State of New Mexico Energy, Minerals and Natural Resources Department

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 3160-4 or 3160-5 form.

Operator Signature Date: 5/11/2020 Well information: 30-039-07081 RINCON UNIT #078 ENDURING RESOURCES, LLC **Application Type:** ☐ Drilling/Casing Change ☐ Location Change \bowtie P&A ☐ Recomplete/DHC (For hydraulic fracturing operations review EPA Underground injection control Guidance #84: Submit Gas Capture Plan form prior to spudding or initiating recompletion operations) ☐ Other: Click or tap here to enter text. Conditions of Approval: **X** Notify appropriate NMOCD district office 24 Hours prior to commencing activities. **X** CBL Required ☑ In addition to the BLM required plugs, include the following: Ensure coverage 4173'-4073'. OCD & BLM Chacra pick @ 4123'. Ensure coverage 2560'-2460'. OCD & BLM Kirtland pick @ 2510'.

NMOCD Approved by Signature

7/16/2020 Date Form 3160-5 (June 2015)

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

OCD Received 7/2/2020

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

5. Lease Serial No. NMNM012209

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.

6. If Indian, Allottee or Tribe Name

SUBMIT IN T	7. If Unit or CA/Agree 892000916B	ement, Name and/or No.					
Type of Well ☐ Oil Well	ier			8. Well Name and No. RINCON UNIT 78			
Name of Operator ENDURING RESOURCES LL		9. API Well No. 30-039-07081-00-S1					
3a. Address 1050 17TH STREET SUITE 2 DENVER, CO 80265		b. Phone No. (include are Ph: 505-636-9743	a code)	10. Field and Pool or Exploratory Area BLANCO MESAVERDE			
4. Location of Well (Footage, Sec., T.	, R., M., or Survey Description)			11. County or Parish,	State		
Sec 14 T27N R7W SWNE 146 36.577866 N Lat, 107.541092				RIO ARRIBA CO	OUNTY, NM		
12. CHECK THE AF	PPROPRIATE BOX(ES) TO) INDICATE NATU	RE OF NOTICE	REPORT, OR OTH	HER DATA		
TYPE OF SUBMISSION		TY	PE OF ACTION				
Notice of Intent ■ Notice of Intent Notice of	☐ Acidize	☐ Deepen	☐ Produc	tion (Start/Resume)	☐ Water Shut-Off		
_	☐ Alter Casing	☐ Hydraulic Fract	uring Reclam	ation	■ Well Integrity		
☐ Subsequent Report	□ Casing Repair	■ New Construction	on Recom	plete	☐ Other		
☐ Final Abandonment Notice	☐ Change Plans	Plug and Aband	on	rarily Abandon			
	☐ Convert to Injection	☐ Plug Back	■ Water l	Disposal			
determined that the site is ready for fi P&A Enduring Resources requests wellbore diagram and reclama	to plug and abandon the ab tion plan.	ove mentioned well p	er plugging proce	edure,	·		
14. I hereby certify that the foregoing is	Electronic Submission #514	SOURCES LLC, sent	to the Farmington	•			
Name (Printed/Typed) LACEY G	RANILLO	Title Pl	Title PERMITTING SPECIALIST				
Signature (Electronic S	Submission)	Date 05	5/11/2020				
	THIS SPACE FOR	FEDERAL OR ST	ATE OFFICE U	SE			
Approved By JOE KILLINS		Title ENG	INEER		Date 07/02/2020		
Conditions of approval, if any, are attached certify that the applicant holds legal or equivalent would entitle the applicant to conductive to the conductive transfer of the conductiv	itable title to those rights in the sul		rmington				
Title 18 U.S.C. Section 1001 and Title 43 States any false, fictitious or fraudulent s				ake to any department or	agency of the United		

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT FARMINGTON DISTRICT OFFICE

6251 COLLEGE BLVD. FARMINGTON, NEW MEXICO 87402

Attachment to notice of Intention to Abandon:

Re: Permanent Abandonment

Well: Rincon 78

CONDITIONS OF APPROVAL

- 1. Plugging operations authorized are subject to the attached "General Requirements for Permanent Abandonment of Wells on Federal and Indian Lease."
- 2. Farmington Office is to be notified at least 24 hours before the plugging operations commence (505) 564-7750.
- 3. Submit electronic copy of the CBL for verification to the following addresses: jkillins@blm.gov, jhoffman@blm.gov and Brandon.Powell@state.nm.us. Based on CBL results inside/outside plugs and volumes will be adjusted accordingly. Required plug coverage is based on attached BLM geologic report.
- 4. BLM picks top of Fruitland at 2840. Ensure coverage of Fruitland top 2790-2890.
- 5. BLM picks top of Ojo Alamo at 2080. Ensure coverage of Ojo Alamo top 2030-2130.
- 6. BLM picks top of Nacimiento at 1190. Ensure coverage of Nacimiento op 1140-1240.

