32	-259.59	18.52	1,820.79	1,746.04	87.06	24.356
14,300.00	10,460.00	-3,987.47	891.52	71.16	10,430.03	10,388.99	-5,316.36	-259.64	18.53	1,759.59	1,682.00	87.12	22.679
14,400.00	10,460.00	-4,085.06	913.33	72.74	10,431.68	10,390.64	-5,316.40	-259.69	18.53	1,702.06	1,621.53	87.19	21.135
14,500.00	10,460.00	-4,182.65	935.15	74.33	10,433.36	10,392.32	-5,316.45	-259.75	18.53	1,648.59	1,565.02	87.26	19.727
14,600.00	10,460.00	-4,280.24	956.97	75.92	10,435.07	10,394.03	-5,316.49	-259.80	18.54	1,599.60	1,512.93	87.33	18.457
14,700.00	10,460.00	-4,377.83	978.79	77.51	10,436.80	10,395.76	-5,316.53	-259.86	18.54	1,555.49	1,465.71	87.40	17.325
14,800.00	10,460.00	-4,475.42	1,000.61	79.11	10,438.57	10,397.52	-5,316.58	-259.91	18.54	1,516.70	1,423.83	87.47	16.332
14,900.00	10,460.00	-4,573.01	1,022.43	80.71	10,440.36	10,399.32	-5,316.63	-259.97	18.55	1,483.65	1,387.79	87.54	15.478
14,939.78	10,460.00	-4,611.83	1,031.11	81.35	10,441.09	10,400.04	-5,316.65	-259.99	18.55	1,472.18	1,375.18	87.57	15.176

## Anticollision Report for Stratocaster 20 Fed #8H - Plan #2

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Offset Design: Stratocaster 20 Fed - Stratocaster 20 Fed #3H - Wellbore #1 - Surveys

Scan Range: 0.00 to 14,939.78 usft. Measured Depth.

Scan Radius is 1,896.39 usft. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
8,700.00	8,700.00	0.00	0.00	19.41	14,820.51	10,501.80	-28.30	-357.22	70.20	1,837.09	1,787.18	-94.53	36.808
8,800.00	8,800.00	0.00	0.00	19.64	14,822.71	10,501.85	-26.10	-357.15	70.23	1,739.12	1,688.72	-94.18	34.504
8,900.00	8,900.00	0.00	0.00	19.86	14,824.91	10,501.90	-23.90	-357.08	70.27	1,641.39	1,590.45	-93.83	32.221
9,000.00	9,000.00	0.00	0.00	20.09	14,827.11	10,501.95	-21.71	-357.01	70.30	1,543.95	1,492.41	-93.48	29.958
9,100.00	9,100.00	0.00	0.00	20.31	14,829.31	10,502.00	-19.51	-356.94	70.33	1,446.85	1,394.65	-93.13	27.717
9,200.00	9,200.00	0.00	0.00	20.54	14,831.51	10,502.04	-17.31	-356.87	70.36	1,350.18	1,297.22	-92.78	25.497
9,300.00	9,300.00	0.00	0.00	20.76	14,833.70	10,502.09	-15.12	-356.80	70.39	1,254.02	1,200.20	-92.43	23.300
9,400.00	9,400.00	0.00	0.00	20.99	14,835.90	10,502.14	-12.92	-356.73	70.42	1,158.51	1,103.68	-92.07	21.129
9,500.00	9,500.00	0.00	0.00	21.21	14,838.10	10,502.19	-10.72	-356.66	70.46	1,063.82	1,007.79	-91.72	18.987
9,600.00	9,600.00	0.00	0.00	21.44	14,840.30	10,502.24	-8.52	-356.59	70.49	970.19	912.71	-91.37	16.879
9,700.00	9,700.00	0.00	0.00	21.66	14,842.50	10,502.29	-6.33	-356.52	70.52	877.96	818.69	-91.02	14.814
9,800.00	9,800.00	0.00	0.00	21.89	14,844.70	10,502.33	-4.13	-356.45	70.55	787.62	726.12	-90.66	12.805
9,900.00	9,900.00	-0.14	0.03	22.11	14,846.76	10,502.38	-2.07	-356.39	70.58	699.93	635.56	104.41	10.874
10,000.00	9,999.27	-10.83	2.42	22.28	14,838.34	10,502.19	-10.49	-356.65	70.46	617.96	549.90	116.63	9.080
10,100.00	10,095.13	-38.18	8.54	22.44	14,813.31	10,501.64	-35.50	-357.45	70.10	547.00	474.34	122.19	7.528
10,200.00	10,184.67	-81.36	18.19	22.61	14,772.73	10,500.75	-76.04	-358.74	69.52	491.95	414.09	123.08	6.318
10,300.00	10,265.16	-139.05	31.09	22.78	14,713.40	10,499.58	-135.33	-360.43	68.68	456.35	373.62	120.17	5.516
10,400.00	10,334.17	-209.51	46.84	23.01	14,638.02	10,498.73	-210.71	-360.93	67.61	439.73	353.58	114.72	5.104
10,448.29	10,362.74	-247.49	55.33	23.15	14,601.45	10,498.37	-247.28	-361.02	67.09	437.88	350.67	111.90	5.021
10,500.00	10,389.59	-290.60	64.97	23.31	14,559.95	10,497.89	-288.78	-361.26	66.51	439.78	351.87	108.68	5.002
10,600.00	10,429.74	-379.84	84.92	23.69	14,465.87	10,497.58	-382.86	-361.44	65.21	451.50	363.32	102.23	5.120
10,700.00	10,453.40	-474.53	106.10	24.17	14,359.15	10,497.49	-489.54	-359.29	63.74	467.71	380.13	97.07	5.340
10,800.00	10,460.00	-571.80	127.84	24.72	14,257.26	10,498.83	-591.35	-355.33	62.29	485.13	398.39	94.67	5.593
10,900.00	10,460.00	-669.39	149.66	25.37	14,160.39	10,500.26	-688.13	-351.61	60.87	503.24	417.29	94.67	5.855
11,000.00	10,460.00	-766.98	171.48	26.11	14,059.59	10,500.51	-788.84	-347.27	59.42	520.79	435.57	94.53	6.111
11,100.00	10,460.00	-864.57	193.30	26.93	13,968.50	10,500.07	-879.88	-344.22	58.10	539.23	454.52	94.34	6.365
11,200.00	10,460.00	-962.16	215.12	27.82	13,872.44	10,498.79	-975.90	-341.66	56.78	558.30	474.02	94.06	6.624
11,300.00	10,460.00	-1,059.75	236.94	28.79	13,779.37	10,499.21	-1,068.94	-339.87	55.55	578.21	494.23	93.97	6.885
11,400.00	10,460.00	-1,157.34	258.76	29.82	13,682.32	10,501.25	-1,165.96	-338.09	54.19	598.33	514.73	94.04	7.157
11,500.00	10,460.00	-1,254.93	280.58	30.90	13,592.87	10,502.49	-1,255.40	-337.38	52.88	619.42	536.11	94.03	7.435
11,600.00	10,460.00	-1,352.52	302.40	32.04	13,498.17	10,502.41	-1,350.09	-337.60	51.53	641.41	558.36	93.89	7.724
11,700.00	10,460.00	-1,450.11	324.22	33.22	13,398.60	10,501.49	-1,449.65	-337.83	50.19	663.35	580.49	93.67	8.005

