

Form 3160-3  
(June 2015)

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

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
**APPLICATION FOR PERMIT TO DRILL OR REENTER**

1a. Type of work: <input type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No.
1b. Type of Well: <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		7. If Unit or CA Agreement, Name and No.
2. Name of Operator		8. Lease Name and Well No.
3a. Address		9. API Well No. <b>30 043 21349</b>
3b. Phone No. (include area code)		10. Field and Pool, or Exploratory <b>Rusty Gallup</b>
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface At proposed prod. zone		11. Sec., T. R. M. or Blk. and Survey or Area
14. Distance in miles and direction from nearest town or post office*		12. County or Parish
		13. State
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
24. Attachments		

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

- |  |   |
|--|---|
| 1. Well plat certified by a registered surveyor.   | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan.  | 5. Operator certification.  |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be requested by the BLM.            |

25. Signature	Name (Printed/Typed)	Date
Title		
Approved by (Signature)	Name (Printed/Typed)	Date
Title	Office	

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

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.



(Continued on page 2)

\*(Instructions on page 2)



State of New Mexico  
Energy, Minerals and Natural Resources Department

Submit Electronically  
Via E-permitting

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

### NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

#### Section 1 – Plan Description Effective May 25, 2021

**I. Operator:** Enduring Resources, LLC **OGRID:** 372286 **Date:** 08/12/2021

**II. Type:**  Original  Amendment due to  19.15.27.9.D(6)(a) NMAC  19.15.27.9.D(6)(b) NMAC  Other.

If Other, please describe: \_\_\_\_\_

**III. Well(s):** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
S Escavada Unit 347H	Pending	Sec. 27, T22N, R7W	UL: 1 SHL: 2082' FSL & 397' FEL	600	2,540	1,000
S Escavada Unit 350H	30-043- 21318	Sec. 27, T22N, R7W	UL: 1 SHL: 2091' FSL & 436' FEL	600	2,540	1,000
S Escavada Unit 351H	30-043-21317	Sec. 27, T22N, R7W	UL: 1 SHL:2087' FSL & 417' FEL	600	2,540	1,000

**IV. Central Delivery Point Name:** South Escavada CDP [See 19.15.27.9(D)(1) NMAC]

**V. Anticipated Schedule:** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
S Escavada Unit 347H	Pending	11/6/2021	11/18/2021	12/5/2021	12/18/2021	12/21/2021
S Escavada Unit 350H	30-043- 21318	11/8/2021	11/23/2021	12/5/2021	12/18/2021	12/21/2021
S Escavada Unit 351H	30-043-21317	11/11/2021	11/28/2021	12/6/2021	12/18/2021	12/21/2021

**VI. Separation Equipment:**  Attach a complete description of how Operator will size separation equipment to optimize gas capture.

**VII. Operational Practices:**  Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

**VIII. Best Management Practices:**  Attach a complete description of Operator’s best management practices to minimize venting during active and planned maintenance.

**Section 2 – Enhanced Plan**

**EFFECTIVE APRIL 1, 2022**

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

**IX. Anticipated Natural Gas Production:**

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

**X. Natural Gas Gathering System (NGGS):**

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

**XI. Map.**  Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

**XII. Line Capacity.** The natural gas gathering system  will  will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

**XIII. Line Pressure.** Operator  does  does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

Attach Operator’s plan to manage production in response to the increased line pressure.

**XIV. Confidentiality:**  Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

### **Section 3 - Certifications**

**Effective May 25, 2021**

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system.

***If Operator checks this box, Operator will select one of the following:***

**Well Shut-In.**  Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

**Venting and Flaring Plan.**  Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- (a) power generation on lease;
- (b) power generation for grid;
- (c) compression on lease;
- (d) liquids removal on lease;
- (e) reinjection for underground storage;
- (f) reinjection for temporary storage;
- (g) reinjection for enhanced oil recovery;
- (h) fuel cell production; and
- (i) other alternative beneficial uses approved by the division.

### **Section 4 - Notices**

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature: 
Printed Name: Heather Huntington
Title: Permitting Technician
E-mail Address: hhuntington@enduringresources.com
Date: 8/13/2021
Phone: 505-636-9751

**OIL CONSERVATION DIVISION**  
**(Only applicable when submitted as a standalone form)**

Approved By:
Title:
Approval Date:
Conditions of Approval:

## Attachments:

**Separation Equipment: Below is a complete description of how Operator will size separation equipment to optimize gas capture.**

Description of how separation equipment will be sized to optimize gas capture:

Well separation equipment is sized to have appropriate residence time and vapor space to remove gas particles on the micron scale per typical engineering calculations and/or operational experience. Furthermore, a sales scrubber downstream of the well separators is planned in order to capture any additional liquids if present. All gas is routed to end users or the sales pipeline under normal operating conditions.

**Operational & Best Management Practices: Below is a complete description of the actions the Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC. Additionally, below is a complete description of Operator's best management practices to minimize venting during active and planned maintenance.**

### Drilling Operations:

Enduring Resources will minimize venting by:

- Gas will only be vented to the atmosphere to avoid risk of immediate or substantial adverse impact to employee safety, public health, and the environment.
- If utilized, flare stacks shall be located at a minimum of 100 feet from the nearest surface hole location

### Completion Operations:

Enduring Resources will minimize venting by:

- Separator operation will commence as soon as technically feasible.
- Gas will route immediately to a collection system or applied to other beneficial use, such as a fuel source for onsite equipment.
- During initial flowback and if technically feasible, flaring shall occur rather than venting.
- If natural gas does not meet pipeline standards, gas will be vented or flared. A gas analysis will be performed twice weekly until standards are met (for up to 60 days). This is not anticipated to occur.
- If required, all venting and flaring of natural gas during flowback operations shall be performed in compliance with Subsections B, C and D of 19.15.27.8 NMAC.

### Production Operations:

Enduring Resources will minimize venting by:

- Shutting in the wells if the pipeline is not available. No flaring of high pressure gas will occur.
- Utilizing gas for equipment fuel, heater fuel, and artificial lift when allowable.
- Capturing low pressure gas via a gas capture system when allowable.

### In General:

- All venting and flaring from drilling, flowback and operation phases shall be reported in compliance with Subsection G of 19.15.27.8 NMAC.
- If utilized, flare stacks shall be located at a minimum of 100 feet from the nearest surface hole location and 100 ft from the permanent facility storage tanks.

### Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on Gas Transporter system at that time. Based on current information, it is Operator's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

### Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease

- Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
  - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
  - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines
- Power generation for grid;
- Liquids removal on lease;
- **Reinjection** for underground storage;
- **Reinjection** for temporary storage;
- **Reinjection** for enhanced oil recovery;
- Fuel cell production; and
- **Other alternative beneficial uses approved by the division.**



**ENDURING RESOURCES IV, LLC**  
**1050 SEVENTEENTH STREET, SUITE 2500**  
**DENVER, COLORADO 80265**

**DRILLING PLAN:** *Drill, complete, and equip single lateral in the Mancos-H formation*

**WELL INFORMATION:**

**Name:** S ESCAVADA UNIT 347H

**API Number:** not yet assigned

**AFE Number:** not yet assigned

**ER Well Number:** not yet assigned

**State:** New Mexico

**County:** Sandoval

**Surface Elevation:** 6,749 ft ASL (GL) 6,774 ft ASL (KB)  
**Surface Location:** 27-22N-07W Sec-Twn-Rng 2,082 ft FSL 397 ft FEL  
 36.108414 ° N latitude 107.555545 ° W longitude (NAD 83)  
**BH Location:** 28-22N-07W Sec-Twn-Rng 408 ft FSL 2,524 ft FEL  
 36.10406 ° N latitude 107.580879 ° W longitude (NAD 83)

**Driving Directions:** FROM THE INTERSECTION OF US HWY 550 & US HWY 64 IN BLOOMFIELD, NM:

South on US Hwy 550 for 48.9 miles to MM 103; Right (South) on Atkins Road for 3.2 miles to fork; Left (South) continuing on Atkins Road for 1.1 miles to 4-way intersection; Straight (south) for 1.6 miles to 4-way intersection; Straight (South) for 1.9 miles to fork; Left (South) for 0.4 miles to fork; Right (South) for 0.3 miles to S Escavada Unit 350H access road; Left (South) along 350H access road for 0.7 miles to S Escavada Unit 350H Pad (Wells: 347H, 350H & 351H).