BLM FLUID MINERALS Geologic Report

Date Completed: 6/30/20

Well No.	Rincon Unit # 78			Location	1460′	FNL	&	1840′	FEL
Lease No.	NMNM012209			Sec. 14	T27N			R7W	
Operator	Enduring Resources		County	Rio Arriba		State	New M	exico	
Total Depth	5605′	PBTD 5	550'	Formation	MV(Kch	/Kpl)	,		
Elevation (GL) 6583'			Elevation (KI	3) 6595' (est.)				

Geologic Formations	Est. Top	Est. Bottom	Log Top	Log Bottom	Remarks
San Jose Fm			Surface	1190′	Surface/Fresh water sands
Nacimiento Fm			1190′	2080′	Fresh water sands
Ojo Alamo Ss			2080′	2510′	Aquifer (fresh water)
Kirtland Shale			2510′	2840'	
Fruitland Fm			2840′	3133'	Coal/Gas/Possible water
Pictured Cliffs Ss			3133'	3200′	Gas
Lewis Shale(main)			3200′	4123'	
Chacra			4123'	4291'	Probable water or dry
Lewis stringer			4291'	4822'	
Cliff House			4822'	4896′	Possible Gas & Water
Menefee			4896′	5286′	Possible Coal, Gas & Water
Pt. Lookout Ss			5286′	5535'	Possible Gas & Water
Mancos Shale (main)		İ	5535'		Source rock
Gallup					O&G/Water
Tocito Ss Lentil					Oil
Mancos stringer					
Juana Lopez					Marker bed
Mancos stringer					
Bridge Creek Ls					Marker bed
Graneros					
Dakota					Possible Gas & Water
Morrison					Water

Remarks:

P & A

- Please ensure that the top of the Fruitland formation as well as the entire Ojo Alamo aquifer, identified in this report, are isolated by proper placement of cement plugs. This will protect the freshwater sands in this well bore.

Please note that the BLM geologist's picks for several formation tops vary slightly to significantly from the operator's picks. These include the Ojo Alamo, Pictured Cliffs, Chacra, Lewis Shale, Chacra, and Pt. Lookout Formations.

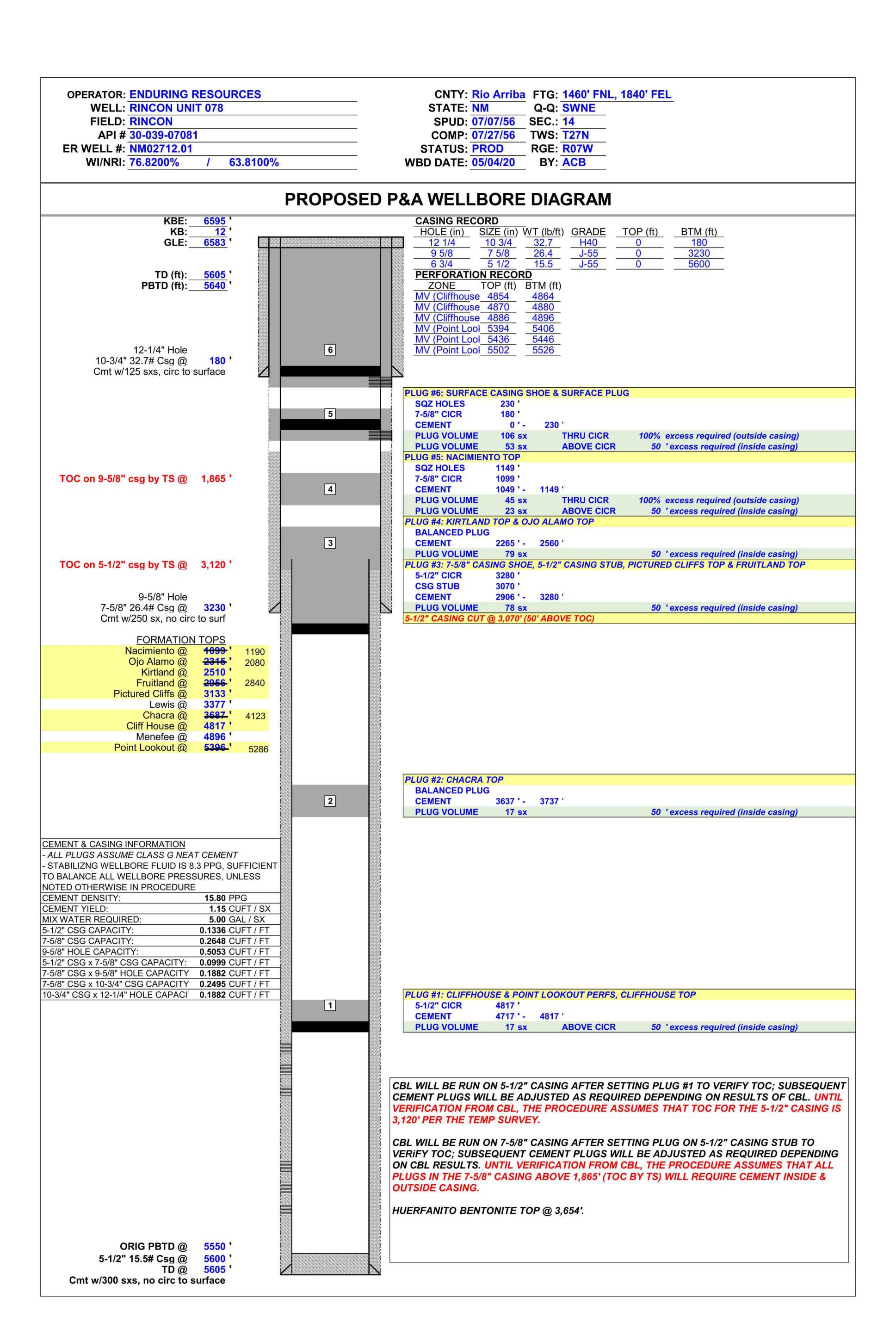
Reference Well:

1) Enduring Resources Fm. Tops Same

Prepared by: Walter Gage

OPERATOR: ENDURING RESOURCES CNTY: Rio Arriba FTG: 1460' FNL, 1840' FEL **WELL: RINCON UNIT 078** STATE: NM Q-Q: SWNE FIELD: RINCON SPUD: 07/07/56 SEC.: 14 API # 30-039-07081 COMP: 07/27/56 TWS: T27N RGE: R07W ER WELL #: NM02712.01 STATUS: PROD WI/NRI: 76.8200% 63.8100% WBD DATE: 04/08/20 BY: ACB **CURRENT WELLBORE DIAGRAM** 6595 KBE: KB: 12 GLE: 6583 **CASING RECORD** TD (ft):_ SIZE (in) WT (lb/ft) GRADE TOP (ft) 5605 HOLE (in) BTM (ft) PBTD (ft): <u>5640</u> ' 4 jts 32.7 H40 12 1/4 10 3/4 180 7 5/8 3230 102 jts 26.4 J-55 9 5/8 175 jts 5 1/2 15.5 5600 6 3/4 12-1/4" Hole **TUBING RECORD** COND: DATE: 10-3/4" 32.7# Csg @ 180 TALLY (ft) Cmt w/125 sxs, circ to surface SIZE (in) WT (lb/ft) GRADE TOP (ft) J-55 5509.00 2 3/8 4.7 MAKE/MODEL SIZE (in) TALLY (ft) DEPTH (ft) ITEM 5521.00 TBG 4.7# J55 2 3/8 5509.00 TOC on 9-5/8" csg by TS @ 1,865 ' **PERFORATION RECORD** TOP (ft) BTM (ft) SPF **STAGE** STATUS VOL / PROP ZONE MV (Cliffhouse 4854 4864 Water Frac 60,000 MV (Cliffhouse 4870 4880 TOC on 5-1/2" csg by TS @ 3,120 ' MV (Cliffhouse 4886 4896 MV (Point Lool 5394 5406 Water Frac 60,000 MV (Point Lool 5436 5446 MV (Point Lool 5502 9-5/8" Hole 5526 3230 ' 7-5/8" 26.4# Csg @ Cmt w/250 sx, no circ to surf **FORMATION TOPS** 1099 ' Nacimiento @ 120,000 Ojo Alamo @ 2315 ' Kirtland @ 2510 ' 2956 Fruitland @ Pictured Cliffs @ 3133 3377 ' Lewis @ Chacra @ 3687 Cliff House @ 4817 ' 4896 Menefee @ Point Lookout @ 5396 ORIG PBTD @ 5550 ' 5-1/2" 15.5# Csg @ 5600 ' 5605 TD@

Cmt w/300 sxs, no circ to surface



ENDURING RESOURCES IV, LLC

PLUG AND ABANDONMENT PROCEDURE

WELL: RINCON UNIT 078 **API:** 30-039-07081

ER WELL: NM02712.01

LOCATION: 1460' FNL, 1840' FEL, Sec.14, T27N, R07W

COUNTY: Rio Arriba STATE: NM

- **NOTES:** 1) All cement volumes assume 100% excess volume outside pipe and 50' excess inside pipe. Cement will be Class 'G' (15.8 ppg and 1.15 cuft/sx). A stabilizing wellbore fluid with density of 8.3 ppg will be sufficient to balance pressures encountered in the well.
 - 2) Any waste fluids circulated from the well to surface, including excess cement, will be stored in steel tanks and then disposed of at an approved disposal facility.
 - 3) Notify BLM and NMOCD prior to beginning well-work operations. Comply with all BLM and NMOCD regulations. Obtain approval from BLM and NMOCD prior to making any changes or adjustments to the procedure.
 - 4) Plugs will be adjusted as necessary depending on the results of the RCBLs.
 - 5) Wait on cement, tag, and spot additional cement plugs as necessary depending on results of casing pressure tests.
 - 6) Hold safety meetings daily (minimum) with all personnel on location. Record tubing, casing, and bradenhead pressures daily on reports.
 - 7) Test and install rig anchors, if necessary (if rig does not have a base-beam).

