

State of New Mexico  
Energy, Minerals and Natural Resources Department

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**Michelle Lujan Grisham**  
Governor

**Sarah Cottrell Propst**  
Cabinet Secretary

**Todd E. Leahy, JD, PhD**  
Deputy Secretary

**Adrienne Sandoval**, Division Director  
Oil Conservation Division



New Mexico Oil Conservation Division approval and conditions listed below are made in accordance with OCD Rule 19.15.7.11 and are in addition to the actions approved by BLM on the following 3160-5 form.

Operator Signature Date: **Original APD 6/15/2017**  
Change of Plans Sundry Date 5/9/2019

WELL INFORMATION:

**ENDURING RESOURCES, LLC**  
**30-045-35825 KIMBETO WASH UNIT #772H**

Conditions of Approval:

(See the below checked and handwritten conditions)

- ✓ Notify Aztec OCD 24hrs prior to casing & cement.
- ✓ Hold C-104 for directional survey & "As Drilled" Plat
- ✓ Hold C-104 for NSL, NSP, DHC,
- ☐ Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
- ✓ Regarding the use of a pit, closed loop system or below grade tank, the operator must comply with the following as applicable:
  - ✓ A pit requires a complete C-144 be submitted and approved prior to the construction or use of the pit, pursuant to 19.15.17.8.A
  - ✓ A closed loop system requires notification prior to use, pursuant to 19.15.17.9.A
  - ✓ A below grade tank requires a registration be filed prior to the construction or use of the below grade tank, pursuant to 19.15.17.8.C
- ✓ 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
- ✓ Submit Gas Capture Plan form prior to spudding or initiating recompletions operations.
- ✓ Regarding Hydraulic Fracturing, review EPA Underground Injection Control Guidance 84
- ✓ 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.

June 25, 2019

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- ✓ Well-bore communication is regulated under 19.15.29 NMAC. This requires well-bore Communication to be reported in accordance with 19.15.29.8.
- ✓ Comply with current regulations at time of spud  
Prior to production operator needs to be in compliance with RULE 19.15.5.9
- ✓ Submit an amendment to the BLM to correct the bottom hole location reported on the BLM sundry form (see sundry submitted on 5/21/2019).



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NMOCD Approved by Signature

5/31/19

Date

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

RECEIVED

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

**SUNDRY NOTICES AND REPORTS ON WELLS**  
**Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.**

5. Lease Serial No.  
N0-G-1404-1963

6. If Indian, Allottee or Tribe Name

**SUBMIT IN TRIPLICATE - Other instructions on page 2**

7. If Unit of CA/Agreement, Name and/or No.  
NMNM135255A

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.  
KIMBETO WASH UNIT 772H

2. Name of Operator

Enduring Resources IV LLC

9. API Well No.  
30-045-35825

3a. Address

200 Energy Court Farmington NM 87401

3b. Phone No. (include area code)  
505-636-9743

10. Field and Pool or Exploratory Area  
Basin Mancos

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

SHL: 181' FNL & 2377' FWL SEC 28 23N 9W  
BHL: 262' FNL & 2165' FEL SEC 20 23N 9W

11. Country or Parish, State  
San Juan, NM

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

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other
	<input checked="" type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	<u>Change in</u>
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	<u>Plans</u>

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

Enduring Resources request a change in plans per attached updated:

- C102
- Drilling program & casing program/Ops plan
- BHL & POE
- Directional plans
- Wellbore

NMOC

MAY 31 2019

DISTRICT III

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

Lacey Granillo

Title Permit Specialist

Signature

Date 5/9/19

THE SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Petroleum Engineer  
Title

Date

24 May 2019

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

Office FFF

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.

NMOC



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

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

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

District IV  
1220 S. St. Francis Drive, Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico  
Energy, Minerals & Natural Resources Department

Form C-102  
Revised August 1, 2011

Submit one copy to  
Appropriate District Office

OIL CONSERVATION DIVISION

1220 South St. Francis Drive  
Santa Fe, NM 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number <b>30-045-35825</b>		*Pool Code 97232	*Pool Name BASIN MANCOS
*Property Code 321239	*Property Name KIMBETO WASH UNIT		*Well Number 772H
*GRID No. 372286	*Operator Name ENDURING RESOURCES, LLC		*Elevation 6534'

<sup>10</sup> Surface Location

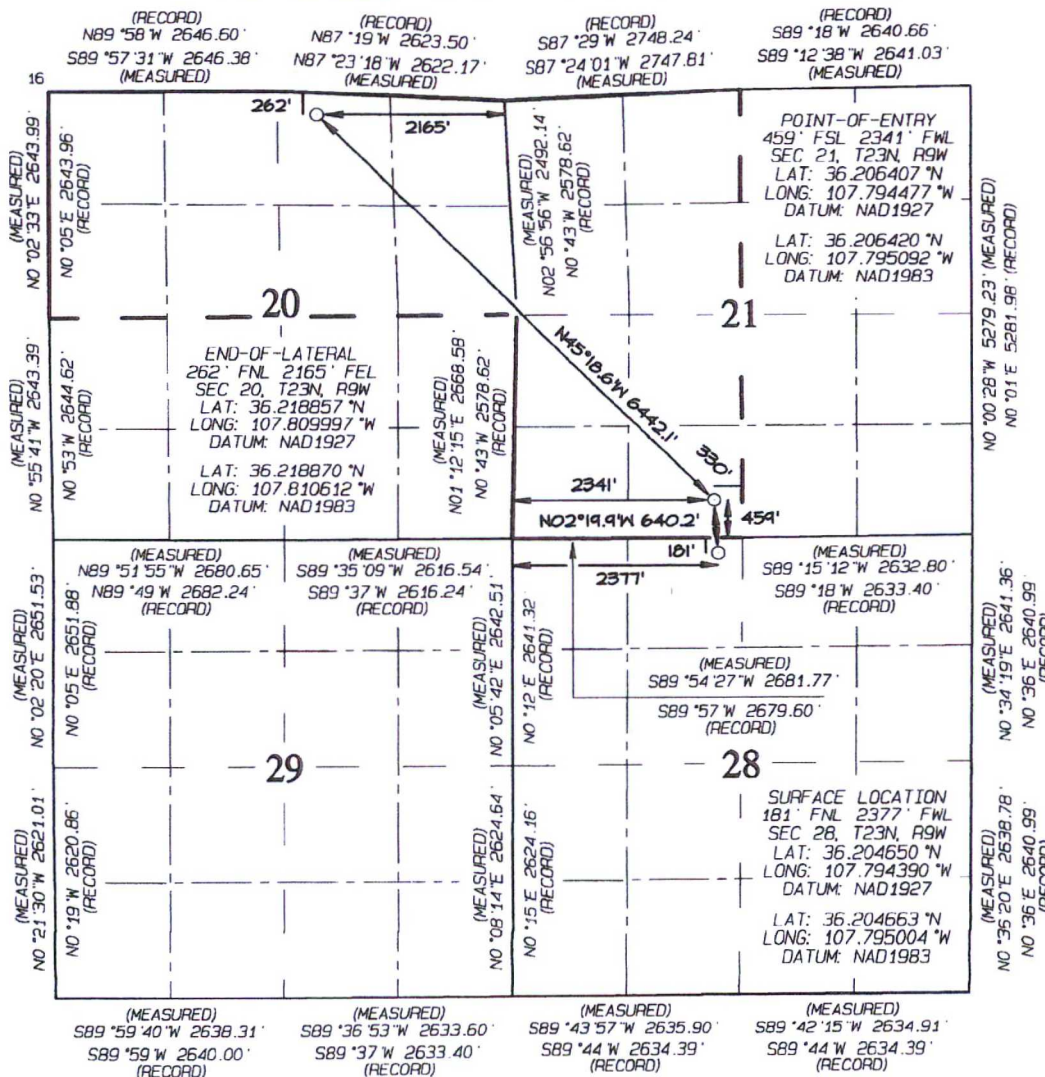
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	28	23N	9W		181	NORTH	2377	WEST	SAN JUAN