## Anticollision Report for Stratocaster 20 Fed #8H - Plan #2

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Offset Design: Stratocaster 20 Fed - Stratocaster 20 Fed #3H - Wellbore #1 - Surveys

Scan Range: 0.00 to 14,939.78 usft. Measured Depth.

Scan Radius is 1,896.39 usft. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
11,800.00	10,460.00	-1,547.70	346.03	34.44	13,301.83	10,502.35	-1,546.42	-337.93	48.87	685.28	602.56	93.63	8.284
11,900.00	10,460.00	-1,645.29	367.85	35.70	13,201.56	10,503.26	-1,646.69	-337.96	47.53	707.14	624.52	93.59	8.559
12,000.00	10,460.00	-1,742.89	389.67	36.99	13,094.54	10,506.68	-1,753.64	-336.92	46.14	728.17	645.65	93.75	8.824
12,100.00	10,460.00	-1,840.48	411.49	38.30	12,993.95	10,512.01	-1,854.06	-334.56	44.78	747.99	665.55	94.07	9.073
12,200.00	10,460.00	-1,938.07	433.31	39.65	12,897.48	10,516.76	-1,950.39	-332.82	43.50	768.33	685.89	94.33	9.320
12,300.00	10,460.00	-2,035.66	455.13	41.02	12,795.79	10,523.80	-2,051.81	-330.29	42.10	788.17	705.81	94.74	9.569
12,400.00	10,460.00	-2,133.25	476.95	42.41	12,697.15	10,528.96	-2,150.28	-327.82	40.71	807.90	725.59	94.99	9.816
12,500.00	10,460.00	-2,230.84	498.77	43.82	12,601.89	10,531.87	-2,245.46	-325.62	39.37	827.65	745.33	95.08	10.054
12,600.00	10,460.00	-2,328.43	520.59	45.25	12,509.60	10,532.05	-2,337.74	-324.28	38.13	847.98	765.54	94.98	10.286
12,700.00	10,460.00	-2,426.02	542.41	46.69	12,416.45	10,530.88	-2,430.88	-323.63	36.94	868.95	786.32	94.79	10.516
12,800.00	10,460.00	-2,523.61	564.23	48.15	12,323.45	10,532.74	-2,523.86	-323.18	35.72	890.38	807.59	94.80	10.755
12,900.00	10,460.00	-2,621.20	586.05	49.63	12,232.23	10,533.84	-2,615.08	-323.37	34.54	912.43	829.45	94.76	10.996
13,000.00	10,460.00	-2,718.79	607.87	51.11	12,142.46	10,533.87	-2,704.83	-324.32	33.43	935.21	851.97	94.66	11.235
13,100.00	10,460.00	-2,816.38	629.68	52.61	12,050.54	10,535.55	-2,796.73	-325.93	32.28	958.80	875.32	94.65	11.485
13,200.00	10,460.00	-2,913.97	651.50	54.11	11,951.90	10,536.44	-2,895.34	-327.84	31.01	982.49	898.81	94.59	11.741
13,300.00	10,460.00	-3,011.56	673.32	55.63	11,853.96	10,535.69	-2,993.26	-329.66	29.80	1,006.01	922.04	94.44	11.981
13,400.00	10,460.00	-3,109.15	695.14	57.15	11,763.60	10,533.66	-3,083.58	-331.63	28.80	1,029.73	945.36	94.23	12.205
13,500.00	10,460.00	-3,206.74	716.96	58.68	11,670.28	10,533.02	-3,176.85	-334.48	27.80	1,054.40	969.58	94.10	12.432
13,600.00	10,460.00	-3,304.33	738.78	60.22	11,557.43	10,535.08	-3,289.65	-336.62	26.52	1,078.12	992.91	94.10	12.652
13,700.00	10,460.00	-3,401.93	760.60	61.77	11,461.52	10,535.49	-3,385.56	-337.73	25.48	1,101.04	1,015.39	94.04	12.854
13,800.00	10,460.00	-3,499.52	782.42	63.32	11,355.02	10,535.23	-3,492.05	-339.30	24.40	1,124.26	1,038.06	93.94	13.043
13,900.00	10,460.00	-3,597.11	804.24	64.88	11,262.97	10,535.88	-3,584.08	-339.76	23.46	1,146.58	1,059.88	93.90	13.224
14,000.00	10,460.00	-3,694.70	826.06	66.44	11,176.35	10,532.03	-3,670.59	-341.47	22.59	1,169.99	1,082.75	93.63	13.412
14,100.00	10,460.00	-3,792.29	847.88	68.01	11,082.11	10,521.29	-3,764.17	-343.72	21.72	1,193.50	1,105.63	93.03	13.582
14,200.00	10,460.00	-3,889.88	869.70	69.58	10,982.21	10,506.98	-3,862.99	-346.88	20.91	1,217.78	1,129.14	92.28	13.738
14,300.00	10,460.00	-3,987.47	891.52	71.16	10,887.91	10,463.95	-4,152.91	-333.48	18.98	1,236.12	1,146.24	90.18	13.752
14,400.00	10,460.00	-4,085.06	913.33	72.74	10,597.00	10,429.12	-4,235.93	-321.76	18.53	1,244.65	1,153.74	88.57	13.691
14,500.00	10,460.00	-4,182.65	935.15	74.33	10,550.44	10,406.15	-4,276.13	-317.01	18.34	1,256.81	1,164.92	87.52	13.678
14,600.00	10,460.00	-4,280.24	956.97	75.92	10,489.53	10,372.33	-4,326.55	-312.26	18.14	1,273.10	1,180.36	85.98	13.727
14,700.00	10,460.00	-4,377.83	978.79	77.51	10,452.53	10,349.72	-4,355.75	-310.25	18.04	1,293.94	1,200.59	84.97	13.861
14,800.00	10,460.00	-4,475.42	1,000.61	79.11	10,389.94	10,308.22	-4,402.53	-308.02	17.90	1,319.42	1,225.53	83.14	14.053