PROCEDURE:

- 1) MIRU daylight pulling unit and associated equipment.
- 2) Blow down well. Kill well. ND WH. NU BOPE and test.
- 3) TOH and LD production tubing
- 4) PU and TIH with 2-7/8" work-string and 5-1/2" casing scraper to 4,854'. TOH. LD scraper.
- 5) PLUG #1: CLIFFHOUSE & POINT LOOKOUT PERFS, CLIFFHOUSE TOP

TIH with 5-1/2" CICR on 2-7/8" work-string. Set CICR. Prior to pumping any cement, load casing with water and pressure test to 550 psi for 30 minutes. MIRU Cementers. Pump cement. TOH.

5-1/2" CICR: 4,817' Plug Coverage: 4,717' 4.817' to Cement Volume: 17 sx ABOVE CICR 17 sx **TOTAL**

- 6) MIRU WLU. Run RCBL on 5-1/2" casing from 4,717' (top of cement plug #1) to surface. Review RCBL and send copies to BLM and NMOCD before proceeding. RD WLU.
- 7) PLUG #2: CHACRA TOP

TIH with 2-7/8" work-string. Spot balanced plug. TOH.

Plug Coverage: 3,637' 3,737' to

Cement Volume: ABOVE CICR 17 sx

17 sx TOTAL

- 8) TIH with 5-1/2" CICR on 2-7/8" work-string. Set CICR @ 3,280'. TOH.
- 9) MU casing cutting tools and TIH/RIH. Depending on conditions encountered in the well, a tubing-conveyed mechanical cutter or wireline-conveyed chemical cutter may be used to cut the casing. Cut 5-1/2" casing at 3,070' (50' above 5-1/2" casing's TOC). TOH/POH with cutting tools. MIRU casing crew & casing handling tools. TOH and LD 5-1/2" casing. RDMO casing crew.
- 10) TIH with 7-5/8" casing scraper to 3,070' (7" casing stub). TOH. LD scraper.
- 11) RU WL. Load hole with water. Run RCBL on 7-5/8" casing from 3,070' (5-1/2" casing stub) to surface. Review RCBL and send copies to BLM and NMOCD before proceeding. RD WL.

12) PLUG #3: 7-5/8" CASING SHOE, 5-1/2" CASING STUB, PICTURED CLIFFS TOP & FRUITLAND TOP

TIH 2-7/8" work-string. Prior to pumping any cement, load casing with water and pressure test to 550 psi for 30 minutes. Pump cement. Pull up hole.

5-1/2" CICR: 3,280' 5-1/2" Casing Stub: 3,070'

Plug Coverage: 2,906' to 3,280'

Cement Volume: 78 sx ABOVE CICR
78 sx TOTAL

13) PLUG #4: KIRTLAND TOP & OJO ALAMO TOP

Spot balanced plug. TOH.

Plug Coverage: 2,265' to 2,560' Cement Volume: 79 sx

79 sx TOTAL

14) PLUG #5: NACIMIENTO TOP

RIH with WL. Perf squeeze holes. TIH with 7-5/8" CICR on 2-7/8" work-string. Set CICR. Pump cement. TOH.

Squeeze holes: 1,149' 7-5/8" CICR: 1,099'

Plug Coverage: 1,049' to 1,149'

Cement Volume: 45 sx THRU CICR

23 sx ABOVE CICR
68 sx TOTAL

15) PLUG #6: SURFACE CASING SHOE & SURFACE PLUG

RIH with WL. Perf squeeze holes. TIH with 7-5/8" CICR on 2-7/8" work-string. Set CICR. Establish circulation down work-string and out bradenhead. Pump cement. TOH and LD work-string.

Squeeze holes: 230' 7-5/8" CICR: 180'

Plug Coverage: 0' to 230'

Cement Volume: 106 sx THRU CICR

53 sx *ABOVE CICR*159 sx *TOTAL*

- 16) ND BOPE. Cut off casing and wellhead (minimum of 3' below finished grade). Top off annulus and casing with cement, if required. RDMO cement equipment. Install below-grade P&A marker (minimum 1/4" thick steel plate with weep hole, welded in place covering the well, well information permanently inscribed). RDMO.
- **17)** Complete surface reclamation as per approved reclamation plan.

Created by: A. Bridge 5/4/2020

SURFACE RECLAMATION PLAN

Rincon Unit 078 API No. 30-039-07081 NMNM-078406C/NMNM-0012209

May 2020



ENDURING RESOURCES IV, LLC

200 Energy Court Farmington, New Mexico 87401 Phone: (505) 636-9720

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Operator:	Enduring Resources IV, LLC (Enduring)
Well Name and Number:	Rincon Unit 078
API Number:	30-039-07081
Legal Location:	SW 1/4 of the NW 1/4 Sec. 10, T23N, R06W

1 Introduction

This reclamation plan has been prepared to meet the requirements and guidelines of Onshore Oil and Gas Order No. 1 and supplemental guidance there to; including, the BLM's Gold Book. This plan describes the final reclamation procedures, any changes if applicable based on the surface managing agency designated final land use plan, and any mitigation measures associated with final reclamation performed by the operator. Final reclamation is considered complete when the success criteria outlined in this plan has been met and a final abandonment notice (FAN) has been received.

Enduring or their appointed contractor would call New Mexico One-Call (or equivalent) to identify the location of any marked or unmarked pipelines or cables located in proximity to the project area or any other areas anticipated to have ground disturbance at least two working days prior to ground disturbance.