<sup>11</sup> Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	20	23N	9W		262	NORTH	2165	EAST	SAN JUAN

<sup>12</sup> Dedicated Acres 640.00	N/2 - Section 20 W/2 - Section 21	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No. R-14084
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



<sup>17</sup> OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom-hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature: *[Signature]* Date: 5/9/19  
Printed Name: *[Name]*  
E-mail Address: *[Address]*

<sup>18</sup> SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date Revised: MAY 6, 2019  
Survey Date: OCTOBER 2, 2015

Signature and Seal of Professional Surveyor



JASON C. EDWARDS

Certificate Number 15269





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

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

**WELL INFORMATION:**

**Name:** KIMBETO WASH UNIT 772H

**API Number:** 30-045-25825

**State:** New Mexico

**County:** San Juan

**Surface Elevation:** 6,534 ft ASL (GL) 6,562 ft ASL (KB)

**Surface Location:** 28-23N-09W Sec-Twn-Rng 181 ft FNL 2,377 ft FWL

36.204663 ° N latitude 107.795004 ° W longitude (NAD 83)

**BH Location:** 20-23N-09W Sec-Twn-Rng 512 ft FNL 1,915 ft FEL

36.218183 ° N latitude 107.809764 ° 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 37.8 miles to MM 113.4; Right (SW) on CR 7890 for 0.8 miles to fork; Left (S) remaining on 7890 for 1.3 miles to 4-way intersection; Left (SE) on 7890 for 0.6 miles to fork; Right (SW) remaining on 7890 for 0.5 miles; Right (W) on access road for W Lybrook Unit 720H location for 0.6 miles to fork; Left (W) on access road for W Lybrook Unit 726H location for 0.7 miles to fork; Left (W) on access road for W Lybrook Unit 730H location for 1.9 miles; Right (N) on access road for 0.4 miles to Kimbeto Wash Unit 736H Pad (Wells: KWU 772H, 774H, 793H, 794H, 795H).

**GEOLOGIC AND RESERVOIR INFORMATION:**

<i>Prognosis:</i>	Formation Tops	TVD (ft ASL)	TVD (ft KB)	MD (ft KB)	O / G / W	Pressure
	Ojo Alamo	6,488	74	74	W	normal
	Kirtland	6,391	171	171	W	normal
	Fruitland	6,131	431	431	G, W	sub
	Pictured Cliffs	5,781	781	781	G, W	sub
	Lewis	5,576	986	986	G, W	normal
	Chacra	5,391	1,171	1,171	G, W	normal
	Cliff House	4,386	2,176	2,181	G, W	sub
	Menefee	4,371	2,191	2,196	G, W	normal
	Point Lookout	3,381	3,181	3,197	G, W	normal
	Mancos	3,105	3,457	3,476	O,G	sub (~0.38)
	Gallup (MNCS_A)	2,879	3,683	3,704	O,G	sub (~0.38)
	MNCS_I	2,165	4,397	4,646	O,G	sub (~0.38)
	<b>P.O.E. TARGET</b>	<b>2,143</b>	<b>4,419</b>	<b>4,812</b>	<b>O,G</b>	<b>sub (~0.38)</b>
	<b>B.H.L. TARGET</b>	<b>2,103</b>	<b>4,459</b>	<b>10,901</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:** 1,920 psi

**Maximum anticipated surface pressure, assuming partially evacuated hole:** 940 psi

**Temperature:** Maximum anticipated BHT is 125° 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; gas detection from drill out of 13-3/8" casing to TD; remote geo-steering from drill out of 9-5/8" casing to TD.

**MWD / LWD:** MWD surveys with inclination and azimuth in 100' stations (minimum) from drill out of 13-3/8" casing to TD; Gamma Ray from drill out of 9-5/8" casing to TD; Gamma Ray optional in 12-1/4" intermediate hole

**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:** Ensign

**Rig No.:** 773

**Draw Works:** Pacific Rim 1500AC

**Mast:** ADR 1500S Cantilever Triple (142 ft, 800,000 lbs, 12 lines)

**Top Drive:** Tesco 500-ESI-1350 (500 ton, 1,350 hp)

**Prime Movers:** 3 - CAT 3512 (1,475 hp)

**Pumps:** 3 - Gardner-Denver PZ11 (7,500 psi)

**BOPE 1:** Cameron single gate ram & double gate ram (13-5/8", 10,000 psi)

**BOPE 2:** Cameron annular (13-5/8", 10,000 psi)

**Choke** 3", 10,000 psi

**KB-GL (ft):** 28

**Note:** Actual drilling rig may vary depending on availability at time the well is scheduled to be drilled.

#### 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	300 ft (MD)	Hole Section Length:	300 ft
0 ft (TVD)	to	300 ft (TVD)	Casing Required:	300 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					131	542	114,258	114,258
Min. S.F.					8.62	5.04	7.47	7.96