**GEOLOGIC AND RESERVOIR INFORMATION:**

<i>Prognosis:</i>	Formation Tops	TVD (ft ASL)	TVD (ft KB)	MD (ft KB)	O / G / W	Pressure
	Ojo Alamo	6,290	484	484	W	normal
	Kirtland	6,180	594	594	W	normal
	Fruitland	6,055	719	720	G, W	sub
	Pictured Cliffs	5,705	1,069	1,078	G, W	sub
	Lewis	5,610	1,164	1,178	G, W	normal
	Chacra	5,335	1,439	1,482	G, W	normal
	Cliff House	4,290	2,484	2,673	G, W	sub
	Menefee	4,270	2,504	2,696	G, W	normal
	Point Lookout	3,330	3,444	3,768	G, W	normal
	Mancos	3,155	3,619	3,968	O,G	sub (~0.38)
	Gallup (MNCS_A)	2,880	3,894	4,281	O,G	sub (~0.38)
	MNCS_B	2,770	4,004	4,404	O,G	sub (~0.38)
	MNCS_C	2,675	4,099	4,509	O,G	sub (~0.38)
	MNCS_Cms	2,645	4,129	4,542	O,G	sub (~0.38)
	MNCS_D	2,500	4,274	4,707	O,G	sub (~0.38)
	MNCS_E	2,360	4,414	4,886	O,G	sub (~0.38)
	MNCS_F	2,320	4,454	4,944	O,G	sub (~0.38)
	MNCS_G	2,245	4,529	5,070	O,G	sub (~0.38)
	MNCS_H	2,190	4,584	5,193	O,G	sub (~0.38)
	<b>P.O.E. TARGET</b>	<b>2,140</b>	<b>4,634</b>	<b>5,463</b>	<b>O,G</b>	<b>sub (~0.38)</b>
	<b>PROJECTED TD</b>	<b>2,195</b>	<b>4,579</b>	<b>13,195</b>	<b>O,G</b>	<b>sub (~0.38)</b>

**Surface:** Nacimiento

**Oil & Gas Zones:** Several gas bearing zones will be encountered; target formation is the Gallup

**Pressure:** Normal (0.43 psi/ft) or sub-normal pressure gradients anticipated in all formations

Max. pressure gradient: 0.43 psi/ft Evacuated hole gradient: 0.22 psi/ft

Maximum anticipated BH pressure, assuming maximum pressure gradient: 2,000 psi  
 Maximum anticipated surface pressure, assuming partially evacuated hole: 990 psi

**Temperature:** Maximum anticipated BHT is 130° F or less

#### H<sub>2</sub>S INFORMATION:

**H<sub>2</sub>S Zones:** Encountering hydrogen-sulfide bearing zones is **NOT** anticipated.

**Safety:** Sensors and alarms will be placed in the substructure, on the rig floor, above the pits, and at the shakers.

#### LOGGING, CORING, AND TESTING:

**Mud Logs:** None planned; remote geo-steering from drill out of 9-5/8" casing to TD; gas detection from drillout of 13-3/8" casing to TD.

**MWD / LWD:** Gamma Ray from drillout of 13-3/8" casing to TD

**Open Hole Logs:** None planned

**Testing:** None planned

**Coring:** None planned

**Cased Hole Logs:** CBL on 5-1/2" casing from deepest free-fall depth to surface

#### DRILLING RIG INFORMATION:

**Contractor:** Aztec

**Rig No.:** 1000

**Draw Works:** E80 AC 1,500 hp

**Mast:** Hyduke Triple (136 ft, 600,000 lbs, 10 lines)

**Top Drive:** NOV IDS-350PE (350 ton)

**Prime Movers:** 4 - GE Jenbacher Natural Gas Generator

**Pumps:** 2 - RS F-1600 (7,500 psi)

**BOPE 1:** Cameron double & single gate rams (13-5/8", 3,000 psi)

**BOPE 2:** Cameron annular (13-5/8", 5,000 psi)

**Choke** Cameron (4", 10,000 psi)

**KB-GL (ft):** 25

**NOTE:** A different rig may be used to drill the well depending on rig availability

#### BOPE REQUIREMENTS:

*See attached diagram for details regarding BOPE specifications and configuration.*

- 1) Rig will be equipped with upper and lower kelly cocks with handles available.
- 2) Inside BOP and TIW valves will be available to use on all sizes and threads of drill pipe used while drilling the well.
- 2) BOP accumulator will have enough capacity to open the HCR valve, close all rams and annular preventer, and retain minimum of 200 psi above precharge on the closing manifold without the use of closing pumps. The fluid reservoir capacity shall be at least double the usable fluid volume of the accumulator system capacity, and the fluid level shall be maintained at manufacturer's recommendation. There will be two additional sources of power for the closing pumps (electric and air). Sufficient nitrogen bottles will be available and will be recharged when pressure falls below manufacturer's recommended minimum.
- 3) BOP testing shall be conducted (a) when initially installed, (b) whenever any seal is broken or repaired, (c) if the time since the previous test exceeds 30 days. Tests will be conducted using a test plug. BOP ram preventers will be tested to 3,000 psig for 10 minutes, and the annular preventer will be tested to 1,500 psi for 10 minutes. Ram and annular preventers will be tested to 250 psi for 5 minutes. Additionally, BOP and casing strings will be tested to .22 psi/ft or 1,500 psi, whichever is greater but not exceeding 70% of yield strength of the casing, for 30 minutes, prior to drilling out 13-3/8" and 9-5/8" casing. Rams and hydraulically operated remote choke line valve will be function tested daily at a minimum.
- 4) Remote valve for BOP rams, HCR, and choke shall be placed in a location that is readily available to the driller. The remote BOP valve shall be capable of closing and opening the rams.
- 5) Manual locking devices (hand wheels) shall be installed on rams. A valve will be installed on the annular preventer's closing line as close as possible to the preventer to act as a locking device. The valve will be maintained in the open position and shall only be closed when there is no power to the accumulator.

#### FLUIDS AND SOLIDS CONTROL PROGRAM:

- Fluid Measurement:** Pumps shall be equipped with stroke counters with displays in the dog-house. Slow pump speed shall be recorded daily and after mudding up, at a minimum, on the drilling report. A Pit Volume Totalizer will be installed and the readout will be displayed in the dog-house. Gas-detecting equipment will be installed at the shakers, and readouts will be available in the dog-house and the in the geologist's work-station (if geologist or mud-logger is on-site).
- Closed-Loop System:** A fully, closed-loop system will be utilized. The system will consist of above-ground piping and above-ground storage tanks and bins. The system will not entail any earthen pits, below-grade storage, or drying pads. All equipment will be disassembled and removed from the site when drilling operations cease. The system will be capable of storing all fluids and generated cuttings and of preventing uncontrolled releases of the same. The system will be operated in an efficient manner to allow the recycling and reuse of as much fluid as possible and to minimize the amount of fluids and solids that require disposal.
- Fluid Disposal:** Fluids that cannot be reused, recycled, or returned to the supplier will be hauled to and disposed of at an approved disposal site (Industrial Ecosystem, Inc. or Envirotech, Inc.).
- Solids Disposal:** Drilling solids will be stored (until haul-off) on-site in separate containers with no other waste, debris, or garbage products. Waste solids will be hauled to and disposed of at an approved disposal site (Industrial Ecosystem, Inc. or Envirotech, Inc.).
- Fluid Program:** See "Detailed Drilling Plan" section for specifics.

**DETAILED DRILLING PLAN:**

**SURFACE:** *Drill vertically to casing setting depth (plus necessary rathole), run casing, cement casing to surface.*

0 ft (MD)	to	350 ft (MD)	Hole Section Length:	350 ft
0 ft (TVD)	to	350 ft (TVD)	Casing Required:	350 ft

*Note: Surface hole may be drilled, cased, and cemented with a smaller rig in advance of the drilling rig.*

Fluid:	Type	MW (ppg)	FL (mL/30 min)	PV (cp)	YP (lb/100 sqft)	pH	Comments
	Fresh Water	8.4	N/C	2 - 8	2 - 12	9.0	Spud mud

**Hole Size:** 17-1/2"

**Bit / Motor:** Mill Tooth or PDC, no motor

**MWD / Survey:** No MWD, deviation survey

**Logging:** None

Casing Specs:		Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	13.375	54.5	J-55	BTC	1,130	2,730	853,000	909,000
Loading					153	567	116,634	116,634
Min. S.F.					7.39	4.82	7.31	7.79

*Assumptions: Collapse: fully evacuated casing with 8.4 ppg equivalent external pressure gradient*

*Burst: maximum anticipated surface pressure with 9.5 ppg fluid inside casing while drilling intermediate hole and 8.4 ppg equivalent external pressure gradient*

*Tension: buoyed weight in 8.4 ppg fluid with 100,000 lbs over-pull*

**MU Torque (ft lbs):** Minimum: N/A Optimum: N/A Maximum: N/A

*Make-up as per API Buttress Connection running procedure.*

**Casing Summary:** Float shoe, 1 jt casing, float collar, casing to surface

**Centralizers:** 2 centralizers per jt stop-banded 10' from each collar on bottom 3 jts, 1 centralizer per 2 jts to surface

Cement:	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	Hole Cap. (cuft/ft)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
	Class G	15.8	1.174	5.15	0.6946	100%	0	414

*Calculated cement volumes assume gauge hole and the excess noted in table*

*Halliburton HALCEM surface cementing blend*

**Notify NMOCD & BLM if cement is not circulated to surface. Cement must achieve 500 psi compressive strength before drilling out.**

**INTERMEDIATE:** *Drill as per directional plan to casing setting depth, run casing, cement casing to surface.*

<b>350 ft (MD)</b>	<b>to</b>	<b>2,810 ft (MD)</b>	<b>Hole Section Length:</b>	<b>2,460 ft</b>
<b>350 ft (TVD)</b>	<b>to</b>	<b>2,604 ft (TVD)</b>	<b>Casing Required:</b>	<b>2,810 ft</b>

Fluid:	Type	MW (ppg)	FL (mL/30 min)	PV (cp)	YP (lb/100 sqft)	pH	Comments
	LSND (KCl)	8.8 - 9.5	20	8 - 14	8 - 14	9.0 - 9.5	