Enduring or their appointed contractor would notify the BLM-FFO by phone or email 48 hours in advance of dirt work reclamation activities.

The Enduring Resources IV, LLC contact person for this reclamation plan is:

Casey Haga Surface Permitting Specialist Enduring Resources IV, LLC 200 Energy Court Farmington, New Mexico 87401 505-636-9752

2 Pre-Reclamation Site Inspection

A pre-reclamation site inspection for the Rincon Unit 078 was conducted on April 15, 2020 by Casey Haga and David Rogers with Enduring and May 6, 2020 by Casey Haga with Enduring, Randy Mckee with BLM-FFO, and Katie Spearman with Enterprise. During the inspections, an inventory of site conditions and equipment was conducted. Reclamation procedures were discussed, including recontouring, silt trap placement, seed mix selection, weed abatement procedures and any additional requirements needed to assist in reclaiming the area to as close to pre-disturbance conditions as practicable.

2.1 Vegetation Community

The vegetation community that best represents the surrounding project area is Piñon/Juniper woodland with sagebrush shrubland openings and understory. Since the location sits within an area of thinly scattered Piñon/Juniper trees, the reclaimed area will be seeded with BLM's sagebrush seed mix. During reclamation, some of the established trees within the location will be preserved.

2.2 Proposed Reclamation Seed Mix

Disturbance will be recontoured and topsoil will be redistributed and prepared for seeding. Ripping,

disking, and seeding of the site will be done by Enduring's construction contractor. The seed mix is listed in detail in Table 1 below.

Table 1. Reclamation Seed Mix

Common Name	Scientific Name	Season	Form	PLS lbs/acre ¹
Fourwing Saltbrush	Atriplex canescens	Cool	Shrub	2.0
Winterfat	Krascheninnikovia lanata	Cool	Shrub	2.0
Indian Ricegrass Rimrock	Achnatherum hymenoides	Cool	Bunch	4.0
Blue Grama	Bouteloua gracilis	Warm	Sod	2.0
Sand Dropseed	Sporobolus cryptandrus	Warm	Bunch	0.5
Western wheatgrass	Pascopyrum smithii	Cool	Sod	4.0
Bottle brush squirreltail	Elymus elymoides	Cool	Bunch	3.0
Small burnet	mall burnet Sanguisorba minor		Forb	2.0
Blue flax	Linum lewisii	Cool	Forb	0.25

¹Based on 60 pure live seeds (PLS) per square foot, drill seeded; double this rate (120 PLS per square foot) if broadcast or hydro-seeded.

2.3 Pre-Reclamation Weed Survey

No New Mexico Department of Agriculture Class A- or B- listed weed species were identified within the project area.

2.4 Contaminated Soil and Soil Amendments

There was no contaminated soil observed on the surface of location. Once equipment is removed, further inspection of the soil under these facilities would be conducted to ensure no leaks had occurred contaminating the soil beneath. Soil tests may occur if determined to be necessary. If contaminated soil is encountered, it will be removed and hauled to an approved landfarm for remediation.

2.5 Equipment and Facility Removal

- All Production equipment including steel tank, below grade pit, separator, meter run, and methanol tank will be removed from location.
- Ancillary equipment including concrete slabs, fencing, anchors, and flow lines (above ground and/or buried) will also be removed and disposed of appropriately or reused.
- Debris and trash will be removed and disposed of at approved facilities.
- Well-connect pipeline will be abandoned at the dogleg on location. Removal of the dogleg is not required.
- There is no catholic groundbed on location. The service line from adjacent location will be removed.
- The gravel present on location and access will be stripped as practicable and spread over nearby roadway. Any remaining gravel that cannot be separated from soil adequately for reuse will be buried in the cut slope.
- Wellhead will be removed upon plugging and an above ground well monument installed.