**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 Details:** 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	1.180	5.24	0.6946	100%	0	353

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 (estimated minimum WOC time is 6 hours).**



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

300 ft (MD)	to	2,509 ft (MD)	Hole Section Length:	2,209 ft
300 ft (TVD)	to	2,500 ft (TVD)	Casing Required:	2,509 ft

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

**Hole Size:** 12-1/4"**Bit / Motor:** PDC w/mud motor**MWD / Survey:** MWD surveys with inclination and azimuth in 100' stations (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					1,092	1,083	178,767
Min. S.F.					<b>1.85</b>	<b>3.25</b>	<b>3.15</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: 3,900 Optimum: 5,200 Maximum: 6,500**Casing Details:** 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	1.960	10.12	70%	0	559
Tail	Class G	15.8	1.148	4.98	20%	2,009	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 &amp; HALCEM cementing blend

**Notify NMOCD & BLM if cement is not circulated to surface. Cement must achieve 500 psi compressive strength before drilling out (estimated minimum WOC time for tail slurry is 6 hours).****PRODUCTION: Drill to TD following directional plan, run casing, cement casing to surface.**

2,509 ft (MD)	to	10,901 ft (MD)	Hole Section Length:	8,392 ft
2,500 ft (TVD)	to	4,459 ft (TVD)	Casing Required:	10,901 ft

Estimated KOP:	3,823 ft (MD)	3,800 ft (TVD)
Estimated Landing Point (P.O.E.):	4,812 ft (MD)	4,419 ft (TVD)
Estimated Lateral Length:	6,089 ft (MD)	

Fluid:	Type	MW (ppg)	FL (mL/30')	PV (cp)	YP (lb/100 sqft)	pH	Comments
	LSND	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 surveys with inclination and azimuth in 100' stations (minimum) before KOP, every joint from KOP to POE, every 100' (minimum) from POE to TD; Gamma Ray from drill out of 9-5/8" shoe to TD**Logging:** MWD Gamma Ray 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)
<i>Specs</i>	5.500	17.0	P-110	LTC	7,460	10,640	546,000	445,000
<i>Loading</i>					2,203	8,917	259,912	259,912
<i>Min. S.F.</i>					<b>3.39</b>	<b>1.19</b>	<b>2.10</b>	<b>1.71</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: 3,400 Optimum: 4,530 Maximum: 5,660

**Casing Details:** Float shoe, float collar, 2 jts 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'. Place Floatation Sub at KOP. Continue running casing to surface. **The toe-initiation sleeves must be positioned INSIDE the 330' unit setback.**

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

**Lateral:** 1 centralizer per joint

**POE to KOP:** 1 centralizer per joint from landing point to KOP

**KOP to surface:** 1 centralizer per 2 joints from KOP to 9-5/8" shoe, 1 per 3 joints from 9-5/8" shoe to surface

<b>Cement:</b>	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	% Excess	Planned TOC (ft MD)	Total Cmt (sx)
<i>Lead</i>	G:POZ blend	12.3	1.960	10.11	50%	0	726
<i>Tail</i>	G:POZ blend	13.3	1.354	5.94	10%	3,704	1,339

**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 ECONOCER & EXTENDACER cementing blend

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

**Note:** The lateral may be drilled outside the applicable unit setback to maximize the length of the completed interval and to maximize resource recovery. If the well is drilled outside the setback, the toe initiation sleeve(s) and all perforations will be placed inside the setback. An unorthodox location application is not required because the completed interval will be entirely within the setback as defined and allowed by NMAC 19.15.16.7B(1), NMAC 19.15.16.14B(2), NMAC 19.15.16.15B(2). Kimbeto Wash Unit Order Number is R-14084.

**FINISH WELL:** ND BOP. RDMO Drilling Rig.

#### COMPLETION AND PRODUCTION PLAN:

**Frac:** 35 plug-and-perf stages with 140,000 bbls slickwater fluid and 11,500,000 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:** 7/1/2019