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**Anticollision Report for Stratocaster 20 Fed #8H - Plan #2**

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Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Offset Design: Stratocaster 20 Fed - Stratocaster 20 Fed #3H - Wellbore #1 - Surveys

Scan Range: 0.00 to 14,939.78 usft. Measured Depth.

Scan Radius is 1,896.39 usft. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
14,900.00	10,460.00	-4,573.01	1,022.43	80.71	10,333.32	10,267.09	-4,441.33	-305.44	17.80	1,348.26	1,254.06	81.34	14.313
14,939.78	10,460.00	-4,611.83	1,031.11	81.35	10,319.51	10,256.52	-4,450.19	-304.84	17.78	1,361.00	1,266.78	80.89	14.446



## Anticollision Report for Stratocaster 20 Fed #8H - Plan #2

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Offset Design: Stratocaster 20 Fed - Stratocaster 20 Fed #2H - Wellbore #1 - Surveys

Scan Range: 0.00 to 14,939.78 usft. Measured Depth.

Scan Radius is 1,896.39 usft. Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Uncertainty Data for Reference Well					Uncertainty Data for Comparison Well					Separation (Ref. > Comp.)			
Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Measured Depth (usft)	Vertical Depth (usft)	Ellipse Centre +N/-S (usft)	Ellipse Centre +E/-W (usft)	Ellipse Major Axis/2	Between Centres (usft)	Between Ellipsoids (usft)	Relative Highside Bearing	Clearance Factor
9,500.00	9,500.00	0.00	0.00	21.21	14,806.00	10,477.98	-55.49	-1,621.61	69.80	1,894.51	1,812.38	-91.96	23.069
9,600.00	9,600.00	0.00	0.00	21.44	14,806.00	10,477.98	-55.49	-1,621.61	69.80	1,844.87	1,761.12	-91.96	22.028
9,700.00	9,700.00	0.00	0.00	21.66	14,806.00	10,477.98	-55.49	-1,621.61	69.80	1,799.43	1,714.10	-91.96	21.086
9,800.00	9,800.00	0.00	0.00	21.89	14,806.00	10,477.98	-55.49	-1,621.61	69.80	1,758.51	1,671.65	-91.96	20.245
9,900.00	9,900.00	-0.14	0.03	22.11	14,806.00	10,477.98	-55.49	-1,621.61	69.80	1,722.46	1,634.17	101.10	19.511
10,000.00	9,999.27	-10.83	2.42	22.28	14,806.00	10,477.98	-55.49	-1,621.61	69.80	1,693.71	1,604.18	104.03	18.918
10,100.00	10,095.13	-38.18	8.54	22.44	14,792.07	10,478.11	-69.41	-1,621.32	69.59	1,674.54	1,584.16	105.47	18.528
10,200.00	10,184.67	-81.36	18.19	22.61	14,747.78	10,478.51	-113.69	-1,620.37	68.94	1,665.02	1,574.45	105.03	18.384
10,257.48	10,232.20	-112.85	25.23	22.70	14,715.44	10,478.65	-146.03	-1,619.70	68.46	1,663.62	1,573.14	104.24	18.385
10,300.00	10,265.16	-139.05	31.09	22.78	14,689.20	10,478.61	-172.26	-1,619.18	68.08	1,664.35	1,573.99	103.46	18.419
10,400.00	10,334.17	-209.51	46.84	23.01	14,619.91	10,478.08	-241.54	-1,617.87	67.10	1,671.23	1,581.35	101.09	18.594
10,500.00	10,389.59	-290.60	64.97	23.31	14,550.39	10,477.48	-311.05	-1,616.80	66.11	1,684.19	1,594.87	98.42	18.856
10,600.00	10,429.74	-379.84	84.92	23.69	14,471.59	10,477.56	-389.84	-1,616.12	65.00	1,701.75	1,613.13	95.54	19.203
10,700.00	10,453.40	-474.53	106.10	24.17	14,382.65	10,477.11	-478.78	-1,615.81	63.74	1,722.07	1,634.24	92.71	19.607
10,800.00	10,460.00	-571.80	127.84	24.72	14,275.41	10,476.96	-586.02	-1,615.43	62.25	1,743.41	1,656.53	90.57	20.068
10,900.00	10,460.00	-669.39	149.66	25.37	14,181.79	10,476.33	-679.63	-1,614.46	60.97	1,764.23	1,678.02	90.54	20.465
11,000.00	10,460.00	-766.98	171.48	26.11	14,100.37	10,477.20	-761.04	-1,614.46	59.86	1,786.03	1,700.25	90.57	20.821
11,100.00	10,460.00	-864.57	193.30	26.93	14,008.30	10,479.19	-853.10	-1,614.90	58.55	1,808.34	1,723.08	90.62	21.212
11,200.00	10,460.00	-962.16	215.12	27.82	13,914.51	10,480.10	-946.88	-1,615.58	57.20	1,830.87	1,746.12	90.65	21.603
11,300.00	10,460.00	-1,059.75	236.94	28.79	13,815.13	10,479.75	-1,046.25	-1,616.46	55.82	1,853.55	1,769.26	90.63	21.989
11,400.00	10,460.00	-1,157.34	258.76	29.82	13,700.78	10,480.75	-1,160.59	-1,616.79	54.22	1,875.67	1,791.95	90.65	22.406

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	14,939.78	Plan #2	MWD+SC

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## Anticollision Report for Stratocaster 20 Fed #8H - Plan #2

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Ellipse error terms are correlated across survey tool tie-on points.