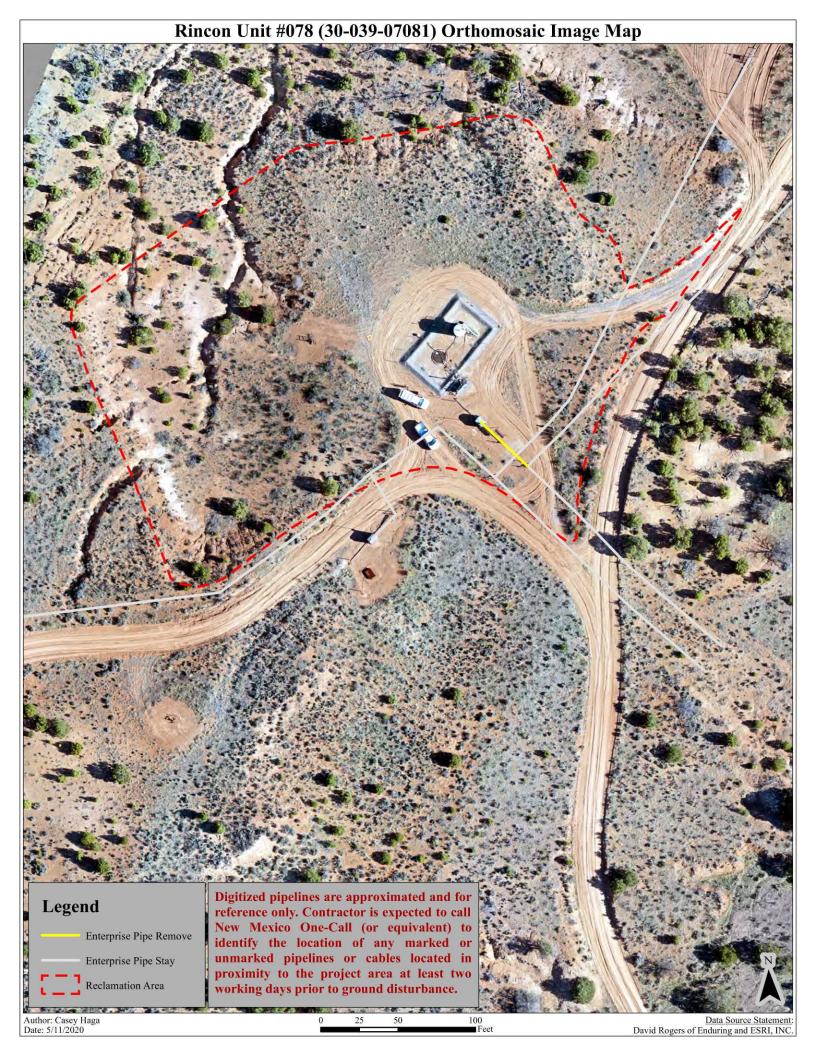
2.6 Equipment and Facilities to Remain

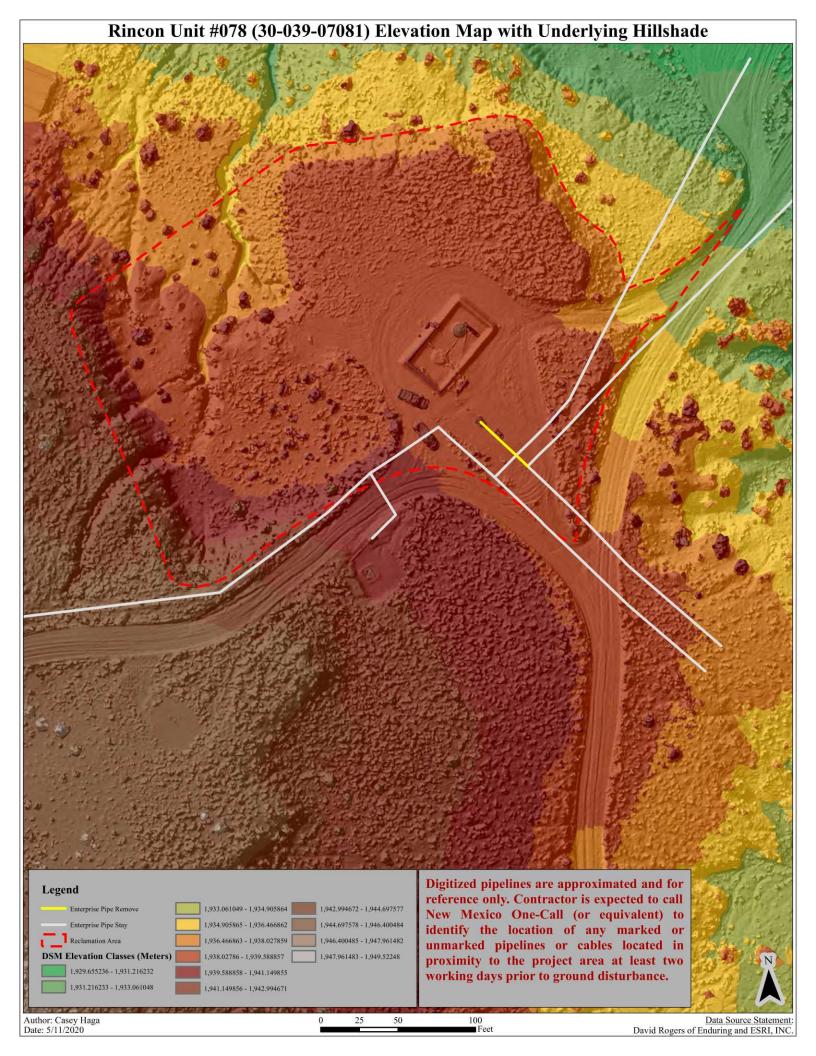
- Please see the project maps provided in section 2.7 to see the approximate locations of the infrastructure described below.
- On the southern side of location, there is a meter run and above grade steel pit. This

- equipment serves the neighboring Rincon Unit 054 well. This equipment will not interfere with final reclamation of the Rincon Unit 078 location; thus, it will not be removed or relocated.
- On the southern side of location, there is a dogleg where the aforementioned meter ties to an existing pipeline that runs parallel to the existing roadway to remain. This dogleg will not interfere with final reclamation of the Rincon 078 location; thus, it will not be removed or relocated.
- There are two doglegs and buried gathering pipelines on the eastern side of location; these doglegs and pipelines will remain in place. Enduring will remove what fill material they can from the lines if they are deep in the fill. If not, the fill material over these lines will remain in place. Enduring and the BLM agreed, that the minimal amount of fill material lost to these lines will not affect final reclamation.