**Completion:** 8/15/2019

**Production:** 9/14/2019

**Prepared by:** Alec Bridge 5/6/2019



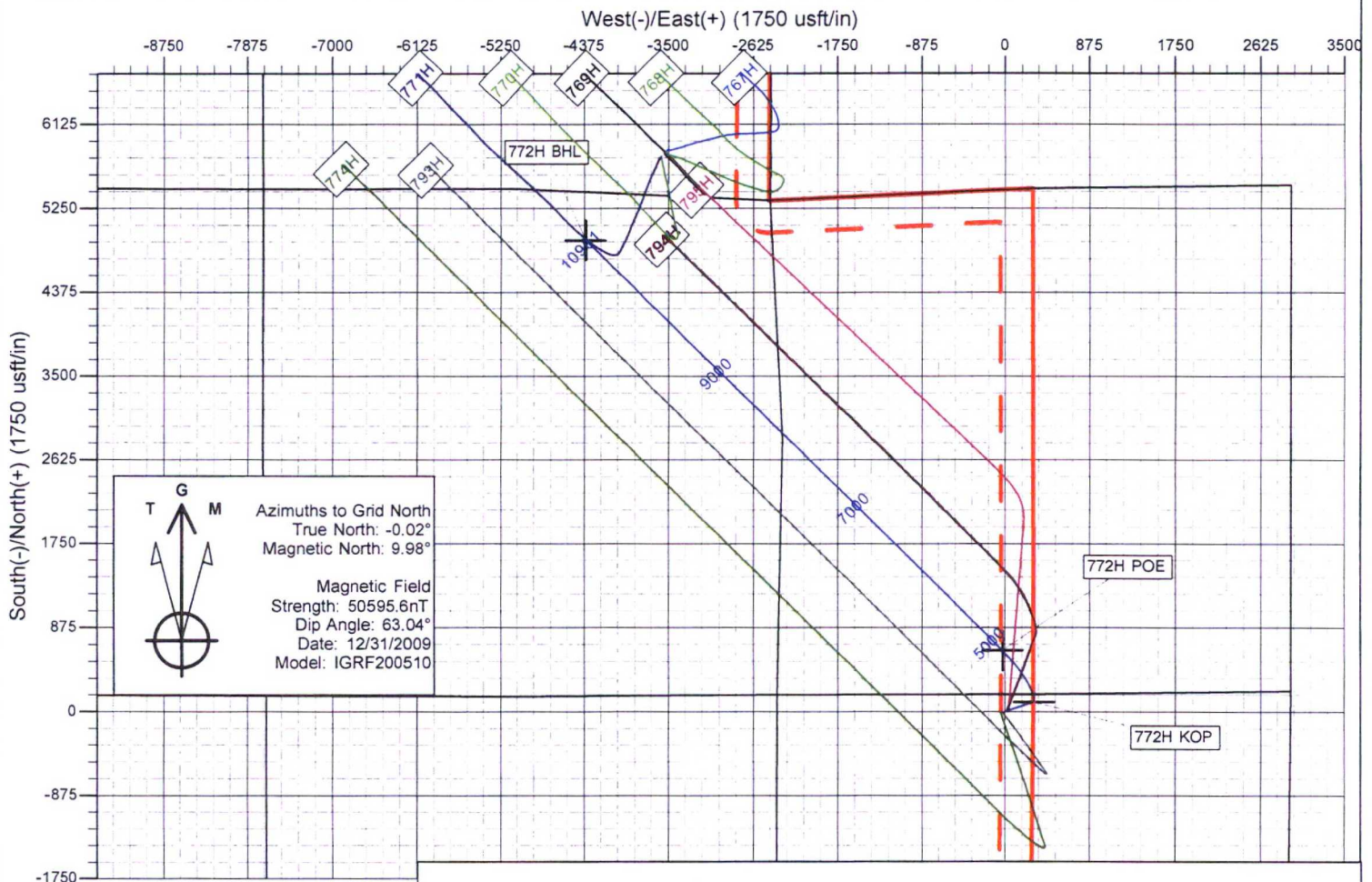


Enduring Resources LLC

Directional Drilling Plan  
Plan View & Section View

Kimbeto Wash Unit 772H

San Juan County, New Mexico  
T23N-R09W-Sec.28-Lot C  
Surface Latitude: 36.204663°N  
Surface Longitude: 107.795004°W  
Ground Level: 6534.0  
Reference Elevation: KB @ 6562.0usft (Original Well Elev)

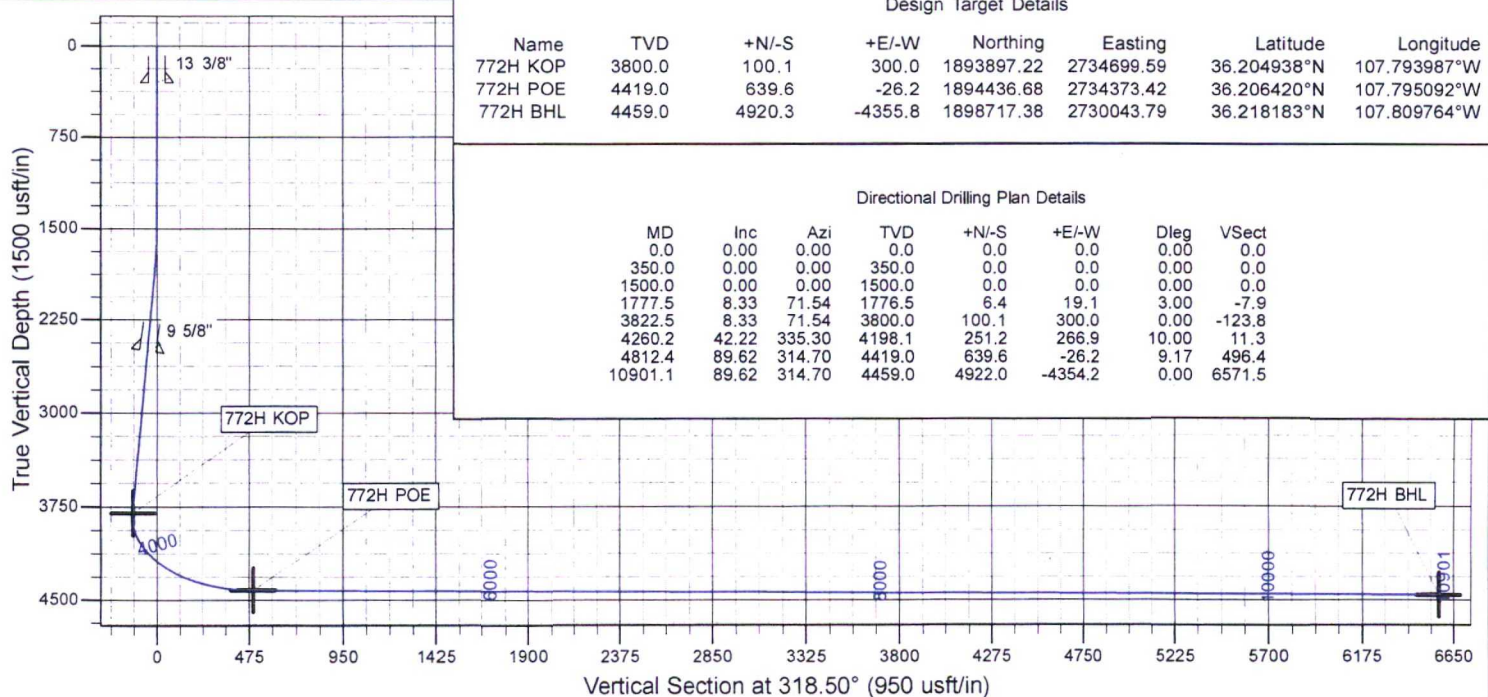


Design Target Details

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
772H KOP	3800.0	100.1	300.0	1893897.22	2734699.59	36.204938°N	107.793987°W
772H POE	4419.0	639.6	-26.2	1894436.68	2734373.42	36.206420°N	107.795092°W
772H BHL	4459.0	4920.3	-4355.8	1898717.38	2730043.79	36.218183°N	107.809764°W

Directional Drilling Plan Details

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	Vsect
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.0
350.0	0.00	0.00	350.0	0.0	0.0	0.00	0.0
1500.0	0.00	0.00	1500.0	0.0	0.0	0.00	0.0
1777.5	8.33	71.54	1776.5	6.4	19.1	3.00	-7.9
3822.5	8.33	71.54	3800.0	100.1	300.0	0.00	-123.8
4260.2	42.22	335.30	4198.1	251.2	266.9	10.00	11.3
4812.4	89.62	314.70	4419.0	639.6	-26.2	9.17	496.4
10901.1	89.62	314.70	4459.0	4922.0	-4354.2	0.00	6571.5