Calculated ellipses incorporate surface errors.

Separation is the actual distance between ellipsoids.

Distance Between centres is the straight line distance between wellbore centres.

Clearance Factor = Distance Between Profiles / (Distance Between Profiles - Ellipse Separation).

All station coordinates were calculated using the Minimum Curvature method.

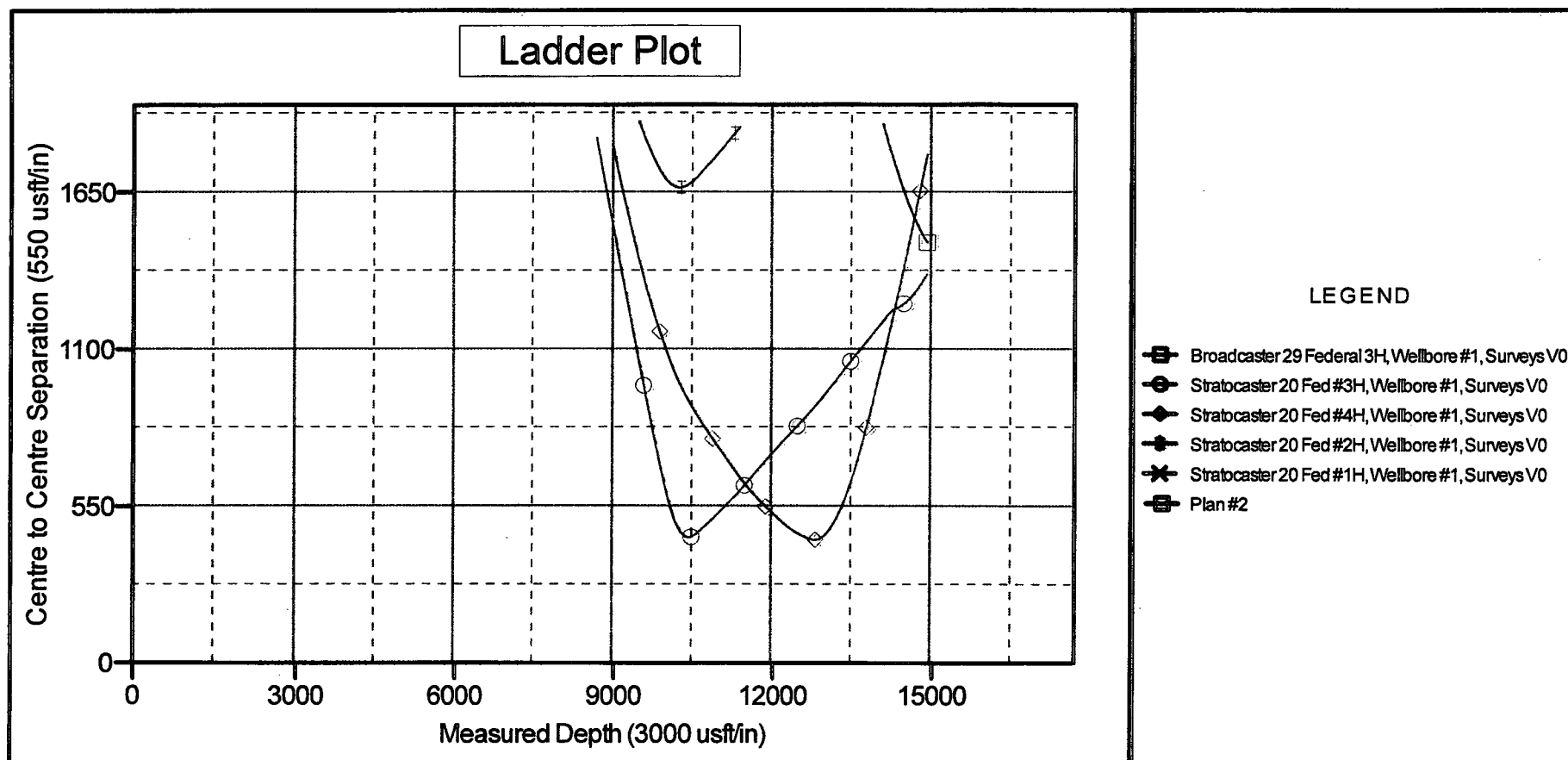
## Anticollision Report for Stratocaster 20 Fed #8H - Plan #2

Direction and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to GL 3485.4' + KB 25' @ 3510.40usft (TBD). Northing and Easting are relative to Stratocaster 20 Fed #8H.