2.7 Project Area Maps

See project area maps on the following two pages.





3 Reclamation Techniques

All activities associated with the abandonment of the Rincon Unit 078 well are limited to areas approved in the Application for Permit to Drill (APDs) and/or the Right-of-Way (ROW) Grants.

3.1 P&A Marker

An above grade steel pipe well monument will be fixed to the top of the wellbore with all information required per regulation legibly welded on the pipe.

3.2 Vegetation and Site Clearing

Vegetation that has re-established within the interim reclaimed portions of the disturbance area will be mulched and incorporated into the topsoil as additional organic matter. There are some mature established trees within the northwestern side of location that Enduring will avoid removing if possible.

3.3 Topsoil Stripping, Storage, and Replacement

The upper 6 inches of topsoil (if available) will be stripped following vegetation and site clearing. Topsoil will not be mixed with the underlying subsoil horizons and will be temporarily stockpiled separate from subsoil or other excavated material during recontouring. Topsoil will be spread evenly over sub-soils upon completion of recontouring operations and prior to final seedbed preparation. Spreading shall not be done when the ground or topsoil is to wet to adequately support construction equipment.

3.4 Recontouring

All disturbed areas related to the Rincon Unit 078 will be recontoured to blend with the surrounding landscape, emphasizing, restoration of the existing drainage patterns and landforms to preconstruction condition to the extent practicable.

3.4.1 Well Pad

Prior to recontouring the location, any gravel that can be removed will be spread over surrounding roadways. The well pad will be contoured to blend with the surrounding landforms removing signs of cut/fill slopes. The fill slope on the northern and eastern side of the location will be pushed (dozer)/excavated (excavator)/ or carried (belly scraper) and placed within the cut slope on the western and southern side of location. Natural rolling contours will be implemented to break up the surface and aid in removing signs of the well pad once vegetation establishes. There is a significant erosive drainage that has established through the northwestern side of location. This drainage will be filled within the reclamation area designated on the above maps. To slow down continued erosion of this drainage, a series of at least two silt traps will be established. These silt traps will help slow the velocity of storm water through location and allow settling of suspended materials. The exact location and size of these silt traps will be determined during reclamation to best fit the recontoured terrain. Excelsior waddles or other biodegradable material may be used to prevent cutting and sediment transportation if needed within diversions and spillways.

3.4.2 Access Road

There are two ingress/egress access roads to the Rincon Unit 078 location. The roadway that is subgrade leaving the eastern side of location will be reclaimed as described below. The roadway that passes through location on the southern end will not be reclaimed as it serves access to neighboring wells. The access road to be reclaimed will have all gravel stripped and placed on nearby roadways.

The roadway will be brought to grade, recontoured, and if necessary, small silt trap depression established to prevent erosion.

3.4.3 Pipeline Corridor

The well-connect pipeline serving this well will be cut and capped at the dogleg on location. Meter run and methanol tank will be removed. The dogleg may stay as the gathering line it ties to will remain through location as described in Section 2.6.

3.5 Water Management/Erosion Control Features

Multiple silt traps will be incorporated into the reclamation. At least two of these silt traps will be established on the western side of location to generate material to fill the erosive drainage through location and slow the velocity of storm water and allow settling of suspended materials. The exact location and size of these silt traps will be determined during reclamation to best fit the recontoured terrain. As practical, all water shed from west of the reclamation area and the north borrow ditch of the adjacent roadway will be diverted to these silt traps. Diversions will be via rolling berms as opposed to cut diversion ditches. If not all water can be diverted, appropriate erosion control would be implemented downgradient. Excelsior waddles or other biodegradable material may be used to prevent cutting and sediment transportation if needed within diversions and spillways. If additional diversions or silt traps are found to be necessary during reclamation dirt work, they will be installed at that time. Ripping and disking would be conducted perpendicular to the recontoured slopes to promote water retention and provide terracing to prevent erosion and rills. Additional erosion control or water management features that may be used, if needed, include (but are not limited to) water bars or rolling dips, check dams, erosion control blankets or geotextiles, and straw wattles.

3.6 Seedbed Preparation

Seedbed will be prepped after the location has been contoured and topsoil has been evenly redistributed. Seedbed preparation within compacted areas will include ripping to a minimum depth of 18 inches, unless bed rock is encountered at a shallower depth, and spacing furrows 2 feet apart. Ripping will be conducted perpendicularly in two phases, where practicable. If large clumps/clods result from the ripping process, disking will be conducted perpendicular to slopes in order to provide terracing and minimize runoff and erosion. Final seedbed preparation will consist of raking or harrowing the spread topsoil prior to seeding to promote a firm (but not compacted) seedbed without surface crusting.