# **Enduring Resources LLC**

**San Juan Basin - Kimbeto Wash Unit**

**736H Pad**

**772H**

**Wellbore #1**

**Plan: Design #1**

## **Standard Planning Report**

**03 May, 2019**



## Planning Report

**Database:** EDM  
**Company:** Enduring Resources LLC  
**Project:** San Juan Basin - Kimbeto Wash Unit  
**Site:** 736H Pad  
**Well:** 772H  
**Wellbore:** Wellbore #1  
**Design:** Design #1

**Local Co-ordinate Reference:** Well 772H  
**TVD Reference:** KB @ 6562.0usft (Original Well Elev)  
**MD Reference:** KB @ 6562.0usft (Original Well Elev)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

<b>Project</b>	San Juan Basin - Kimbeto Wash Unit		
<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 Western Zone		

<b>Site</b>	736H Pad, San Juan County, New Mexico				
<b>Site Position:</b>		<b>Northing:</b>	1,893,797.11 usft	<b>Latitude:</b>	36.204663°N
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,734,399.63 usft	<b>Longitude:</b>	107.795004°W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.02 °

Well	772H					
Well Position	+N/-S	0.0 usft	Northing:	1,893,797.11 usft	Latitude:	36.204663°N
	+E/-W	0.0 usft	Easting:	2,734,399.63 usft	Longitude:	107.795004°W
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	6,534.0 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	10.00	63.04	50,595.59906101

<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	318.50	

<b>Plan Survey Tool Program</b>	<b>Date</b>	5/3/2019			
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.0	10,901.1	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	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,777.5	8.33	71.54	1,776.5	6.4	19.1	3.00	3.00	0.00	71.54	
3,822.5	8.33	71.54	3,800.0	100.1	300.0	0.00	0.00	0.00	0.00	772H KOP
4,260.2	42.22	335.30	4,198.1	251.2	266.9	10.00	7.74	-21.99	-105.04	
4,812.4	89.62	314.70	4,419.0	639.6	-26.2	9.17	8.58	-3.73	-27.06	772H POE
10,901.1	89.62	314.70	4,459.0	4,922.0	-4,354.2	0.00	0.00	0.00	0.00	772H BHL





## Planning Report

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**Wellbore:** Wellbore #1  
**Design:** Design #1

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**MD Reference:** KB @ 6562.0usft (Original Well Elev)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

### 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
74.0	0.00	0.00	74.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Ojo Alamo</b>									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
171.0	0.00	0.00	171.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Kirtland</b>									
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
<b>13 3/8"</b>									
350.0	0.00	0.00	350.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
431.0	0.00	0.00	431.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Fruitland</b>									
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
781.0	0.00	0.00	781.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Pictured Cliffs</b>									
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
986.0	0.00	0.00	986.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Lewis</b>									
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,171.0	0.00	0.00	1,171.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Chacra</b>									
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	3.00	71.54	1,600.0	0.8	2.5	-1.0	3.00	3.00	0.00
1,700.0	6.00	71.54	1,699.6	3.3	9.9	-4.1	3.00	3.00	0.00
1,777.5	8.33	71.54	1,776.5	6.4	19.1	-7.9	3.00	3.00	0.00
1,800.0	8.33	71.54	1,798.8	7.4	22.2	-9.2	0.00	0.00	0.00
1,900.0	8.33	71.54	1,897.7	12.0	35.9	-14.8	0.00	0.00	0.00
2,000.0	8.33	71.54	1,996.7	16.6	49.6	-20.5	0.00	0.00	0.00
2,100.0	8.33	71.54	2,095.6	21.2	63.4	-26.2	0.00	0.00	0.00
2,181.2	8.33	71.54	2,176.0	24.9	74.5	-30.8	0.00	0.00	0.00
<b>Cliff House</b>									
2,196.4	8.33	71.54	2,191.0	25.6	76.6	-31.6	0.00	0.00	0.00
<b>Menefee</b>									
2,200.0	8.33	71.54	2,194.6	25.7	77.1	-31.8	0.00	0.00	0.00
2,300.0	8.33	71.54	2,293.5	30.3	90.9	-37.5	0.00	0.00	0.00
2,400.0	8.33	71.54	2,392.5	34.9	104.6	-43.2	0.00	0.00	0.00
2,500.0	8.33	71.54	2,491.4	39.5	118.3	-48.8	0.00	0.00	0.00
2,508.7	8.33	71.54	2,500.0	39.9	119.5	-49.3	0.00	0.00	0.00
<b>9 5/8"</b>									
2,600.0	8.33	71.54	2,590.4	44.1	132.1	-54.5	0.00	0.00	0.00
2,700.0	8.33	71.54	2,689.3	48.7	145.8	-60.2	0.00	0.00	0.00
2,800.0	8.33	71.54	2,788.2	53.2	159.5	-65.8	0.00	0.00	0.00
2,900.0	8.33	71.54	2,887.2	57.8	173.3	-71.5	0.00	0.00	0.00
3,000.0	8.33	71.54	2,986.1	62.4	187.0	-77.2	0.00	0.00	0.00
3,100.0	8.33	71.54	3,085.1	67.0	200.7	-82.8	0.00	0.00	0.00



## Planning Report

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**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