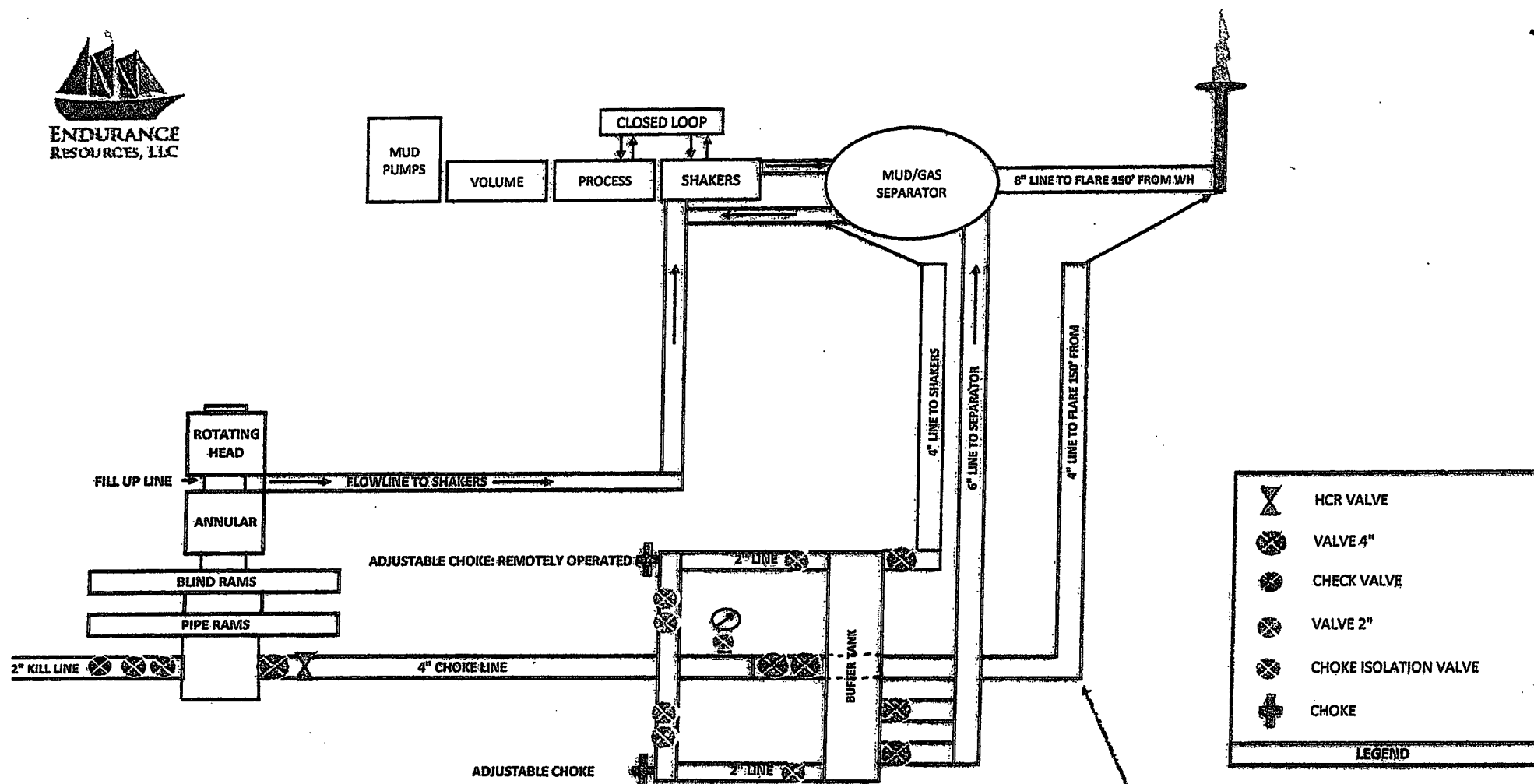
Coordinate System is US State Plane 1983, New Mexico Eastern Zone.

Central Meridian is -104.00°, Grid Convergence at Surface is: 0.45°.



SM  
DM

BOP, 5M CHOKE MANIFOLD, AND CLOSED LOOP EQUIPMENT SCHEMATIC FOR 13-5/8 BOP SYSTEM TESTED TO 3M PER ONSHORE ORDER #2



TARGETED T'S. ALL TURNS WILL BE TARGETED.  
 OPTION TO USE FLEX HOUSE. TBD ONCE DRILLING RIG IS SECURED. WILL SUNDRY.  
 ALL CHOKE LINES WILL BE STRAIGHT LINES UNLESS TURNS THAT USE TEE BLOCKS OR ARE  
 TARGETED WITH RUNNING TEES, AND WILL BE ANCHORED TO PREVENT WHIP & REDUCE VIBRATION



# **Hydrogen Sulfide (H<sub>2</sub>S) Contingency Plan**

## **For**

**Stratocaster 20 Fed 8H**  
**SHL: 330' FNL & 1650' FEL (B)**  
**BHL: 330' FSL & 660' FEL (P)**  
**Sec 20-23S-34E**  
**Lea Co, NM**

### **Escape:**

In the event of an emergency, crews shall escape upwind of any H<sub>2</sub>S gas that is released. Primary escape route will utilize the location entrance on the southwest side of the pad and continue due west down the lease road. Secondary Egress will be made available via connecting lease road to Starcaster #4H due east of the location. Depending on prevailing wind direction, the intersection of the lease road and Delaware Basin Road will be the muster Point. Necessary adjustments will be made during preliminary safety meetings. Crews should then block entrance to location from the lease road so as not to allow anyone traversing into a hazardous area. This blockade should be at a safe distance outside of the ROE. ***There are no homes or buildings in or near the ROE.***

**Assumed 100ppm ROE=3000'**

**100ppm H<sub>2</sub>S concentration shall trigger activation of this plan.**



### **Emergency Procedures:**

In the event of a release of gas containing H<sub>2</sub>S, the first responder(s) must

- Isolate the area and prevent entry by other persons into the 100 ppm ROE
- Evacuate any public places encompassed by the 100 ppm ROE
- Be equipped with H<sub>2</sub>S monitors and air packs in order to control the release
- Use the "buddy system" to ensure no injuries occur during the response
- Take precautions to avoid personal injury during this operation
- Contact operator and/or local officials to aid in operation. \*\*See list of phone numbers attached.\*\*
- Have received training in the 1) detection of H<sub>2</sub>S, 2) measures for protection against the gas 3) equipment used for protection & emergency response.

### **Ignition of Gas Source**

SO<sub>2</sub> or Sulfur Dioxide must be taken in precaution should the need to ignite the H<sub>2</sub>S gas stream if well control is lost against this gas. Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Wind direction identification whenever there is ignition of H<sub>2</sub>S must be taken into consideration as well.

**Characteristics of H<sub>2</sub>S and SO<sub>2</sub>**

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H <sub>2</sub> S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO <sub>2</sub>	2.21 Air = 1	2 ppm	N/A	1000 ppm



### **Contacting Authorities**

Endurance Resources personnel must liaison with local & state agencies to ensure a proper response to a major release. Additionally, the NMOCD must be notified of the release as soon as possible but no later than 4hrs. Agencies will ask for information such as type & volume of release, wind direction, location of release, ect. Be prepared with all information available. The following call list of essential & potential responders has been prepared for use during a release. Endurance Resources' company response must be in coordination with the HMER.

