

All distances must be from the outer boundaries of the Section.

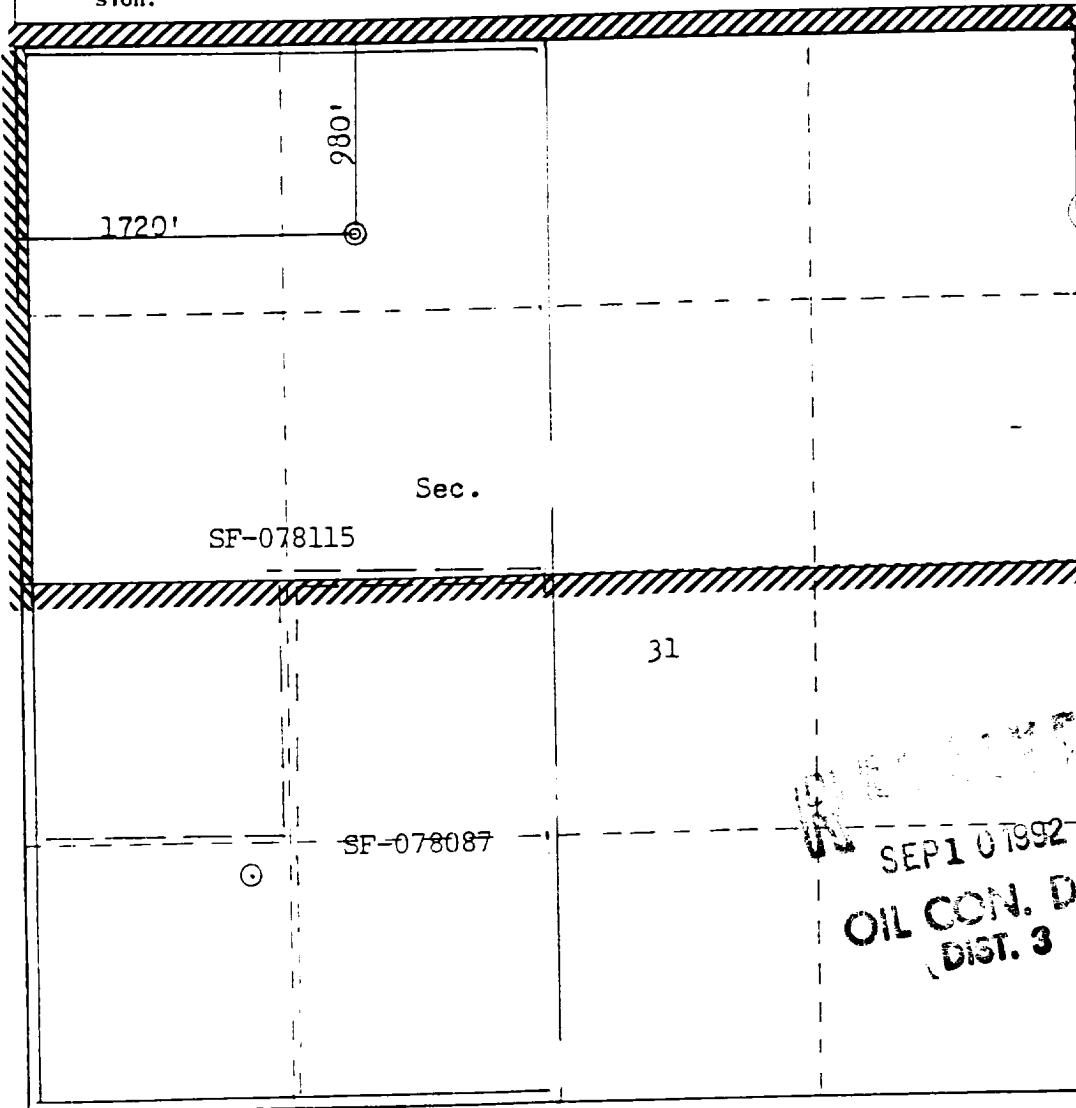
Operator SOUTHLAND ROYALTY COMPANY		Lease Thurston		Well No. 1A	
Section 31	Township 31N	Range 11W	County San Juan		
Footage Location of Well: 980 feet from the North line and 1720 feet from the West line					
Section 6013		Mesa Verde		Blanco	
Dedicated Acreage: 320		Acres			

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☒ Yes ☐ No If answer is "yes," type of consolidation Communitization

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.)

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name
Regulatory Affairs

Position

Company
Southland Royalty Company

Date

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 knowledge and belief.

SEP 10 1992
OIL CON. DIV.
DIST. 3

Date Surveyed
December 18, 1990

Registered Professional Engineer
and Land Surveyor

Fred B. Kerr Jr.