### 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)
3,196.9	8.33	71.54	3,181.0	71.4	214.0	-88.3	0.00	0.00	0.00
<b>Point Lookout</b>									
3,200.0	8.33	71.54	3,184.0	71.6	214.5	-88.5	0.00	0.00	0.00
3,300.0	8.33	71.54	3,283.0	76.2	228.2	-94.2	0.00	0.00	0.00
3,400.0	8.33	71.54	3,381.9	80.7	241.9	-99.8	0.00	0.00	0.00
3,475.9	8.33	71.54	3,457.0	84.2	252.3	-104.1	0.00	0.00	0.00
<b>Mancos</b>									
3,500.0	8.33	71.54	3,480.9	85.3	255.7	-105.5	0.00	0.00	0.00
3,600.0	8.33	71.54	3,579.8	89.9	269.4	-111.2	0.00	0.00	0.00
3,700.0	8.33	71.54	3,678.8	94.5	283.1	-116.8	0.00	0.00	0.00
3,704.3	8.33	71.54	3,683.0	94.7	283.7	-117.1	0.00	0.00	0.00
<b>Gallup (MNCS_A)</b>									
3,800.0	8.33	71.54	3,777.7	99.1	296.9	-122.5	0.00	0.00	0.00
3,819.5	8.33	71.54	3,797.0	100.0	299.5	-123.6	0.00	0.00	0.00
<b>MNCS_B</b>									
3,822.5	8.33	71.54	3,800.0	100.1	300.0	-123.8	0.00	0.00	0.00
3,900.0	9.77	21.44	3,876.6	108.0	307.7	-123.0	10.00	1.86	-64.67
3,938.1	12.33	6.59	3,914.0	115.1	309.3	-118.8	10.00	6.72	-39.00
<b>MNCS_Cms</b>									
4,000.0	17.48	352.99	3,973.8	130.9	309.0	-106.7	10.00	8.32	-21.97
4,075.1	24.37	344.51	4,044.0	157.1	303.4	-83.4	10.00	9.18	-11.29
<b>MNCS_D</b>									
4,100.0	26.72	342.63	4,066.4	167.3	300.4	-73.7	10.00	9.46	-7.53
4,200.0	36.35	337.41	4,151.6	216.3	282.3	-25.0	10.00	9.63	-5.23
4,234.8	39.75	336.12	4,179.0	236.0	273.8	-4.6	10.00	9.74	-3.69
<b>MNCS_E</b>									
4,260.2	42.22	335.30	4,198.1	251.2	266.9	11.3	10.00	9.77	-3.25
4,300.0	45.50	332.97	4,226.8	276.0	254.9	37.8	9.17	8.23	-5.85
4,326.4	47.70	331.56	4,245.0	293.0	246.0	56.5	9.17	8.32	-5.32
<b>MNCS_F</b>									
4,400.0	53.90	328.12	4,291.5	342.2	217.3	112.3	9.17	8.43	-4.69
4,434.3	56.82	326.69	4,311.0	366.0	202.0	140.2	9.17	8.52	-4.15
<b>MNCS_G</b>									
4,500.0	62.46	324.22	4,344.2	412.6	169.9	196.5	9.17	8.58	-3.77
4,536.1	65.57	322.96	4,360.0	438.7	150.6	228.8	9.17	8.63	-3.47
<b>MNCS_H</b>									
4,600.0	71.11	320.89	4,383.6	485.4	114.0	288.0	9.17	8.66	-3.25
4,646.2	75.13	319.47	4,397.0	519.4	85.7	332.3	9.17	8.69	-3.06
<b>MNCS_I</b>									
4,700.0	79.81	317.88	4,408.7	558.8	51.0	384.7	9.17	8.71	-2.95
4,800.0	88.54	315.05	4,418.8	630.8	-17.4	484.0	9.17	8.73	-2.84
4,812.4	89.62	314.70	4,419.0	639.6	-26.2	496.4	9.17	8.74	-2.81
4,900.0	89.62	314.70	4,419.6	701.2	-88.5	583.8	0.00	0.00	0.00
5,000.0	89.62	314.70	4,420.2	771.5	-159.6	683.6	0.00	0.00	0.00
5,100.0	89.62	314.70	4,420.9	841.9	-230.6	783.4	0.00	0.00	0.00
5,200.0	89.62	314.70	4,421.5	912.2	-301.7	883.1	0.00	0.00	0.00
5,300.0	89.62	314.70	4,422.2	982.5	-372.8	982.9	0.00	0.00	0.00
5,400.0	89.62	314.70	4,422.9	1,052.9	-443.9	1,082.7	0.00	0.00	0.00
5,500.0	89.62	314.70	4,423.5	1,123.2	-515.0	1,182.5	0.00	0.00	0.00
5,600.0	89.62	314.70	4,424.2	1,193.5	-586.1	1,282.2	0.00	0.00	0.00
5,700.0	89.62	314.70	4,424.8	1,263.9	-657.1	1,382.0	0.00	0.00	0.00
5,800.0	89.62	314.70	4,425.5	1,334.2	-728.2	1,481.8	0.00	0.00	0.00
5,900.0	89.62	314.70	4,426.1	1,404.5	-799.3	1,581.6	0.00	0.00	0.00





## Planning Report

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**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