## **HYDROGEN SULFIDE DRILLING OPERATIONS PLAN**

### **1. Hydrogen Sulfide Training**

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following area prior to commencing drilling operations on this well:

1. The hazards & characteristics of hydrogen sulfide (H<sub>2</sub>S)
2. The proper use & maintenance of PPE & SCBA systems.
3. The proper use of H<sub>2</sub>S detectors, alarms, warning systems, briefing areas, evacuation procedures, & prevailing winds (seasonal).
4. The proper techniques for first aid & rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H<sub>2</sub>S metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action & shut-in procedures when drilling or reworking a well, BOP & well control procedures.
3. The contents & requirements of the H<sub>2</sub>S Drilling Operations Plan & Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H<sub>2</sub>S zone (within 3 days or 500ft) and weekly H<sub>2</sub>S & well control drills



for all personnel in each crew. The initial training session shall include a review of the site specific H2S Drilling Operations Plan and the Public Protection Plan.

## II. H2S Safety Equipment & Systems

Note: All H2S safety equipment will be installed, tested, & operational when drilling reaches a depth of 500' above, or three days prior to penetrating the first zone containing or reasonably expected to contain H2S.

### A. Well Control Equipment:

- Flare Line
- Choke manifold with remotely operated choke
- Blind rams & pipe rams to accommodate all pipe sizes with properly sized closing unit.
- Auxiliary equipment to include: annular preventer, mud-gas separator, & rotating head.

### B. Protective equipment for essential personnel:

- 30-minute SCBA units located in the dog house & at briefing areas. As it may be difficult to communicate audibly while wearing these units, hand signals shall be utilized.

### C. H2S detection and monitoring equipment:

- (2) Portable H2S monitors positioned on location for best coverage & response. These units have warning lights & audible sirens when H2S levels of 20ppm are reached. These units are also capable of detecting SO<sub>2</sub>, which is a byproduct of burning H2S.

### D. Visual warning systems:

- Wind direction indicators: will be shown on well site diagram.
- Caution/Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size so that it is legible at a reasonable distance from the immediate location. Bilingual signs will also be used, when appropriate.





E. Mud program:

- The mud program has been designed to minimize the volume of H<sub>2</sub>S circulated to surface. Proper mud weight, safe drilling practices, and the use of H<sub>2</sub>S scavengers will help minimize hazards when penetrating H<sub>2</sub>S bearing zones.

F. Metallurgy:

- All drill strings, casings, tubing, wellhead, blowout preventers, drilling spool, kill lines, and valves shall be suitable for H<sub>2</sub>S service.

G. Communication:

- Company vehicles equipped with cellular phones, as well as a satellite phone in the company man's trailer.

**ENDURANCE RESOURCES LLC HAS CONDUCTED A REVIEW TO DETERMINE IF AN H<sub>2</sub>S CONTINGENCY PLAN IS REQUIRED FOR THE ABOVE MENTIONED WELL. WE WERE ABLE TO CONDUCT THAT ANY POTENTIAL HAZARDOUS VOLUME WOULD BE MINIMAL (IF ANY PRESENT) FROM SURFACE TO TD.**