**Hole Size:** 12-1/4"

**Bit / Motor:** PDC w/mud motor

**MWD / Survey:** MWD Survey with inclination and azimuth survey (every 100' at a minimum), GR optional

**Logging:** None

**Pressure Test:** NU BOPE and test (as noted above); pressure test 13-3/8" casing to **1,500** psi for 30 minutes.

Casing Specs:	Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	9.625	36.0	J-55	LTC	2,020	3,520	564,000
Loading					1,137	1,139	188,216
Min. S.F.					<b>1.78</b>	<b>3.09</b>	<b>3.00</b>

*Assumptions: Collapse: fully evacuated casing with 8.4 ppg equivalent external pressure gradient*

*Burst: maximum anticipated surface pressure with 9.5 ppg fluid inside casing while drilling production hole and 8.4 ppg equivalent external pressure gradient*

*Tension: buoyed weight in 8.4 ppg fluid with 100,000 lbs over-pull*

**MU Torque (ft lbs):** Minimum: 3,400 Optimum: 4,530 Maximum: 5,660

**Casing Summary:** Float shoe, 1 jt casing, float collar, casing to surface

**Centralizers:** 2 centralizers per jt stop-banded 10' from each collar on bottom 3 jts, 1 centralizer per 2 jts to surface

Cement:	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
Lead	G:POZ Blend	12.3	1.987	10.16	70%	0	634
Tail	Class G	15.8	1.148	4.98	20%	2,310	164

Annular Capacity 0.3627 cuft/ft 9-5/8" casing x 13-3/8" casing annulus

0.3132 cuft/ft 9-5/8" casing x 12-1/4" hole annulus

Calculated cement volumes assume gauge hole and the excess noted in table

Halliburton ECONOCEM & HALCEM cementing blend

**Notify NMOCD & BLM if cement is not circulated to surface. Cement must achieve 500 psi compressive strength before drilling out.**

**PRODUCTION:** Drill to TD following directional plan, run casing, cement casing to surface.

<b>2,810 ft (MD)</b>	<b>to</b>	<b>13,195 ft (MD)</b>	<b>Hole Section Length:</b>	<b>10,385 ft</b>
<b>2,604 ft (TVD)</b>	<b>to</b>	<b>4,579 ft (TVD)</b>	<b>Casing Required:</b>	<b>13,195 ft</b>

<b>Estimated KOP:</b>	<b>4,288 ft (MD)</b>	<b>3,900 ft (TVD)</b>
<b>Estimated Landing Point (P.O.E.):</b>	<b>5,463 ft (MD)</b>	<b>4,634 ft (TVD)</b>
<b>Estimated Lateral Length:</b>	<b>7,732 ft (MD)</b>	

Fluid:	Type	MW (ppg)	FL (mL/30')	PV (cp)	YP (lb/100 sqft)	pH	Comments
	LSND (FW)	8.8 - 9.5	20	8 - 14	8 - 14	9.0 - 9.5	OBM as contingency

**Hole Size:** 8-1/2"

**Bit / Motor:** PDC w/mud motor

**MWD / Survey:** MWD with GR, inclination, and azimuth (survey every joint from KOP to Landing Point and survey every 100' minimum before KOP and after Landing Point)

**Logging:** GR MWD for entire section, no mud-log or cuttings sampling, no OH WL logs

**Pressure Test:** NU BOPE and test (as noted above); pressure test 9-5/8" casing to **1,500** psi for 30 minutes.

<b>Casing Specs:</b>	Size (in)	Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	5.500	17.0	P-110	LTC	7,460	10,640	546,000	445,000
Loading					2,262	8,929	293,564	293,564
Min. S.F.					<b>3.30</b>	<b>1.19</b>	<b>1.86</b>	<b>1.52</b>

*Assumptions: Collapse: fully evacuated casing with 9.5 ppg fluid in the annulus (floating casing during running)  
 Burst: 8,500 psi maximum surface treating pressure with 10.2 ppg equivalent mud weight sand laden fluid with 8.4 ppg equivalent external pressure gradient  
 Tension: buoyed weight in 9.0 ppg fluid with 100,000 lbs over-pull*

**MU Torque (ft lbs):** Minimum: 3,470 Optimum: 4,620 Maximum: 5,780

**Casing Summary:** Float shoe, 1 jt casing, float collar, 1 jt casing, float collar, 1 jt casing, toe-initiation sleeve, 20' marker joint, toe-initiation sleeve, casing to KOP with 20' marker joints spaced evenly in lateral every 2,000', floatation sub, casing to surface. **The bottom toe-initiation sleeve shall be placed no closer to the unit boundary than 100' measured along the azimuth of the well or 330' measured perpendicular to the the azimuth of the well.**

**Centralizers:** Centralizer count and placement may be adjusted based on well conditions and as-drilled surveys.

Lateral: 1 centralizer per joint

Curve: 1 centralizer per joint from landing point to KOP

KOP to surf: 1 centralizer per 2 joints

<b>Cement:</b>	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
Lead	G:POZ blend	12.4	1.907	9.981	50%	0	860
Tail	G:POZ blend	13.3	1.360	5.999	10%	4,281	1,652

Annular Capacity 0.2691 cuft/ft 5-1/2" casing x 9-5/8" casing annulus

0.2291 cuft/ft 5-1/2" casing x 8-1/2" hole annulus

*Calculated cement volumes assume gauge hole and the excess noted in table*

*Halliburton ECONOCEM & EXTENDACEM cementing blend*

**Notify NMOCD & BLM if cement is not circulated to surface.**

**Note:** This well will not be considered an unorthodox well location as defined by NMAC 19.15.16.15.C.5. As defined in NMAC 19.15.16.15.C.1.a and 19.15.16.15.C.1.b, no point in the completed interval shall be closer to the unit boundary than 100' measured along the azimuth of the well or 330' measured perpendicular to the azimuth well. The boundaries of the completed interval, as defined by NMAC 19.15.16.7.B, are the last take point and first take point, as defined by NMAC 19.15.16.7.E and NMAC 19.15.16.7.J, respectively. In the case of this well, the last take point will be the bottom toe-initiation sleeve, and the first take point will be the top perforation. **Neither the bottom toe-initiation sleeve nor the top perforation shall be closer to the unit boundary than 100' measured along the azimuth of the well or 330' measured perpendicular to the azimuth of the well.**

S Escavada Unit Order Number is R-14347.

**FINISH WELL:** ND BOP, cap well, RDMO.

**COMPLETION AND PRODUCTION PLAN:**

**Frac:** 45 plug-and-perf stages with 270,000 bbls slickwater fluid and 12,500,000 lbs of proppant (estimated)

**Flowback:** Flow back through production tubing as pressures allow (ESP may be used for load recovery assistance)

**Production:** Produce through production tubing via gas-lift into permanent production and storage facilities

**ESTIMATED START DATES:**

**Drilling:** TBD

**Completion:** TBD

**Production:** TBD

**Prepared by:** Alec Bridge 3/5/2020



# **Enduring Resources LLC**

**San Juan Basin - S Escavada Unit & Terra Wash CA  
350H Pad  
347H**

**Wellbore #1**

**Plan: Design #1**

## **Standard Planning Report**

**05 March, 2020**



Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well 347H
<b>Company:</b>	Enduring Resources LLC	<b>TVD Reference:</b>	KB @ 6774.0usft (Original Well Elev)
<b>Project:</b>	San Juan Basin - S Escavada Unit & Terra Wash CA	<b>MD Reference:</b>	KB @ 6774.0usft (Original Well Elev)
<b>Site:</b>	350H Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	347H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

<b>Project</b>	San Juan Basin - S Escavada Unit & Terra Wash CA		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	New Mexico Central Zone		

<b>Site</b>	350H Pad, Sandoval County, New Mexico				
<b>Site Position:</b>		<b>Northing:</b>	1,861,327.42 usft	<b>Latitude:</b>	36.108441°N
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,254,739.45 usft	<b>Longitude:</b>	107.555677°W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	-0.77 °

<b>Well</b>	347H					
<b>Well Position</b>	<b>+N/-S</b>	-10.4 usft	<b>Northing:</b>	1,861,317.07 usft	<b>Latitude:</b>	36.108414°N
	<b>+E/-W</b>	38.9 usft	<b>Easting:</b>	1,254,778.31 usft	<b>Longitude:</b>	107.555545°W
<b>Position Uncertainty</b>		0.0 usft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	6,749.0 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	12/31/2009	9.89	63.00	50,570.92267170

<b>Design</b>	Design #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	258.82

<b>Plan Survey Tool Program</b>	<b>Date</b>	3/5/2020		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.0	13,195.0	Design #1 (Wellbore #1)	MWD OWSG MWD - Standard

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
350.0	0.00	0.00	350.0	0.0	0.0	0.00	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,457.5	28.72	147.80	1,417.9	-198.9	125.2	3.00	3.00	0.00	147.80	
4,287.9	28.72	147.80	3,900.0	-1,350.0	850.0	0.00	0.00	0.00	0.00	1-347H KOP
5,413.9	86.25	269.95	4,632.6	-1,666.8	273.3	9.01	5.11	10.85	120.47	
5,462.6	90.41	271.35	4,634.0	-1,666.2	224.6	9.00	8.53	2.87	18.63	2-347H POE
13,195.0	90.41	271.35	4,579.0	-1,483.5	-7,505.4	0.00	0.00	0.00	0.00	3-347H BHL



Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well 347H
<b>Company:</b>	Enduring Resources LLC	<b>TVD Reference:</b>	KB @ 6774.0usft (Original Well Elev)
<b>Project:</b>	San Juan Basin - S Escavada Unit & Terra Wash CA	<b>MD Reference:</b>	KB @ 6774.0usft (Original Well Elev)
<b>Site:</b>	350H Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	347H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00	
350.0	0.00	0.00	350.0	0.0	0.0	0.0	0.00	0.00	0.00	
<b>13 3/8"</b>										
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00	
484.0	0.00	0.00	484.0	0.0	0.0	0.0	0.00	0.00	0.00	
<b>Ojo Alamo</b>										
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00	
594.0	2.82	147.80	594.0	-2.0	1.2	-0.8	3.00	3.00	0.00	
<b>Kirtland</b>										
600.0	3.00	147.80	600.0	-2.2	1.4	-0.9	3.00	3.00	0.00	
700.0	6.00	147.80	699.6	-8.9	5.6	-3.8	3.00	3.00	0.00	
719.5	6.58	147.80	719.0	-10.7	6.7	-4.5	3.00	3.00	0.00	
<b>Fruitland</b>										
800.0	9.00	147.80	798.8	-19.9	12.5	-8.4	3.00	3.00	0.00	
900.0	12.00	147.80	897.1	-35.3	22.2	-15.0	3.00	3.00	0.00	
1,000.0	15.00	147.80	994.3	-55.1	34.7	-23.3	3.00	3.00	0.00	
1,077.8	17.33	147.80	1,069.0	-73.4	46.2	-31.1	3.00	3.00	0.00	
<b>Pictured Cliffs</b>										
1,100.0	18.00	147.80	1,090.2	-79.1	49.8	-33.5	3.00	3.00	0.00	
1,178.2	20.34	147.80	1,164.0	-100.8	63.5	-42.7	3.00	3.00	0.00	
<b>Lewis</b>										
1,200.0	21.00	147.80	1,184.4	-107.3	67.6	-45.5	3.00	3.00	0.00	
1,300.0	24.00	147.80	1,276.8	-139.7	88.0	-59.2	3.00	3.00	0.00	
1,400.0	27.00	147.80	1,367.1	-176.2	110.9	-74.6	3.00	3.00	0.00	
1,457.5	28.72	147.80	1,417.9	-198.9	125.2	-84.3	3.00	3.00	0.00	
1,481.6	28.72	147.80	1,439.0	-208.7	131.4	-88.4	0.00	0.00	0.00	
<b>Chacra</b>										
1,500.0	28.72	147.80	1,455.2	-216.2	136.1	-91.6	0.00	0.00	0.00	
1,600.0	28.72	147.80	1,542.9	-256.8	161.7	-108.8	0.00	0.00	0.00	
1,700.0	28.72	147.80	1,630.5	-297.5	187.3	-126.1	0.00	0.00	0.00	
1,800.0	28.72	147.80	1,718.2	-338.2	212.9	-143.3	0.00	0.00	0.00	
1,900.0	28.72	147.80	1,805.9	-378.9	238.5	-160.5	0.00	0.00	0.00	
2,000.0	28.72	147.80	1,893.6	-419.5	264.1	-177.8	0.00	0.00	0.00	
2,100.0	28.72	147.80	1,981.3	-460.2	289.8	-195.0	0.00	0.00	0.00	
2,200.0	28.72	147.80	2,069.0	-500.9	315.4	-212.2	0.00	0.00	0.00	
2,300.0	28.72	147.80	2,156.7	-541.5	341.0	-229.5	0.00	0.00	0.00	
2,400.0	28.72	147.80	2,244.4	-582.2	366.6	-246.7	0.00	0.00	0.00	
2,500.0	28.72	147.80	2,332.1	-622.9	392.2	-264.0	0.00	0.00	0.00	
2,600.0	28.72	147.80	2,419.8	-663.5	417.8	-281.2	0.00	0.00	0.00	
2,673.2	28.72	147.80	2,484.0	-693.3	436.5	-293.8	0.00	0.00	0.00	
<b>Cliff House</b>										
2,696.0	28.72	147.80	2,504.0	-702.6	442.4	-297.7	0.00	0.00	0.00	
<b>Menefee</b>										
2,700.0	28.72	147.80	2,507.5	-704.2	443.4	-298.4	0.00	0.00	0.00	
2,800.0	28.72	147.80	2,595.2	-744.9	469.0	-315.7	0.00	0.00	0.00	
2,810.0	28.72	147.80	2,604.0	-749.0	471.6	-317.4	0.00	0.00	0.00	
<b>9 5/8"</b>										
2,900.0	28.72	147.80	2,682.9	-785.5	494.6	-332.9	0.00	0.00	0.00	
3,000.0	28.72	147.80	2,770.6	-826.2	520.2	-350.1	0.00	0.00	0.00	



Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well 347H
<b>Company:</b>	Enduring Resources LLC	<b>TVD Reference:</b>	KB @ 6774.0usft (Original Well Elev)
<b>Project:</b>	San Juan Basin - S Escavada Unit & Terra Wash CA	<b>MD Reference:</b>	KB @ 6774.0usft (Original Well Elev)
<b>Site:</b>	350H Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	347H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
3,100.0	28.72	147.80	2,858.3	-866.9	545.8	-367.4	0.00	0.00	0.00	
3,200.0	28.72	147.80	2,946.0	-907.6	571.4	-384.6	0.00	0.00	0.00	
3,300.0	28.72	147.80	3,033.7	-948.2	597.0	-401.8	0.00	0.00	0.00	
3,400.0	28.72	147.80	3,121.4	-988.9	622.6	-419.1	0.00	0.00	0.00	
3,500.0	28.72	147.80	3,209.0	-1,029.6	648.2	-436.3	0.00	0.00	0.00	
3,600.0	28.72	147.80	3,296.7	-1,070.2	673.9	-453.5	0.00	0.00	0.00	
3,700.0	28.72	147.80	3,384.4	-1,110.9	699.5	-470.8	0.00	0.00	0.00	
3,767.9	28.72	147.80	3,444.0	-1,138.5	716.8	-482.5	0.00	0.00	0.00	
<b>Point Lookout</b>										
3,800.0	28.72	147.80	3,472.1	-1,151.6	725.1	-488.0	0.00	0.00	0.00	
3,900.0	28.72	147.80	3,559.8	-1,192.2	750.7	-505.2	0.00	0.00	0.00	
3,967.5	28.72	147.80	3,619.0	-1,219.7	767.9	-516.9	0.00	0.00	0.00	
<b>Mancos</b>										
4,000.0	28.72	147.80	3,647.5	-1,232.9	776.3	-522.5	0.00	0.00	0.00	
4,100.0	28.72	147.80	3,735.2	-1,273.6	801.9	-539.7	0.00	0.00	0.00	
4,200.0	28.72	147.80	3,822.9	-1,314.2	827.5	-556.9	0.00	0.00	0.00	
4,281.1	28.72	147.80	3,894.0	-1,347.2	848.2	-570.9	0.00	0.00	0.00	
<b>Gallup (MNCS A)</b>										
4,287.9	28.72	147.80	3,900.0	-1,350.0	850.0	-572.1	0.00	0.00	0.00	
4,300.0	28.19	149.79	3,910.6	-1,354.9	853.0	-574.1	9.01	-4.45	16.44	
4,400.0	25.03	168.73	4,000.2	-1,396.2	869.0	-581.8	9.01	-3.16	18.93	
4,404.2	24.96	169.60	4,004.0	-1,397.9	869.4	-581.8	9.01	-1.77	20.90	
<b>MNCS_B</b>										
4,500.0	24.71	190.23	4,091.1	-1,437.6	869.5	-574.2	9.01	-0.25	21.53	
4,508.7	24.83	192.08	4,099.0	-1,441.1	868.8	-572.8	9.01	1.35	21.25	
<b>MNCS_C</b>										
4,541.8	25.48	198.93	4,129.0	-1,454.7	865.0	-566.5	9.01	1.96	20.69	
<b>MNCS_Cms</b>										
4,600.0	27.33	209.97	4,181.1	-1,478.1	854.2	-551.4	9.01	3.19	18.97	
4,700.0	32.18	225.35	4,268.0	-1,516.8	823.8	-514.0	9.01	4.85	15.37	
4,707.1	32.58	226.26	4,274.0	-1,519.4	821.1	-510.8	9.01	5.71	13.01	
<b>MNCS_D</b>										
4,800.0	38.42	236.64	4,349.7	-1,552.7	778.8	-462.9	9.01	6.27	11.17	
4,885.7	44.42	244.00	4,414.0	-1,580.5	729.5	-409.2	9.01	7.01	8.57	
<b>MNCS_E</b>										
4,900.0	45.46	245.06	4,424.1	-1,584.9	720.4	-399.4	9.01	7.30	7.48	
4,943.9	48.73	248.12	4,454.0	-1,597.6	690.9	-368.0	9.01	7.43	6.96	
<b>MNCS_F</b>										
5,000.0	52.99	251.60	4,489.4	-1,612.5	650.0	-325.0	9.01	7.61	6.21	
5,070.4	58.48	255.45	4,529.0	-1,629.0	594.3	-267.2	9.01	7.79	5.47	
<b>MNCS_G</b>										
5,100.0	60.82	256.94	4,544.0	-1,635.1	569.5	-241.6	9.01	7.90	5.01	
5,193.1	68.27	261.21	4,584.0	-1,650.9	487.0	-157.6	9.01	8.00	4.59	
<b>MNCS_H</b>										
5,200.0	68.82	261.51	4,586.5	-1,651.8	480.6	-151.2	9.01	8.07	4.31	
5,300.0	76.94	265.60	4,615.9	-1,662.5	385.8	-56.1	9.01	8.11	4.09	
5,400.0	85.11	269.43	4,631.5	-1,666.7	287.2	41.5	9.01	8.17	3.83	
5,413.9	86.25	269.95	4,632.6	-1,666.8	273.3	55.1	9.01	8.19	3.75	
5,462.6	90.41	271.35	4,634.0	-1,666.2	224.6	102.7	9.00	8.53	2.87	
5,500.0	90.41	271.35	4,633.7	-1,665.4	187.3	139.2	0.00	0.00	0.00	
5,600.0	90.41	271.35	4,633.0	-1,663.0	87.3	236.8	0.00	0.00	0.00	
5,700.0	90.41	271.35	4,632.3	-1,660.6	-12.7	334.4	0.00	0.00	0.00	



Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well 347H
<b>Company:</b>	Enduring Resources LLC	<b>TVD Reference:</b>	KB @ 6774.0usft (Original Well Elev)
<b>Project:</b>	San Juan Basin - S Escavada Unit & Terra Wash CA	<b>MD Reference:</b>	KB @ 6774.0usft (Original Well Elev)
<b>Site:</b>	350H Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	347H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,800.0	90.41	271.35	4,631.6	-1,658.3	-112.6	432.0	0.00	0.00	0.00	
5,900.0	90.41	271.35	4,630.9	-1,655.9	-212.6	529.7	0.00	0.00	0.00	
6,000.0	90.41	271.35	4,630.2	-1,653.5	-312.6	627.3	0.00	0.00	0.00	
6,100.0	90.41	271.35	4,629.5	-1,651.2	-412.5	724.9	0.00	0.00	0.00	
6,200.0	90.41	271.35	4,628.8	-1,648.8	-512.5	822.5	0.00	0.00	0.00	
6,300.0	90.41	271.35	4,628.0	-1,646.5	-612.5	920.1	0.00	0.00	0.00	
6,400.0	90.41	271.35	4,627.3	-1,644.1	-712.4	1,017.7	0.00	0.00	0.00	
6,500.0	90.41	271.35	4,626.6	-1,641.7	-812.4	1,115.3	0.00	0.00	0.00	
6,600.0	90.41	271.35	4,625.9	-1,639.4	-912.4	1,213.0	0.00	0.00	0.00	
6,700.0	90.41	271.35	4,625.2	-1,637.0	-1,012.4	1,310.6	0.00	0.00	0.00	
6,800.0	90.41	271.35	4,624.5	-1,634.6	-1,112.3	1,408.2	0.00	0.00	0.00	
6,900.0	90.41	271.35	4,623.8	-1,632.3	-1,212.3	1,505.8	0.00	0.00	0.00	
7,000.0	90.41	271.35	4,623.1	-1,629.9	-1,312.3	1,603.4	0.00	0.00	0.00	
7,100.0	90.41	271.35	4,622.4	-1,627.5	-1,412.2	1,701.0	0.00	0.00	0.00	
7,200.0	90.41	271.35	4,621.6	-1,625.2	-1,512.2	1,798.6	0.00	0.00	0.00	
7,300.0	90.41	271.35	4,620.9	-1,622.8	-1,612.2	1,896.3	0.00	0.00	0.00	
7,400.0	90.41	271.35	4,620.2	-1,620.5	-1,712.1	1,993.9	0.00	0.00	0.00	
7,500.0	90.41	271.35	4,619.5	-1,618.1	-1,812.1	2,091.5	0.00	0.00	0.00	
7,600.0	90.41	271.35	4,618.8	-1,615.7	-1,912.1	2,189.1	0.00	0.00	0.00	
7,700.0	90.41	271.35	4,618.1	-1,613.4	-2,012.0	2,286.7	0.00	0.00	0.00	
7,800.0	90.41	271.35	4,617.4	-1,611.0	-2,112.0	2,384.3	0.00	0.00	0.00	
7,900.0	90.41	271.35	4,616.7	-1,608.6	-2,212.0	2,481.9	0.00	0.00	0.00	
8,000.0	90.41	271.35	4,616.0	-1,606.3	-2,312.0	2,579.5	0.00	0.00	0.00	
8,100.0	90.41	271.35	4,615.2	-1,603.9	-2,411.9	2,677.2	0.00	0.00	0.00	
8,200.0	90.41	271.35	4,614.5	-1,601.6	-2,511.9	2,774.8	0.00	0.00	0.00	
8,300.0	90.41	271.35	4,613.8	-1,599.2	-2,611.9	2,872.4	0.00	0.00	0.00	
8,400.0	90.41	271.35	4,613.1	-1,596.8	-2,711.8	2,970.0	0.00	0.00	0.00	
8,500.0	90.41	271.35	4,612.4	-1,594.5	-2,811.8	3,067.6	0.00	0.00	0.00	
8,600.0	90.41	271.35	4,611.7	-1,592.1	-2,911.8	3,165.2	0.00	0.00	0.00	
8,700.0	90.41	271.35	4,611.0	-1,589.7	-3,011.7	3,262.8	0.00	0.00	0.00	
8,800.0	90.41	271.35	4,610.3	-1,587.4	-3,111.7	3,360.5	0.00	0.00	0.00	
8,900.0	90.41	271.35	4,609.6	-1,585.0	-3,211.7	3,458.1	0.00	0.00	0.00	
9,000.0	90.41	271.35	4,608.8	-1,582.7	-3,311.7	3,555.7	0.00	0.00	0.00	
9,100.0	90.41	271.35	4,608.1	-1,580.3	-3,411.6	3,653.3	0.00	0.00	0.00	
9,200.0	90.41	271.35	4,607.4	-1,577.9	-3,511.6	3,750.9	0.00	0.00	0.00	
9,300.0	90.41	271.35	4,606.7	-1,575.6	-3,611.6	3,848.5	0.00	0.00	0.00	
9,400.0	90.41	271.35	4,606.0	-1,573.2	-3,711.5	3,946.1	0.00	0.00	0.00	
9,500.0	90.41	271.35	4,605.3	-1,570.8	-3,811.5	4,043.8	0.00	0.00	0.00	
9,600.0	90.41	271.35	4,604.6	-1,568.5	-3,911.5	4,141.4	0.00	0.00	0.00	
9,700.0	90.41	271.35	4,603.9	-1,566.1	-4,011.4	4,239.0	0.00	0.00	0.00	
9,800.0	90.41	271.35	4,603.1	-1,563.8	-4,111.4	4,336.6	0.00	0.00	0.00	
9,900.0	90.41	271.35	4,602.4	-1,561.4	-4,211.4	4,434.2	0.00	0.00	0.00	
10,000.0	90.41	271.35	4,601.7	-1,559.0	-4,311.3	4,531.8	0.00	0.00	0.00	
10,100.0	90.41	271.35	4,601.0	-1,556.7	-4,411.3	4,629.4	0.00	0.00	0.00	
10,200.0	90.41	271.35	4,600.3	-1,554.3	-4,511.3	4,727.1	0.00	0.00	0.00	
10,300.0	90.41	271.35	4,599.6	-1,551.9	-4,611.3	4,824.7	0.00	0.00	0.00	
10,400.0	90.41	271.35	4,598.9	-1,549.6	-4,711.2	4,922.3	0.00	0.00	0.00	
10,500.0	90.41	271.35	4,598.2	-1,547.2	-4,811.2	5,019.9	0.00	0.00	0.00	
10,600.0	90.41	271.35	4,597.5	-1,544.9	-4,911.2	5,117.5	0.00	0.00	0.00	
10,700.0	90.41	271.35	4,596.7	-1,542.5	-5,011.1	5,215.1	0.00	0.00	0.00	
10,800.0	90.41	271.35	4,596.0	-1,540.1	-5,111.1	5,312.7	0.00	0.00	0.00	
10,900.0	90.41	271.35	4,595.3	-1,537.8	-5,211.1	5,410.4	0.00	0.00	0.00	
11,000.0	90.41	271.35	4,594.6	-1,535.4	-5,311.0	5,508.0	0.00	0.00	0.00	



Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well 347H
<b>Company:</b>	Enduring Resources LLC	<b>TVD Reference:</b>	KB @ 6774.0usft (Original Well Elev)
<b>Project:</b>	San Juan Basin - S Escavada Unit & Terra Wash CA	<b>MD Reference:</b>	KB @ 6774.0usft (Original Well Elev)
<b>Site:</b>	350H Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	347H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
11,100.0	90.41	271.35	4,593.9	-1,533.0	-5,411.0	5,605.6	0.00	0.00	0.00	
11,200.0	90.41	271.35	4,593.2	-1,530.7	-5,511.0	5,703.2	0.00	0.00	0.00	
11,300.0	90.41	271.35	4,592.5	-1,528.3	-5,611.0	5,800.8	0.00	0.00	0.00	
11,400.0	90.41	271.35	4,591.8	-1,525.9	-5,710.9	5,898.4	0.00	0.00	0.00	
11,500.0	90.41	271.35	4,591.1	-1,523.6	-5,810.9	5,996.0	0.00	0.00	0.00	
11,600.0	90.41	271.35	4,590.3	-1,521.2	-5,910.9	6,093.6	0.00	0.00	0.00	
11,700.0	90.41	271.35	4,589.6	-1,518.9	-6,010.8	6,191.3	0.00	0.00	0.00	
11,800.0	90.41	271.35	4,588.9	-1,516.5	-6,110.8	6,288.9	0.00	0.00	0.00	
11,900.0	90.41	271.35	4,588.2	-1,514.1	-6,210.8	6,386.5	0.00	0.00	0.00	
12,000.0	90.41	271.35	4,587.5	-1,511.8	-6,310.7	6,484.1	0.00	0.00	0.00	
12,100.0	90.41	271.35	4,586.8	-1,509.4	-6,410.7	6,581.7	0.00	0.00	0.00	
12,200.0	90.41	271.35	4,586.1	-1,507.0	-6,510.7	6,679.3	0.00	0.00	0.00	
12,300.0	90.41	271.35	4,585.4	-1,504.7	-6,610.6	6,776.9	0.00	0.00	0.00	
12,400.0	90.41	271.35	4,584.7	-1,502.3	-6,710.6	6,874.6	0.00	0.00	0.00	
12,500.0	90.41	271.35	4,583.9	-1,500.0	-6,810.6	6,972.2	0.00	0.00	0.00	
12,600.0	90.41	271.35	4,583.2	-1,497.6	-6,910.6	7,069.8	0.00	0.00	0.00	
12,700.0	90.41	271.35	4,582.5	-1,495.2	-7,010.5	7,167.4	0.00	0.00	0.00	
12,800.0	90.41	271.35	4,581.8	-1,492.9	-7,110.5	7,265.0	0.00	0.00	0.00	
12,900.0	90.41	271.35	4,581.1	-1,490.5	-7,210.5	7,362.6	0.00	0.00	0.00	
13,000.0	90.41	271.35	4,580.4	-1,488.1	-7,310.4	7,460.2	0.00	0.00	0.00	
13,100.0	90.41	271.35	4,579.7	-1,485.8	-7,410.4	7,557.9	0.00	0.00	0.00	
13,195.0	90.41	271.35	4,579.0	-1,483.5	-7,505.4	7,650.6	0.00	0.00	0.00	

Design Targets										
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
1-347H KOP - plan hits target center - Point	0.00	360.00	3,900.0	-1,350.0	850.0	1,859,967.07	1,255,628.31	36.104738°N	107.552607°W	
3-347H BHL - plan hits target center - Point	0.00	360.00	4,579.0	-1,483.5	-7,505.4	1,859,833.53	1,247,272.92	36.104060°N	107.580879°W	
2-347H POE - plan hits target center - Point	0.00	0.00	4,634.0	-1,666.2	224.6	1,859,650.83	1,255,002.95	36.103846°N	107.554709°W	

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
350.0	350.0	13 3/8"	13-3/8	17-1/2	
2,810.0	2,604.0	9 5/8"	9-5/8	12-1/4	



Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well 347H
<b>Company:</b>	Enduring Resources LLC	<b>TVD Reference:</b>	KB @ 6774.0usft (Original Well Elev)
<b>Project:</b>	San Juan Basin - S Escavada Unit & Terra Wash CA	<b>MD Reference:</b>	KB @ 6774.0usft (Original Well Elev)
<b>Site:</b>	350H Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	347H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
484.0	484.0	Ojo Alamo		0.00		
594.0	594.0	Kirtland		0.00		
719.5	719.0	Fruitland		0.00		
1,077.8	1,069.0	Pictured Cliffs		0.00		
1,178.2	1,164.0	Lewis		0.00		
1,481.6	1,439.0	Chacra		0.00		
2,673.2	2,484.0	Cliff House		0.00		
2,696.0	2,504.0	Menefee		0.00		
3,767.9	3,444.0	Point Lookout		0.00		
3,967.5	3,619.0	Mancos		0.00		
4,281.1	3,894.0	Gallup (MNCS A)		0.00		
4,404.2	4,004.0	MNCS_B		0.00		
4,508.7	4,099.0	MNCS_C		0.00		
4,541.8	4,129.0	MNCS_Cms		0.00		
4,707.1	4,274.0	MNCS_D		0.00		
4,885.7	4,414.0	MNCS_E		0.00		
4,943.9	4,454.0	MNCS_F		0.00		
5,070.4	4,529.0	MNCS_G		0.00		
5,193.1	4,584.0	MNCS_H		0.00		

## Conditions of Approval

Operator: Enduring Resources

Well Names: South Escavada Unit 347H (350H pad)

Legal Location: Sec 21, 22 and 27, T22N, R07W, Sandoval County, NM

NEPA Log Number: DOI-BLM-NM-F010-2018-0023-CX

Inspection Date: November 15, 2017

Lease Number: N0G13121826

The following conditions of approval will apply to Enduring Resources South Escavada Unit 350H well pad, access road and other associated facilities, unless a particular Surface Managing Agency or private surface owner has supplied to Bureau of Land Management and the operator a contradictory environmental stipulation. The failure of the operator to comply with these requirements may result in an assessment or civil penalties pursuant to 43 CFR 3163.1 or 3163.2.

**Disclaimers:** BLM's approval of the APD does not relieve the lessee and operator from obtaining any other authorizations that may be required by the BIA, Navajo Tribe, State or other jurisdictional entities.

**Copy of Plans:** A complete copy of the APD package, including: Surface Use Plan of Operations, Bare Soil Reclamation Plan, Plan of Development (if required), Conditions of Approval, Cultural Resource Record of Review, Cultural Resources Compliance Form (if required), and Project Stipulations (if required) shall be at the project area at all times and available to all persons.

**Review of NEPA documents:** It is the responsibility of the operator to follow all the design features, best management practices, and mitigation measures as contained in Categorical Exclusion DOI-BLM-NM-F010-2018-0023-CX. Copies of the CX and Decision Record may be obtained from the BLM FFO public room, or online at: <https://go.usa.gov/xQRqn>. The CX is tiered to the South Escavada Unit Master Development Plan Environmental Assessment DOI-BLM-NM-F010-2017-0126-EA, which contains additional design features and best management practices that must be followed. Copies of the EA, Decision Record, and Finding of No Significant Impact may be obtained from the BLM FFO public room, or online at: <https://go.usa.gov/xnbPU>.

**Best Management Practices (BMPs):** Farmington Field Office established environmental Best Management Practices (BMP's) will be followed during construction and reclamation of well site pads, access roads, pipeline ties, facility placement or any other surface disturbing activity associated with this project. Bureau wide standard BMP's are found in the Gold Book, Fourth Edition-Revised 2007 and at [http://www.blm.gov/wo/st/en/prog/energy/oil\\_and\\_gas/best\\_management\\_practices.html](http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/best_management_practices.html). Farmington Field Office BMP's are integrated into the Environmental Assessment, Surface Use Plan of Operations, Bare Soil Reclamation Plan, and COAs.

### **Construction, Production, Facilities, Reclamation & Maintenance**

**Construction & Reclamation Notification:** The operator or their contractor will contact the Bureau of Land Management Farmington Field Office Environmental Protection Specialist Randy McKee at (505) 564-7708, or by email, at least 48 hours prior to any construction or reclamation on this project.

**Production Facilities:** design and layout of facilities will be deferred until an onsite with BLM-FFO surface protection staff is conducted to determine the best location. Enduring or their contractor will contact the Bureau of Land Management Farmington Field Office Surface and Environmental Protection Staff to

schedule a facility layout onsite. Facilities and other equipment on location are to be painted **Covert Green**.

**Staking:** The holder shall place slope stakes, culvert location and grade stakes, and other construction control stakes as deemed necessary by the authorized officer to ensure construction in accordance with the plan of development. If stakes are disturbed, they shall be replaced before proceeding with construction.

**Weather:** No construction or routine maintenance activities shall be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts in excess of 6 inches deep, the soil shall be deemed too wet.

**Stockpile of Soil:** The top 6 inches of soil material will be stripped and stockpiled in the construction zones around the pad [construction zones may be restricted or deleted to provide resource avoidance]. The stockpiled soil will be free of brush and tree limbs, trunks and roots. The stockpiled soil material will be spread on the reclaimed portions of the pad [including the reserve pit, cut and fill slopes] prior to re-seeding. Spreading shall not be done when the ground or topsoil is frozen or wet.

**Storage Tanks:** All open top permanent production or storage tanks regardless of diameter made of fiberglass, steel, or other material used for the containment of oil, condensate, produced water and or other production waste shall be screened, netted or otherwise covered to protect migratory birds and other wildlife from access.

**Compressors:** Compressor units on this well location not equipped with a drip pan for containment of fluids shall be lined with an impervious material at least 8 mils thick and a 12 inch berm. The compressor will be painted to match the well facilities. Any variance to this will be approved by the Authorized Officer (AO). Noise mitigation may be required at the time of compressor installation.

**Culverts:** Silt Traps/Bell Holes will be built upstream of all culvert locations.

**Driving Surface Area:** All activities associated within the construction, operation, maintenance, and abandonment of the well location is limited to areas approved in the APD or ROW permit. During the production of the well, vehicular traffic is limited to the daily driving surface area established during interim reclamation construction operations. This area typically forms a keyhole or teardrop driving surface from which all production facilities may be serviced or inspected. A v-type ditch will be constructed on the outside of the driving surface to further define the driving surface and to deter vehicular traffic from entering onto the interim reclamation areas.