Certificate No. **8. KERR**

GRENIER #23E MESAVERDE RECOMPLETION
Procedure
C 31 31 11

1. Comply to all NMOC, BLM, & MOI, rules & regulations. MOL and RU completion rig. NU 6" 900 series BOP with flow tee and stripping head. Test operation of rams. NU blooie line and 2-7/8" relief line.
2. Set blanking plug in 2-3/8" tbg in S.N. @ 6987' & pressure test tbg to 2500 psi. TOH w/7019' 2-3/8" tbg & replace all bad jts. Run 4-1/2" csg scraper on 2-3/8" tbg to 6852' (50' above top Dakota perf). TOH. Run 4-1/2" cmt ret on 2-3/8" tbg & set @ 6852'. Sting out of cmt ret & pressure test tbg. Est rate into Dakota perfs & sq w/28 sx cmt (this will fill csg & Dakota perfs w/100% excess cmt). Sting out of ret & dump 5 sx cmt on top ret. Reverse out. Pressure test csg to 1000#.
3. Spot 28 bbl mud from 6852'-5100': 15# sodium bentonite w/non-fermenting polymer, 9# gal weight, & 50 qs vis or greater. TOH.
4. MI wireline truck. Set 4-1/2" BP @ 5100' & top w/3 sx sand. Pressure test csg & BP to 2500 psi. Perf w/3-1/8" HCG w/10 gr Owen 316 charges which have an average penetration in Berea of 14.7" & average perf diameter of 0.28" @ 4990', 87', 83', 35', 4883', 79', 72', 53', 43', 39', 34', 23', 20', 17', 14', 11', 08', 05', 02', 4799', 96', 93', 90', 87', 84', 81', 78', 71'w/1 spf. Total 28 holes.
5. Fill 10 - 400 bbl. frac tanks with 2% KCL water. Filter all water to 25 microns. Usable water required for frac is 3410 bbls.
6. TIH w/4-1/2" pkr on 2-3/8" tbg & set @ 4550'. Pressure test tbg to 4500 psi. With 500# held & recorded on backside, breakdown & attempt to balloff Mesaverde perfs w/2500 gal 15% HCL acid & 56 perf balls. Max pressure = 4500 psi. Acid to contain 1 gal/1000 aqua flow, 2 gal/1000 LT-21 (clay & silt suspenders), 5 gal/1000 XA-2L (Fe control), and 2 gal/1000 I17 (corrosion inhibitor). Lower pkr to 5000' to knock off balls. TOH.
7. Frac Mesaverde down 4-1/2" csg with 150,000# 20/40 Arizona sand in 2% KCL slick water @ 40 BPM. All sand to be tagged with 0.40 mCi/1000# Ir-192 tracer. Max. pressure is 2500 psi and estimated treating pressure is 2200 psi. Treat per the following schedule:

<u>Stage</u>	<u>Fluid (Gals.)</u>	<u>Sand Vol. (lbs.)</u>
Pad	40,000	----
0.5 ppg	20,000	10,000
1.0 ppg	60,000	60,000
1.5 ppg	20,000	30,000
<u>Flush</u>	<u>3,110</u>	<u>----</u>
Totals	140,000	100,000#

If well is on a vacuum, underflush by about 25%. TOH.

GRENIER #23E - MV RECOMPLETION PROCEDURE
Page 2

Treat frac fluid with the following additives per 1000 gallons:

- * 0.5 gals WFR-2 (Friction Reducer)
- * 1.0 gal. SAA-02 (Surfactant)
- * 2% KCL

8. Open well through choke manifold & monitor flow. Flow @ 20 bbl/hr, or less if sand is observed. When well ceases to flow, proceed with Step # 9.
9. TIH w/notched collar on 2-3/8" tbg & C.O. to 5100'. Take pitot gauges when possible.
10. When wellbore is sufficiently clean, TOH and run after frac gamma-ray log from 5100'-4200'.
11. TIH with 2-3/8" tbg with standard seating nipple one joint off bottom. Land tbg @ 4850'. Take final pitot gauges, water samples, and gas samples.
12. Replace bad valves on wellhead w/rebuilt valves. ND BOP and NU wellhead. Rig down & release rig.

Approved: M. J. Kirkpatrick for J.A.H.
J. A. Howieson 7-6-92

VENDORS:

Wireline:	Blue Jet	325-5584
Frac & Cmt:	Howco	325-3575
RA Tagging:	Pro-Technics	326-7133

PMP

GRENIER #23E

UNIT C SECTION 31 T31N R11W
SAN JUAN COUNTY, NEW MEXICO