### **EMERGENCY CALL LIST**

Endurance Operations Office: (575) 308.0722

Tinlee Tilton-Sr Drilling Engineer: (512) 755.6018

Manny Sirgo- VP Operations: (432) 413.0085

Randall Harris- VP Geology: (575) 365.7747

Don Ritter- CEO: (469) 556.3757

### **EMERGENCY RESPONSE NUMBERS**

#### **HOBBS:**

State Police: 575.392.5588

City Police: 575.397.9265

Sherriff's Office: 575.393.2515

Ambulance: 911

Fire Department: 575.397.9308

LEPC: 575.393.2870

NMOCD: 575.393.6161

BLM: 575.393.3612

#### **CARLSBAD:**

State Police: 575.885.3137

City Police: 575.885.2111

Sherriff's Office: 575.887.7551

Ambulance: 911

Fire Department: 575.885.2111

LEPC: 575.887.3798

BLM: 575.361.2822

#### **EMERGENCY SERVICES:**

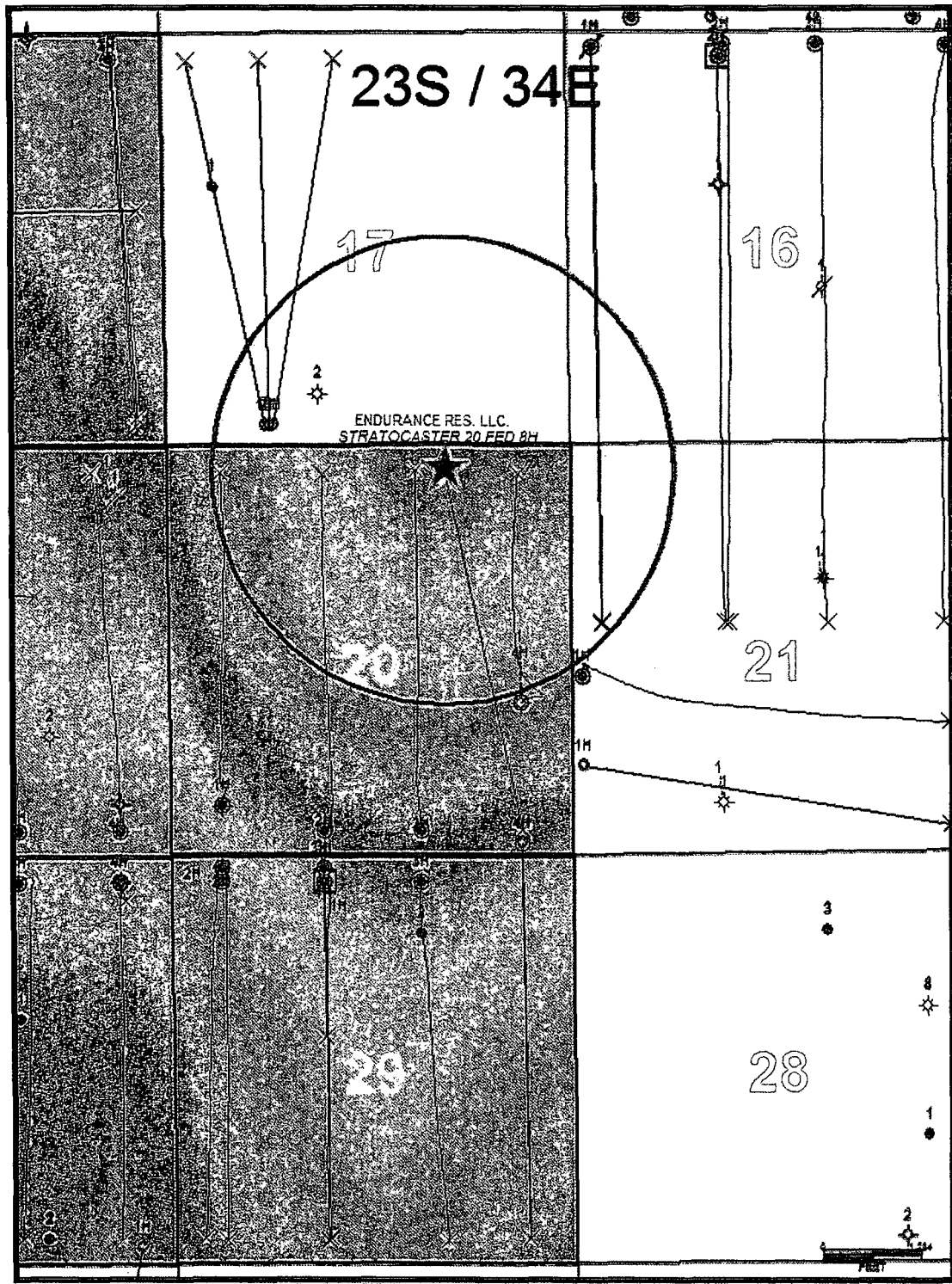
Boots & Coots: 1.800.256.9688

Cudd Pressure Control: 915.699.0139

Halliburton: 575.746.2757

Baker Hughes: 575.746.3569

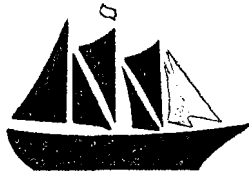
Stratocaster 20 Federal 8H  
3000' H2S Radius Map



- ★ Surface Location
- H2S 3000' Radius

**Stratocaster 20 Fed #8H**

PROPOSED INTERIM SITE RECLAMATION



ENDURANCE  
RESOURCES, LLC

ENDURANCE RESOURCES LLC

Stratocaster 20 Fed #8H

330' FNL & 1650' FEL

SEC 20-23S-34E

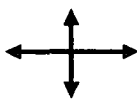
LEA CO, NM

N



350'