### 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)
6,000.0	89.62	314.70	4,426.8	1,474.9	-870.4	1,681.4	0.00	0.00	0.00
6,100.0	89.62	314.70	4,427.5	1,545.2	-941.5	1,781.1	0.00	0.00	0.00
6,200.0	89.62	314.70	4,428.1	1,615.5	-1,012.5	1,880.9	0.00	0.00	0.00
6,300.0	89.62	314.70	4,428.8	1,685.9	-1,083.6	1,980.7	0.00	0.00	0.00
6,400.0	89.62	314.70	4,429.4	1,756.2	-1,154.7	2,080.5	0.00	0.00	0.00
6,500.0	89.62	314.70	4,430.1	1,826.5	-1,225.8	2,180.2	0.00	0.00	0.00
6,600.0	89.62	314.70	4,430.7	1,896.9	-1,296.9	2,280.0	0.00	0.00	0.00
6,700.0	89.62	314.70	4,431.4	1,967.2	-1,368.0	2,379.8	0.00	0.00	0.00
6,800.0	89.62	314.70	4,432.1	2,037.5	-1,439.0	2,479.6	0.00	0.00	0.00
6,900.0	89.62	314.70	4,432.7	2,107.9	-1,510.1	2,579.4	0.00	0.00	0.00
7,000.0	89.62	314.70	4,433.4	2,178.2	-1,581.2	2,679.1	0.00	0.00	0.00
7,100.0	89.62	314.70	4,434.0	2,248.5	-1,652.3	2,778.9	0.00	0.00	0.00
7,200.0	89.62	314.70	4,434.7	2,318.9	-1,723.4	2,878.7	0.00	0.00	0.00
7,300.0	89.62	314.70	4,435.3	2,389.2	-1,794.4	2,978.5	0.00	0.00	0.00
7,400.0	89.62	314.70	4,436.0	2,459.5	-1,865.5	3,078.2	0.00	0.00	0.00
7,500.0	89.62	314.70	4,436.7	2,529.9	-1,936.6	3,178.0	0.00	0.00	0.00
7,600.0	89.62	314.70	4,437.3	2,600.2	-2,007.7	3,277.8	0.00	0.00	0.00
7,700.0	89.62	314.70	4,438.0	2,670.5	-2,078.8	3,377.6	0.00	0.00	0.00
7,800.0	89.62	314.70	4,438.6	2,740.9	-2,149.9	3,477.3	0.00	0.00	0.00
7,900.0	89.62	314.70	4,439.3	2,811.2	-2,220.9	3,577.1	0.00	0.00	0.00
8,000.0	89.62	314.70	4,439.9	2,881.5	-2,292.0	3,676.9	0.00	0.00	0.00
8,100.0	89.62	314.70	4,440.6	2,951.9	-2,363.1	3,776.7	0.00	0.00	0.00
8,200.0	89.62	314.70	4,441.3	3,022.2	-2,434.2	3,876.5	0.00	0.00	0.00
8,300.0	89.62	314.70	4,441.9	3,092.6	-2,505.3	3,976.2	0.00	0.00	0.00
8,400.0	89.62	314.70	4,442.6	3,162.9	-2,576.3	4,076.0	0.00	0.00	0.00
8,500.0	89.62	314.70	4,443.2	3,233.2	-2,647.4	4,175.8	0.00	0.00	0.00
8,600.0	89.62	314.70	4,443.9	3,303.6	-2,718.5	4,275.6	0.00	0.00	0.00
8,700.0	89.62	314.70	4,444.5	3,373.9	-2,789.6	4,375.3	0.00	0.00	0.00
8,800.0	89.62	314.70	4,445.2	3,444.2	-2,860.7	4,475.1	0.00	0.00	0.00
8,900.0	89.62	314.70	4,445.9	3,514.6	-2,931.8	4,574.9	0.00	0.00	0.00
9,000.0	89.62	314.70	4,446.5	3,584.9	-3,002.8	4,674.7	0.00	0.00	0.00
9,100.0	89.62	314.70	4,447.2	3,655.2	-3,073.9	4,774.5	0.00	0.00	0.00
9,200.0	89.62	314.70	4,447.8	3,725.6	-3,145.0	4,874.2	0.00	0.00	0.00
9,300.0	89.62	314.70	4,448.5	3,795.9	-3,216.1	4,974.0	0.00	0.00	0.00
9,400.0	89.62	314.70	4,449.1	3,866.2	-3,287.2	5,073.8	0.00	0.00	0.00
9,500.0	89.62	314.70	4,449.8	3,936.6	-3,358.3	5,173.6	0.00	0.00	0.00
9,600.0	89.62	314.70	4,450.5	4,006.9	-3,429.3	5,273.3	0.00	0.00	0.00
9,700.0	89.62	314.70	4,451.1	4,077.2	-3,500.4	5,373.1	0.00	0.00	0.00
9,800.0	89.62	314.70	4,451.8	4,147.6	-3,571.5	5,472.9	0.00	0.00	0.00
9,900.0	89.62	314.70	4,452.4	4,217.9	-3,642.6	5,572.7	0.00	0.00	0.00
10,000.0	89.62	314.70	4,453.1	4,288.2	-3,713.7	5,672.4	0.00	0.00	0.00
10,100.0	89.62	314.70	4,453.7	4,358.6	-3,784.7	5,772.2	0.00	0.00	0.00
10,200.0	89.62	314.70	4,454.4	4,428.9	-3,855.8	5,872.0	0.00	0.00	0.00
10,300.0	89.62	314.70	4,455.1	4,499.2	-3,926.9	5,971.8	0.00	0.00	0.00
10,400.0	89.62	314.70	4,455.7	4,569.6	-3,998.0	6,071.6	0.00	0.00	0.00
10,500.0	89.62	314.70	4,456.4	4,639.9	-4,069.1	6,171.3	0.00	0.00	0.00
10,600.0	89.62	314.70	4,457.0	4,710.2	-4,140.2	6,271.1	0.00	0.00	0.00
10,700.0	89.62	314.70	4,457.7	4,780.6	-4,211.2	6,370.9	0.00	0.00	0.00
10,800.0	89.62	314.70	4,458.3	4,850.9	-4,282.3	6,470.7	0.00	0.00	0.00
10,900.0	89.62	314.70	4,459.0	4,921.2	-4,353.4	6,570.4	0.00	0.00	0.00
10,901.1	89.62	314.70	4,459.0	4,922.0	-4,354.2	6,571.5	0.00	0.00	0.00



## Planning Report

**Database:** EDM  
**Company:** Enduring Resources LLC  
**Project:** San Juan Basin - Kimbeto Wash Unit  
**Site:** 736H Pad  
**Well:** 772H  
**Wellbore:** Wellbore #1  
**Design:** Design #1

**Local Co-ordinate Reference:** Well 772H  
**TVD Reference:** KB @ 6562.0usft (Original Well Elev)  
**MD Reference:** KB @ 6562.0usft (Original Well Elev)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

### 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
772H KOP - plan hits target center - Point	0.00	359.98	3,800.0	100.1	300.0	1,893,897.23	2,734,699.60	36.204938°N	107.793987°W
772H POE - plan hits target center - Point	0.00	359.98	4,419.0	639.6	-26.2	1,894,436.68	2,734,373.42	36.206420°N	107.795092°W
772H BHL - plan misses target center by 2.4usft at 10901.1usft MD (4459.0 TVD, 4922.0 N, -4354.2 E) - Point	0.00	359.99	4,459.0	4,920.3	-4,355.8	1,898,717.39	2,730,043.79	36.218183°N	107.809765°W

### Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
300.0	300.0	13 3/8"	13-3/8	17-1/2
2,508.7	2,500.0	9 5/8"	9-5/8	12-1/4

### Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
74.0	74.0	Ojo Alamo		0.00	
171.0	171.0	Kirtland		0.00	
431.0	431.0	Fruitland		0.00	
781.0	781.0	Pictured Cliffs		0.00	
986.0	986.0	Lewis		0.00	
1,171.0	1,171.0	Chacra		0.00	
2,181.2	2,176.0	Cliff House		0.00	
2,196.4	2,191.0	Menefee		0.00	
3,196.9	3,181.0	Point Lookout		0.00	
3,475.9	3,457.0	Mancos		0.00	
3,704.3	3,683.0	Gallup (MNCS_A)		0.00	
3,819.5	3,797.0	MNCS_B		0.00	
3,938.1	3,914.0	MNCS_Cms		0.00	
4,075.1	4,044.0	MNCS_D		0.00	
4,234.8	4,179.0	MNCS_E		0.00	
4,326.4	4,245.0	MNCS_F		0.00	
4,434.3	4,311.0	MNCS_G		0.00	
4,536.1	4,360.0	MNCS_H		0.00	
4,646.2	4,397.0	MNCS_I		0.00	