**Contouring of Cut and Fill Slopes:** The interim cut and fill slope grade shall be as close to the original contour as possible. To obtain this ratio, pits and slopes shall be back sloped into the pad during interim reclamation. Only subsurface soil and material shall be utilized in the contouring of the cut and fill slopes. Under no circumstances shall topsoil be utilized as substrate material for contouring of cut and fill slopes.

**Maintenance:** In order to perform subsequent well operations, right-of-way (ROW) operations, or install new/additional equipment, it may be necessary to drive, park, and operate on restored, interim vegetation within the previously disturbed area. This is generally acceptable provided damage is promptly repaired and reclaimed following use. Where vehicular travel has occurred as a "convenience" and interim reclamation/vegetation has been compromised, immediate remediation of the affected areas is required. Additionally, where erosion has occurred and compromised the reclamation of the well location, the affected area must be promptly remediated so that future erosion is prevented and the landform is stabilized.

## **Cultural Resources**

**Non-Permitted Disturbance:** Construction, construction maintenance or any other activity outside the areas permitted by the APD will require additional approval and may require a new cultural survey and clearance.

**Employee Education:** All employees of the project, including the Project Sponsor and its contractors and sub-contractors will be informed that cultural sites are to be avoided by all personnel, personal vehicles and company equipment. This includes all personnel associated with construction, use, maintenance and abandonment of the well pad, well facilities, access and pipeline. They will also be notified that it is illegal to collect, damage, or disturb cultural resources, and that such activities are punishable by criminal and or administrative penalties under the provisions of the Archaeological Resources Protection Act (16U.S.C. 470aa-mm).

**Discovery of Cultural Resources in the Absence of Monitoring:** If, in its operations, operator/holder discovers any previously unidentified historic or prehistoric cultural resources, then work in the vicinity of the discovery will be suspended and the discovery promptly reported to Bureau of Land Management Field Manager. The Bureau of Land Management will then specify what action is to be taken. If there is an approved "discovery plan" in place for the project, then the plan will be executed. In the absence of an approved plan, the Bureau Land Management will evaluate the significance of discovery and consult with the State Historic Preservation Officer in accordance with 36 CFR Section 800.11. Minor recordation, stabilization, or data recovery may be performed by a Bureau of Land Management or permitted cultural resources consultant. If warranted, more extensive treatment by a permitted cultural resources consultant may be required of the operator/holder prior to allowing the project to proceed. Further damage to significant cultural resources will not be allowed until any required treatment is completed. Failure to notify the Bureau of Land Management about a discovery may result in civil or criminal penalties in accordance with the Archeological Resources Protection Act of 1979 (as amended).

**Discovery of Cultural Resources during Monitoring:** If monitoring confirms the presence of previously unidentified cultural resources, then work in the vicinity of the discovery will be suspended and the monitor will promptly report the discovery to the Bureau of Land Management Field Manager. The Bureau of Land Management will then specify what action is to be taken. If there is an approved "discovery plan" in place for the project, then the plan will be executed. In the absence of an approved plan, the Bureau of Land Management will evaluate the significance of the discovery and consult with the State Historic Preservation Officer in accordance with 36 CFR Section 800.11. A Bureau of Land Management or permitted cultural resources consultant may perform minor recordation, stabilization, or data recovery. If warranted, more extensive treatment by a permitted cultural resources consultant may be required of the operator/holder prior to allowing the project to proceed. Further damage to significant cultural resources will not be allowed until any required treatment is completed.

**Damage to Sites:** If, in its operations, operator/holder damages, or is found to have damaged any previously documented or undocumented historic or prehistoric cultural resources, excluding "discoveries" as noted above, the operator/holder agrees at his/her expense to have a permitted cultural resources consultant prepare and have executed a Bureau of Land Management approved data recovery plan. Damage to cultural resources may result in civil or criminal penalties in accordance with the Archeological Resources Protection Act of 1979 (as amended).

## **Noxious Weeds**

Inventory the proposed site for the presence of noxious and invasive weeds. Noxious weeds are those listed on the New Mexico Noxious Weed List and USDA's Federal Noxious Weed List. The New Mexico

Noxious Weed List or USDA's Noxious Weed List can be updated at any time and should be regularly check for any changes. Invasive species may or may not be listed as a noxious weed, but have been identified to likely cause economic or environmental harm or harm to human health. The following noxious weeds have been identified as occurring on lands within the boundaries of the Farmington Field Office (FFO). There are numerous invasive species on the FFO such as Russian thistle (*Salsola spp.*) and field bindweed (*Convolvulus arvensis*).

Russian Knapweed ( <i>Centaurea repens</i> )	Musk Thistle ( <i>Carduss nutans</i> )
Bull Thistle ( <i>Cirsium vulgare</i> )	Canada Thistle ( <i>Cirsium arvense</i> )
Scotch Thistle ( <i>Onopordum acanthium</i> )	Hoary Cress ( <i>Cardaria draba</i> )
Perennial Pepperweed ( <i>Lepidium latifolium</i> )	Halogeton ( <i>Halogeton glomeratus</i> )
Spotted Knapweed ( <i>Centaurea maculosa</i> )	Dalmation Toadflax ( <i>Linaria genistifolia</i> )
Yellow Toadflax ( <i>Linaria vulgaris</i> )	Camelthorn ( <i>Alhagi pseudalhagi</i> )
African Rue ( <i>Penganum harmala</i> )	Salt Cedar ( <i>Tamarix spp.</i> )
Diffuse Knapweed ( <i>Centaurea diffusa</i> )	Leafy Spurge ( <i>Euphorbia esula</i> )

- a. Identified weeds will be treated prior to new surface disturbance if determined by the FFO Noxious Weed Coordinator. A Pesticide Use Proposal (PUP) must be submitted to and approved by the FFO Noxious Weed Coordinator prior to application of pesticide. The FFO Noxious Weeds Coordinator (505-564-7600) can provide assistance in the development of the PUP.
- b. Vehicles and equipment should be inspected and cleaned prior to coming onto the work site. This is especially important on vehicles from out of state or if coming from a weed-infested site.
- c. Fill dirt or gravel may be needed for excavation, road construction/repair, or for spill remediation. If fill dirt or gravel will be required, the source shall be noxious weed free and approved by the FFO Noxious Weed Coordinator.
- d. The site shall be monitored for the life of the project for the presence of noxious weeds (includes maintenance and construction activities). If weeds are found the FFO Coordinator shall be notified at (505) 564-7600 and provided with a Weed Management Plan and if necessary, a Pesticide Use Proposal (PUP). The FFO Coordinataor can provide assistance developing the Weed Management Plan and/or the Pesticide Use Proposal.
- e. Only pesticides authorized for use on BLM lands would be used and applied by a licensed pesticide applicator. The use of pesticides would comply with federal and state laws and used only in accordance with their registered use and limitations. Enduring's weed-control contractor would contact the BLM-FFO prior to using these chemicals.
- f. Noxious/invasive weed treatments must be reported to the FFO Noxious Weed Coordinator. A Pesticide Use Report (PUR) is required to report any mechanical, chemical, biological or cultural treatments used to eradicate, and/or control noxious or invasive species. Reporting will be required quarterly and annually or per request from the FFO Noxious Weed Coordinator.

**Bare ground vegetation trim-out:** If bare ground vegetation treatment (trim-out) is desired around facility structures, the operator will submit a bare ground/trim-out design included in their Surface Use Plan of Operations (SUPO). The design will address vegetation safety concerns of the operator and BLM while minimizing impacts to interim reclamation efforts. The design must include what structures to be treated

and buffer distances of trim-out. Pesticide use for vegetation control around anchor structures is not approved. If pesticides are used for bare ground trim-out, the trim-out will not exceed three feet from the edge of any eligible permanent structure (i.e. well heads, fences, tanks). Additional distance/areas may be requested and must be approved by the FFO authorized officer. The additional information below must also be provided to the FFO:

- a. Pesticide use for trim out will require a Pesticide Use Proposal (PUP). A PUP is required **prior** to any treatment and must be approved by the FFO Noxious Weed Coordinator. Only pesticides authorized for use on BLM lands would be used and applied by a licensed pesticide applicator. The use of pesticides would comply with federal and state laws and used only in accordance with their registered use and limitations. Enduring's weed-control contractor would contact the BLM-FFO prior to using these chemicals and provide Pesticide Use Reports (PURs) post treatment.
- b. A Pesticide Use Report (PUR) or a Biological Use Report (BUR) is required to report any chemical, or biological treatments used to eradicate, or control vegetation on site. Reporting will be required quarterly and annually or per request from the FFO Noxious Weed Coordinator.

### **Paleontology**

Any paleontological resource discovered by the Operator, 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 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.

### **Wildlife**

**Migratory Bird:** The BLM/FFO migratory bird policy requires a bird nest survey between May 15-July 31 for any projects that would remove 4.0 or more acres or vegetation.

**Threatened, Endangered or Sensitive Species:** If, in operations the operator/holder discovers any Threatened, Endangered, or Sensitive species, work in the vicinity of the discovery will be suspended and the discovery promptly reported to the BLM-FFO T&E specialist at (505) 564-7600. The BLM-FFO will then specify what action is to be taken. Failure to notify the BLM-FFO about a discovery may result in civil or criminal penalties in accordance with The Endangered Species Act (as amended).