3.7 Seeding

Prior to seeding, the contractor is to notify Enduring resources that dirt work is complete. The BLM and Enduring will inspect the recontoured location and silt traps prior to seeding. The seed mix chosen for this project area is listed in Table 1. Seeding will occur immediately following recontouring and seedbed preparation. A disc-type seed drill with two boxes for various seed sizes will be utilized for seeding. Enduring or its reclamation subcontractor will ensure that perennial grasses and shrubs are planted at the appropriate depth. Intermediate size seeds (such as wheatgrasses and shrubs) will be planted at a depth of 0.5 inch, larger seeds (such as Indian ricegrass) will be planted at a depth of 1 to 2 inches, and small seeds (such as sand dropseed) will be planted at a depth of 0.25 inch. In situations where differing planting depths are not practicable with the equipment being used, the entire mix will be planted no deeper than 0.25 inch. A drag, packer, or roller will follow the seeder to ensure uniform seed coverage and adequate compaction. Seeding will be run perpendicular to slopes in order to minimize runoff and erosion.

Drill seeding may be used on well-packed and stable soils that occur on gentler slopes and where

tractors and drills can safely operate. Where drill seeding is not practical, the contractor will hand-broadcast seed using a "cyclone" hand seeder or similar broadcast seeder. Galleta and seeds the like may also be broadcast; due to the light fluffy nature of these seeds, they do not seed well through a drill seeder. Broadcast application of seed requires a doubling of the drill-seeding rate. The seed will then be raked into the ground so the seed is planted no deeper than 0.25 inch below the surface.

3.8 Vegetation Reclamation Standards

Reclamation will be deemed successful when a self-sustaining, vigorous, diverse, native (or otherwise accepted) plant community is established on site, with a density meeting required foliar cover in table 2 below. Erosion control will be deemed successful when the aforementioned vegetation has established and there is no gullying, headcutting, deep or excessive rilling, and slumping (unless intentionally depressed (silt trap) for velocity and volume control).

Table 2. Reclamation Goal for Sagebrush/Grass Community

Functional Group	Percent (%)	Common Species
	Foliar Cover	
Trees/Shrubs/Grasses/Forbs	>35	Utah juniper, Piñon pine; big sagebrush, four-wing
		saltbush, antelope bitterbrush, alkali sacaton, Western
		wheatgrass, Indian ricegrass, galleta, sand dropseed,
		scarlet globemallow, wooly Indian wheat, fleabane,
		Penstemon spp., buckwheat, threadleaf groundsel.
Invasive/undesirables	≤10	Plants that have the potential to become a dominant
10% allowed toward		species on a site where its presence is a detriment to
meeting standard of 35%.		revegetation efforts or the native plant community.
meeting standard of 35%.		Examples of invasive species include cheatgrass, Russian
		thistle, kochia.

3.9 Noxious and Invasive Weed Control

Should any noxious or invasive weeds be documented on any portions of the action area after earthwork and seeding activities, the BLM-FFO weed coordinator would provide Enduring with specific requirements and instructions for weed treatments, including the period of treatment, list of approved herbicides, required documentation to be submitted to the BLM-FFO after treatment, and any other site-specific instructions that may be applicable.

4 Monitoring Requirements

Enduring will complete a site assessment of reclamation success on an annual basis to track and confirm successful reclamation of the site in accordance with the success criteria outlined in Table 2 above. When vegetation on the reclaimed site appears to meet the success criteria, Enduring will document that standards have been obtained and submit a Final Abandonment Notice (FAN).

5 Pre-Reclamation Site Photographs



Figure 1. Well sign.



Figure 2. Access Road 1 entering location looking northwesterly.



Figure 3. Access Road 2 entering location looking westerly.



Figure 4. Roadway to remain through location looking southwest.



Figure 5. Roadway to remain through location looking southeast.



Figure 6. Meter run and above grade pit to remain on the edge of the reclaimed location.



Figure 7. Enterprise dogleg to remain on the edge of the reclaimed location.



Figure 8. Two Enterprise doglegs to remain within the reclaimed location.



Figure 9. Production equipment to be removed.



Figure 10. Production equipment to be removed.



Figure 11. Production equipment to be removed.



Figure 12. Measurement equipment to be removed.



Figure 13. Fill slope looking north-northwest from the eastern side of location.



Figure 14. Fill slope looking south-southeast from the northeast corner of location.



Figure 15. Cut slope looking northwest from the southwest corner of location.



Figure 16. Erosion through location where silt traps will be incorporated into reclamation.



Figure 17. Erosion atop cut slope.

6 References

- 43 CFR Part 3160, "Onshore Oil and Gas Order No. 1; Onshore Oil and Gas Operations; Federal and Indian Oil and Gas Leases; Approval of Operations," 72 Federal Register 44 (March 2007), pp. 10328-1033
- BLM. 2013a. Farmington Field Office Bare Soil Reclamation Procedures. Available at: http://www.emnrd.state.nm.us/MMD/AML/documents/FFOBareSoilReclamationProcedures 2-1-13.pdf. Accessed October 2019.
- U.S. Department of the Interior U.S. Department of Agriculture (USDI-USDA). 2007. Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development. BLM/WO/ST-06/021+307/REV 07. Bureau of Land Management. Denver, Colorado. 84 pp.