**WELL NAME: KIMBETO WASH UNIT 772H****OBJECTIVE:** Drill, complete, and equip single lateral in the Mancos-I formation**API Number:** 30-045-25825**State:** New Mexico**County:** San Juan**Surface Elev.:** 6,534 ft ASL (GL) 6,562 ft ASL (KB)**Surface Location:** 28-23N-09W Sec-Twn- Rng 181 ft FNL 2,377 ft FWL**BH Location:** 20-23N-09W Sec-Twn- Rng 512 ft FNL 1915 ft FEL

**Driving Directions:** FROM THE INTERSECTION OF US HWY 550 & US HWY 64 IN BLOOMFIELD, NM: South on US Hwy 550 for 37.8 miles to MM 113.4; Right (SW) on CR 7890 for 0.8 miles to fork; Left (S) remaining on 7890 for 1.3 miles to 4-way intersection; Left (SE) on 7890 for 0.6 miles to fork; Right (SW) remaining on 7890 for 0.5 miles; Right (W) on access road for W Lybrook Unit 720H location for 0.6 miles to fork; Left (W) on access road for W Lybrook Unit 726H location for 0.7 miles to fork; Left (W) on access road for W Lybrook Unit 730H location for 1.9 miles; Right (N) on access road for 0.4 miles to Kimbeto Wash Unit 736H Pad (Wells: KWU 772H, 774H, 793H, 794H, 795H).

**QUICK REFERENCE**

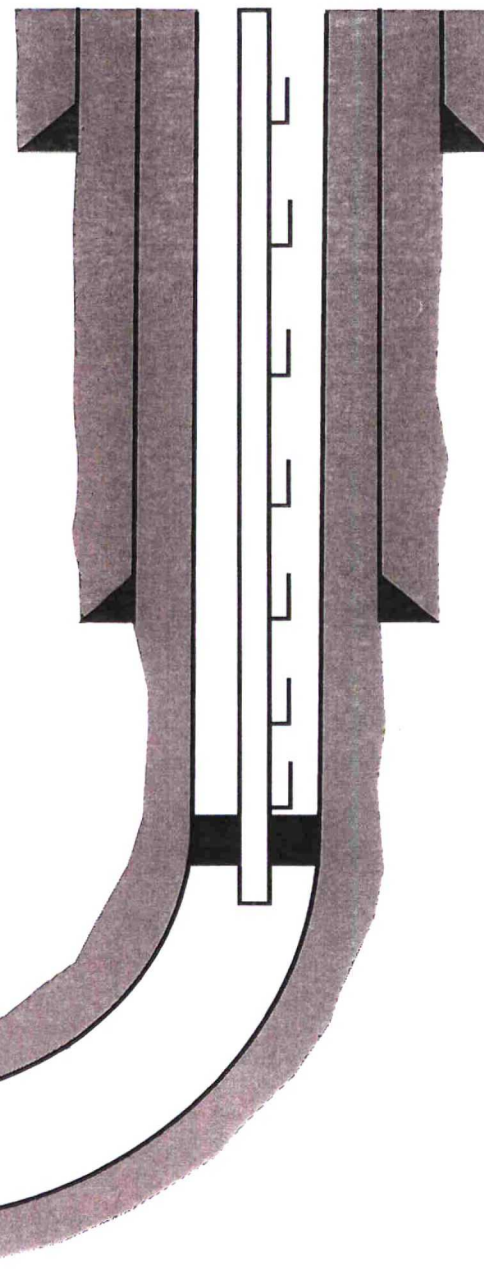
Sur TD (MD)	300 ft
Int TD (MD)	2,509 ft
KOP (MD)	3,823 ft
KOP (TVD)	3,800 ft
Target (TVD)	4,419 ft
Curve BUR	10 °/100 ft
POE (MD)	4,812 ft
TD (MD)	10,901 ft
Lat Len (ft)	6,089 ft

**WELL CONSTRUCTION SUMMARY:**

	Hole (in)	TD MD (ft)	Csg (in)	Csg (lb/ft)	Csg (grade)	Csg (conn)	Csg Top (ft)	Csg Bot (ft)
Surface	17.500	300	13.375	54.5	J-55	BTC	0	300
Intermediate	12.250	2,509	9.625	36.0	J-55	LTC	0	2,509
Production	8.500	10,901	5.500	17.0	P-110	LTC	0	10,901

**CEMENT PROPERTIES SUMMARY:**

	Type	Wt (ppg)	Yd (cuft/sk)	Wtr (gal/sk)	Hole Cap. (cuft/ft)	% Excess	TOC (ft MD)	Total (sx)
Surface	Class G	15.8	1.18	5.24	0.6946	100%	0	353
Inter. (Lead)	G:POZ Blend	12.3	1.96	10.12	0.3627	70%	0	559
Inter. (Tail)	Class G	15.8	1.148	4.98	0.3132	20%	2,009	164
Prod. (Lead)	G:POZ blend	12.3	1.960	10.11	0.2691	50%	0	726
Prod. (Tail)	G:POZ blend	13.3	1.354	5.94	0.2291	10%	3,704	1,339

**COMPLETION / PRODUCTION SUMMARY:****Frac:** 35 plug-and-perf stages with 140,000 bbls slickwater fluid and 11,500,000 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

**Directions from the Intersection of US Hwy 550 & US Hwy 64**  
**in Bloomfield, NM to Enduring Resources, LLC Kimbeto Wash Unit #772H**  
**181' FNL & 2377' FWL, Section 28, T23N, R9W, N.M.P.M., San Juan County, NM**

**Latitude: 36.204663°N Longitude: 107.795004°W Datum: NAD1983**

From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550 for 37.8 miles to Mile Marker 113.4;

Go Right (South-westerly) on County Road #7890 for 0.8 miles to fork in roadway;

Go Left (Southerly) remaining on County Road #7890 for 1.3 miles to four-way intersection;

Go Left (South-easterly) remaining on County Road #7890 for 0.6 miles to fork in roadway;

Go Right (South-westerly) remaining on County Road #7890 for 0.5 miles to begin Enduring W Lybrook Unit #720H existing access on right-hand side of County Road;

Go Right (Westerly) exiting County Road #7890 onto Enduring W Lybrook Unit #720H existing access for 0.6 miles to fork in roadway;

Go Left (Westerly) which is straight, onto Enduring W Lybrook Unit #726H existing access for 0.7 miles to fork in roadway;

Go Left (Westerly) which is straight, onto Enduring W Lybrook Unit #730H existing access for 1.9 miles to proposed access on right-hand side of roadway which continues for 2093.2' to staked Enduring Kimbeto Wash Unit #772H location.