**Nesting:** If a bird nest containing eggs or young is encountered in the path of construction the operator will cease construction and consult with BLM to determine appropriate actions.

**Raptors:** No construction, drilling, or completion activities shall be conducted within one third of a mile of active or historic raptor nest sites between the following time periods. Exceptions may be considered on a case by case basis and would require written approval from the BLM FFO biologist after determining that project activities would not impact nesting activities. Biological monitoring may be required to document nesting behavior if project activities are allowed to occur within these time periods.

- Golden Eagle - February 1 to June 30
- Ferruginous Hawk, Prairie Falcon - March 1 to June 30
- Peregrine falcon - Mitigation for nest sites will be determined on a site specific basis using the principle of designating sensitive zones in which disturbance is seasonally restricted as delineated in Johnson (1994).

**Hazards:** Wildlife hazards associated with the proposed project would be fenced, covered, and/or contained in storage tanks, as necessary.

**Soil, Air, Water**

**Land Farming:** No excavation, remediation or closure activities will be authorized without prior approval, on any federal or Indian mineral estate, federal surface or federal ROW. A Sundry Notice (DOI, BLM Form 3160-5) must be submitted with an explanation of the remediation or closure plan for on-lease actions.

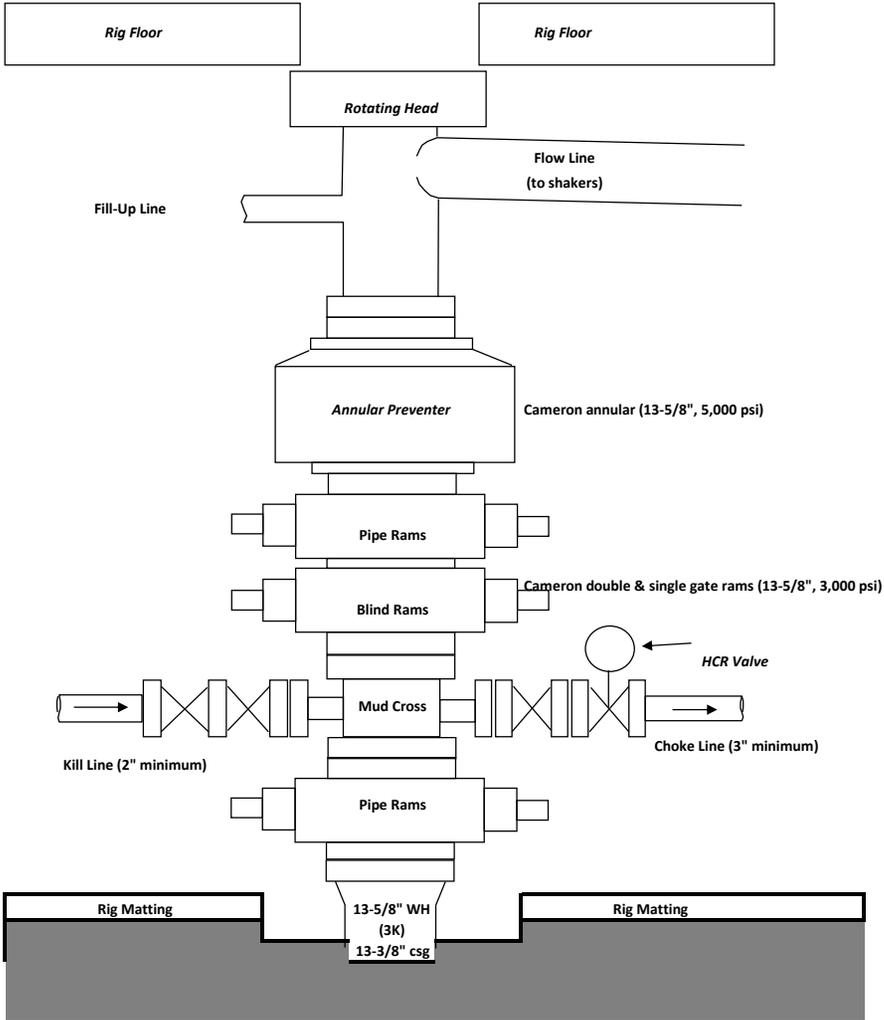
**Emission Control Standard:** Compressor engines 300 horsepower or less used during well production must be rated by the manufacturer as emitting NOx at 2 grams per horsepower hour or less to comply with the New Mexico Environmental Department, Air Quality Bureau's guidance.

**Waste Disposal:** All fluids (i.e., scrubber cleaners) used during washing of production equipment, including compressors, will be properly disposed of to avoid ground contamination, or hazard to livestock or wildlife.

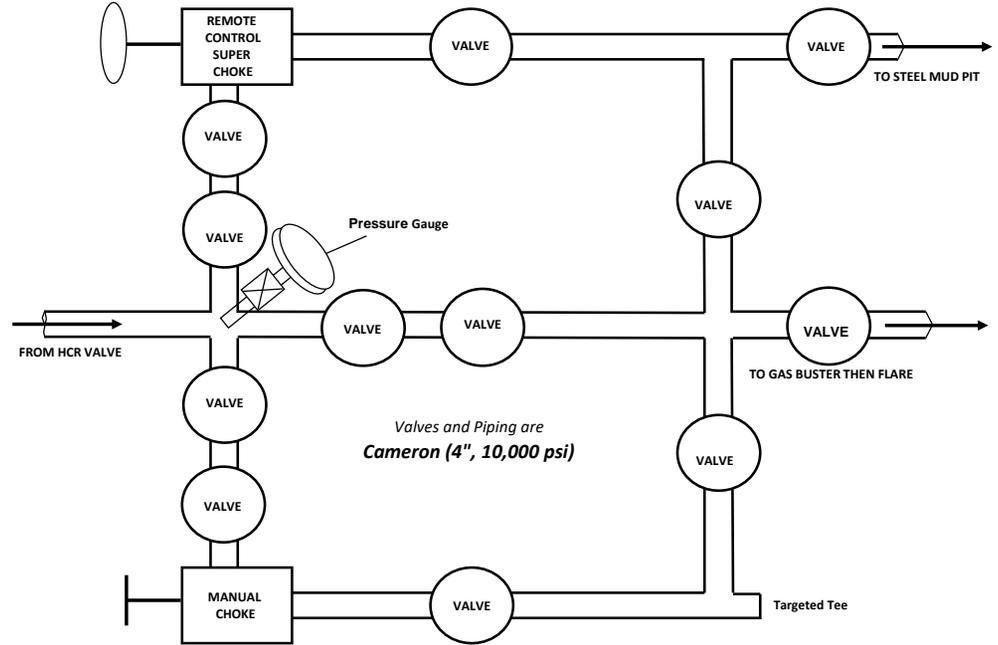
**BOPE & CHOKE MANIFOLD DIAGRAMS**

NOTE: EXACT BOPE AND CHOKE CONFIGURATION AND COMPONENTS MAY DIFFER FROM WHAT IS DEPICTED IN THE DIGRAMS BELOW DEPENDING ON THE RIG AND ITS ASSOCIATED EQUIPMENT. RAM PREVENTERS, ANNULAR PREVENTERS, AND CHOKE MANIFOLD AND COMPONENTS WILL BE RATED TO 3,000 PSI MINIMUM.

**BOPE**



**CHOKE MANIFOLD**



**District I**  
 1625 N. French Dr., Hobbs, NM 88240  
 Phone:(575) 393-6161 Fax:(575) 393-0720

**District II**  
 811 S. First St., Artesia, NM 88210  
 Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**  
 1000 Rio Brazos Rd., Aztec, NM 87410  
 Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**  
 1220 S. St Francis Dr., Santa Fe, NM 87505  
 Phone:(505) 476-3470 Fax:(505) 476-3462

**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

COMMENTS

Action 41776

**COMMENTS**

Operator: ENDURING RESOURCES, LLC 6300 S Syracuse Way, Suite 525 Centennial, CO 80111	OGRID: 372286
	Action Number: 41776
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

**COMMENTS**

Created By	Comment	Comment Date
kpickford	KP GEO Review 8/13/2021	8/13/2021

**District I**  
 1625 N. French Dr., Hobbs, NM 88240  
 Phone:(575) 393-6161 Fax:(575) 393-0720  
**District II**  
 811 S. First St., Artesia, NM 88210  
 Phone:(575) 748-1283 Fax:(575) 748-9720  
**District III**  
 1000 Rio Brazos Rd., Aztec, NM 87410  
 Phone:(505) 334-6178 Fax:(505) 334-6170  
**District IV**  
 1220 S. St Francis Dr., Santa Fe, NM 87505  
 Phone:(505) 476-3470 Fax:(505) 476-3462

**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

CONDITIONS  
 Action 41776

**CONDITIONS**

Operator: ENDURING RESOURCES, LLC 6300 S Syracuse Way, Suite 525 Centennial, CO 80111	OGRID: 372286
	Action Number: 41776
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

**CONDITIONS**

Created By	Condition	Condition Date
kpickford	Notify OCD 24 hours prior to casing & cement	8/13/2021
kpickford	Will require a File As Drilled C-102 and a Directional Survey with the C-104	8/13/2021
kpickford	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	8/13/2021
kpickford	Cement is required to circulate on both surface and intermediate1 strings of casing	8/13/2021
kpickford	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system	8/13/2021