W



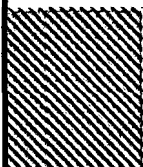
L

A=L X W

POWER LINE & FLOWLINE

~~~~~

PROPOSED  
RECLAMATION  
AREA



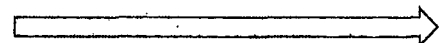
350'

100' X 290'



220' X 75'

ROAD IN/OUT



350'



## **ENDURANCE RESOURCES LLC**

### **MULTIPOINT SURFACE USE AND OPERATIONS PLAN**

**Stratocaster 20 Fed 8H**  
**SHL: 330' FNL & 1650' FEL (B)**  
**BHL: 330' FSL & 660' FEL (P)**  
**Sec 20-23S-34E**  
**Lea Co, NM**

This plan is submitted with Form 3160-3, Application for Permit to Drill, covering the above mentioned well. The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of surface disturbance involved and the procedures to be followed in rehabilitating the surface after the completion of operations, so that a complete appraisal can be made of the environment effect associated with these operations.

#### **Directions:**

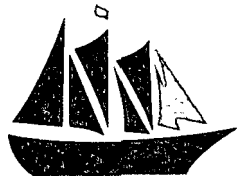
From the state highway 129 and CR 21 (Delaware Basin Rd) go north on CR 21 5.01 miles. Turn right on caliche road and go southeast 0.5 miles. Turn left and go east 0.2 miles. Turn left and go northwest 0.2 miles. Turn right and go east 0.5 miles. Turn left and go north 0.15 miles. Turn right and go east 0.3 miles. Turn left and go north 0.3 miles. Bend right and go northwest 620'. Turn left on 2-track road and go north 0.51 miles. Turn left and go southwest 0.32 miles to a proposed road survey and follow flags northwest 81'. Then north 731' to the proposed southeast pad corner for this location.

#### **1. Existing Roads:**

- The well site and elevation plat for the proposed well are reflected on the well site layout; Form C-102, page 1. This well was staked by Madron Surveying Inc. from Carlsbad, NM.
- Page 4 of the C-102 packet contains is a Vicinity map showing the well and roads in the vicinity of the proposed location. The proposed well site and the access route is labeled in orange & blue (page 3). The proposed well site and the access route to location are indicated on the Site map (page 2) of C-102 packet. ROW using this existing route is being requested if necessary.
- Routine grading and maintenance of roads will be conducted as necessary to maintain their condition as long as any operations continue on this lease.

#### **2. Planned Access Road:**

- Endurance Resources LLC will be using <sup>812</sup> ~~731~~ access road from that turns off a 2-track road to the SE corner of the planned Stratocaster 8H wellsite is being requested for ROW.
- This planned access road will have a maximum width of 14 feet of driving surface. The road will be crowned & ditched with a 2% slope from the tip of the crown to the edge of the driving



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surface. The ditches will be 3ft wide with 3:1 slopes. The driving surface will be made of 6" rolled & compacted caliche.

- This road will be bladed & caliche will be placed into existing holes which will be watered and compacted to prevent surface erosion. The average grade will be approx. 1%. Surface material will be of native caliche. This material will be obtained from a BLM approved pit nearest in proximity to the location.
- No cattle guards, gates, or fence cuts will be required. No turnouts are planned.

### **3. Location of Existing Wells:**

- A one mile radius map shows all existing/proposed wells within a one-mile radius of the proposed location. See attached radius plat for more details.

### **4. Location of Existing and/or Proposed Facilities:**

- This location will require "cut & fill" from the south to the north. Well site will be constructed by way of a 350'x350' location. Topsoil pile will be placed on the south side of location. V-door will be facing north.
- In the event this well is found productive, the production will go to a tank battery with (4) 500 bbl oil tanks, (2) 500 bbl water tanks, a separator, a heater treater, a free water knockout, and a gas sales meter on this site on the Telecaster 3H location. Necessary production equipment is subject to change once offsetting horizontal production is analyzed. Tank battery equipment will be placed on the north side of location, while treating facility equipment will be placed on the west side of location. Note: a distance of 100' is required between fired vessels and any combustibles for safety purposes. This battery will potential handle one more additional horizontal well if area is successful.
- All flow lines will adhere to API standards and will be 3 ½" steel pipe, buried 3'.
- Power will be supplied by way of existing electrical line running along CR 21. This is an Xcel owned power line. A strip of land 30' wide in Sec 30 will go 0.2 miles along the lease road to the Stratocaster 20 Fed 8H location. A multi-use ROW for this electrical line is being requested to follow the proposed access road into location.

### **5. Location and Types of Water Supply:**

- This location will be drilled using a combination of water mud systems (outlined in the Drilling program). The water will be obtained from commercial water stations in the area and hauled to location by transport truck using existing roads. On occasion, water will be obtained from a pre-existing water well, running a pump directly to the drilling rig. In these cases where a poly line is used to transport water for drilling or completion purposes, the existing and proposed road into location will be utilized.

### **6. Construction Materials:**

- All caliche utilized for the drilling pad and access road will be obtained from an existing BLM approved pit or from prevailing deposits found under the location. If deposits are found underneath the proposed location, topsoil will be pushed back from the drill site & existing caliche will be ripped and compacted. Then topsoil will be stockpiled on location as depicted on the rig layout All roads will be constructed of 6" rolled and compacted caliche. Will use BLM recommended use of extra caliche from other locations close by for roads, if available.



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## **7. Methods of Handling Waste Material:**

- All trash, junk, & other material will be removed from the well site within 30 days after finishing drilling/completion operations. All waste material will be contained in trash bins to prevent scattering. When the job is completed, all contents will be removed and disposed of in an approved sanitary landfill.
- The supplier, including broken sacks, will pick up slats remaining after completion of the well.
- A porto-john will be utilized for handling all gray water waster material. The equipment will be properly maintained during the drilling and completion operations, and will be removed when all operations are completed. Contents will be removed and disposed of in an approved sanitary land fill. Sewage from living quarters will drain into holding tanks & be cleaned out periodically and hauled to a waste disposal facility.
- Drill cuttings will be separated by a series of solids removal equipment and stored in steel containment pits and then hauled to a state approved disposal facility.
- Drilling fluids will be contained in steel pits in a closed loop circulating system. Fluids will be cleaned and reused. Water produced during testing will be contained in the steel pits & disposed of at a state approved disposal facility. Any oil or condensate produced will be stored in test tanks until sold & hauled from site.

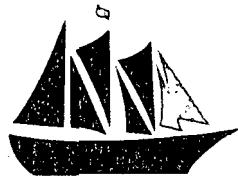
## **8. Ancillary Facilities:**

- No campsites or other facilities will be constructed as a result of this well.

## **9. Wellsite Layout:**

- Attached is the proposed well site layout with dimensions of the pad layout & topsoil pile.
- Mud pits in the active circulating system will be steel pits and a closed loop system will be utilized.
- This location will require "cut & fill" from the south to the north. Well site will be constructed by way of a 350'x350' pad. Topsoil pile will be placed on the south side of location. V-door will be facing north.
- If the well is a producer, those areas of the location not essential to production facilities will be reclaimed & seeded per BLM requirements.





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#### **10. Plans for Surface Reclamation:**

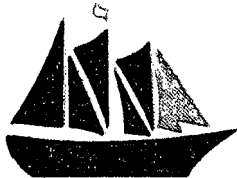
- After concluding the drilling and/or completion operations, if the well is found non-commercial, the caliche will be removed from the pad and transported to the original caliche pit or used for other drilling locations or roads. The road will be reclaimed as directed by the BLM. The well site will be properly contoured, as close as possible, to the original topography. Topsoil from the spoil pile will be placed over the distributed area. Revegetation procedures will comply with BLM standards.
- The location and road will be rehabilitated as recommended by the BLM.
- If the well is deemed commercially productive, caliche from areas of the drill pad not required for *safe* operations, will be removed. These unused areas of the drill pad will be contoured as close as possible to match the original topography. The original topsoil will be returned to the area of the drilling pad not necessary to operate the well. These areas will then be seeded per BLM requirements.
- See attached site reclamation diagram for more details.
- All interim reclamation will be performed within 6 months of well completion and final reclamation will be performed within 6 months of abandonment.

#### **11. Surface Ownership:**

- The surface is owned by the Bureau of Land Management (BLM) and is administered by the BLM. The surface is multiple use with primary uses of the region for the grazing of livestock, as well as oil & gas production.

#### **12. Other Information:**

- The area surrounding the well site is made up of grassland & mesquite trees. The topsoil is packed soils and sand. No wildlife was observed, but free range cattle, deer, dove/quail, & small rodents are likely to traverse the area.
- There is no permanent or live water in the general proximity of this location.
- There are no dwellings within 1 mile of this location.



ENDURANCE  
RESOURCES. LLC

### Operator's Certification:

Endurance Resources LLC representatives responsible for ensuring compliance of the surface use plan are listed below.

Tinlee Tilton

Sr Drilling Engineer

Endurance Resources LLC

203 W. Wall St, Suite 1000

Midland, TX 79701

512.755.6018

M. A. Sirgo III

Engineer

Endurance Resources LLC

203 W. Wall St, Suite 1000

Midland, TX 79701

432.413.0085

### 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 which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in the 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.

4/25/2016

Date

M. A. Sirgo III

M A. Sirgo III

Engineer

Endurance Resources LLC

[manny@enduranceresourcesllc.com](mailto:manny@enduranceresourcesllc.com)