

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
BLM

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals.

5. Lease Designation and Serial No.

NMSF 078890

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

8. Well Name and No.

ROSA UNIT 288

9. API Well No.

30-039.25293

10. Field and Pool, or Exploratory Area

Basin Frtld Coal

11. County or Parish, State

Rio Arriba, NM

SUBMIT IN TRIPLICATE

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator

Williams Production Company

3. Address and Telephone No.

P.O. Box 3102, Tulsa, OK 74101

918/561-6250

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

1840' FSL, 1020' FWL

Section 4, T31N-R4W

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

TYPE OF SUBMISSION

- ☒ Notice of Intent
☐ Subsequent Report
☐ Final Abandonment Notice

TYPE OF ACTION

- ☐ Abandonment
☐ Recompletion
☐ Plugging Back
☐ Casing Repair
☐ Altering Casing
☒ Other frac treatment

- ☐ Change of Plans
☐ New Construction
☐ Non-Routine Fracturing
☐ Water Shut-Off
☐ Conversion to Injection
☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

This well will be fracture stimulated in an isolated upper Fruitland coal seam using the same frac design as described in the attached Treatment Report for the Rosa Unit #287 well.

RECEIVED
JUN 21 1999

OIL CON. DIV.
F. B. I.

14. I hereby certify that the foregoing is true and correct

Signed

Steg Katigis

Title

Steg Katigis

Date

5/26/99

(This space for Federal or State office use)

AS/Duane W. Spencer

Team Lead, Petroleum Management

Date

June 16 1999

Approved by

Conditions of approval, if any:

Title

Title 18 U.S.C. Section 1001, makes 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 statement or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side
NMOCD

J. K. Edwards Associates Inc.
1401 17th Street, Suite 1400
Denver, Colorado 80202

Rosa Unit #288

Sec. 4, T31N, R4W
RIO ARRIBA, NM

Delta Frac
Upper Fruitland Coal

Prepared for: Mr. Keith Edwards

5/24/99

Version
1

Prepared by:
Randy Natvig
Halliburton Energy Services
410 17th Street
Suite 900
Denver, Colorado 80202

(303) 899-4706



The Future Is Working Together.



***Halliburton appreciates the opportunity to present
this proposal and looks forward to being of service to you***

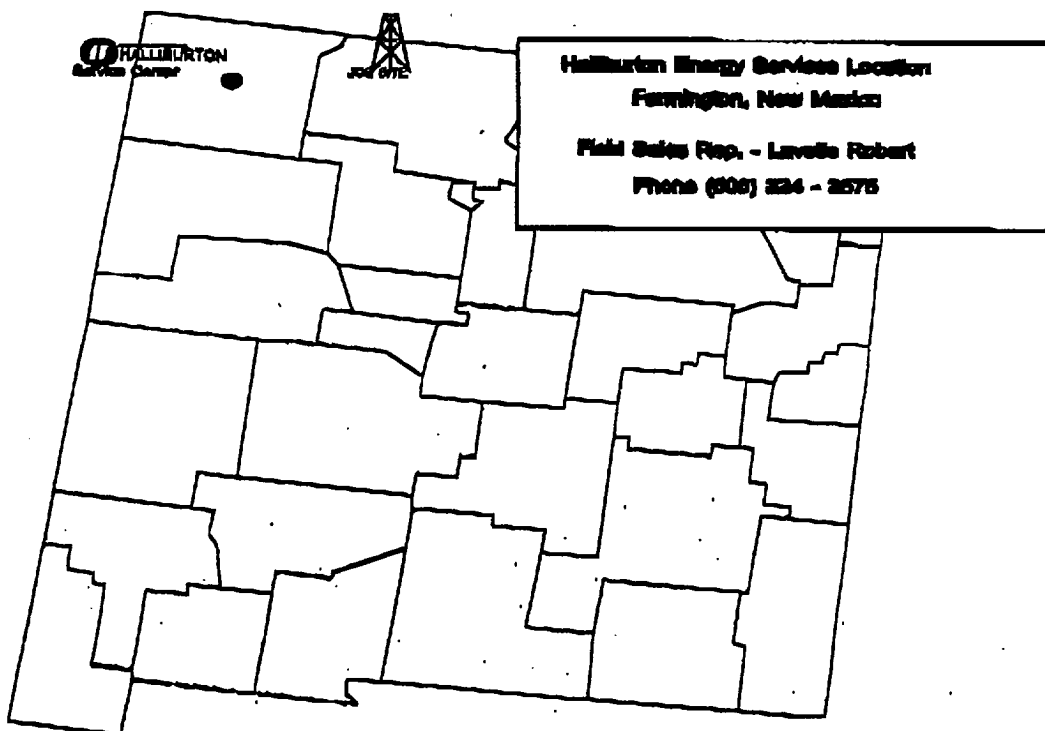
Foreword

Dear Keith,

Halliburton Energy Services welcomes the opportunity to submit the attached fracture stimulation services proposal for use on the Rosa Unit #287 well in Rio Arriba County, New Mexico. For your review we have included a procedure and cost estimate for stimulating the above mentioned well.

Halliburton Energy Services will provide the highest quality products and services currently available in the oil and gas industry. Stimulation services will be performed by our Farmington, New Mexico personnel. Should you have any questions concerning the proposal or any of our product service lines please contact me at (303) 899-4706 or our Farmington facility.

Respectfully,
Randy Natvig
Technical Advisor





Delta Frac

Calculations

Pw = Wellhead Treating Pressure
Pw = BHTP - Ph + Pf + Ppf
Pw = ISIP + Pf + Ppf

BHTP = Bottom Hole Treating Pressure
= 1 psi/ft (Fracture Gradient)
= 1 psi/ft * 3956 ft
= 3956 psi

Ph = Hydrostatic Head of Clay Fix II Water
= 0.4312 psi/ft * 3956 ft
= 1706 psi

Pf = Friction Loss In Pipe
= 220 psi at 20 bbl/min

Ppf = Perforation Friction
= 0 psi

Pw = 3956 - 1706 + 220 + 0
= 2470 psi

HHP = Hydraulic Horsepower
= (2470 * 20) / 40.8

HHP = 1211



Delta Frac

Job Recommendation**DELTA FRAC DETAILS: (22,000 gal)**

Base Fluid	20 lb DELTA FRAC
Mixing Fluid	Fresh Water*
Buffer/Crosslinker	2 gal/M BC-140
Biocide	0.19 lbs/M BE-6
Clay Control	2 gal/M CLAYFIX II
Breaker	1.5 lbs/M GBW-30
Surfactant	1.00 gal/M LOSURF-300
Proppant Flowback Control	.18 gal/sk SANDWEDGE (SLF only)

FLUSH DETAILS: (3,750 gal)

Mixing Fluid	Fresh Water*
Biocide	0.19 lbs/M BE-6
Clay Control	2 gal/M CLAYFIX II
Breaker	2 lbs/M GBW-30
Gelling Agent	2.50 gal/M LGC-8
Surfactant	1.00 gal/M LOSURF-300

*Customer Supplied



Delta Frac

Job Procedure

Frac down 5 1/2" casing at 20 bpm as per the following schedule:

STAGE	FLUID	CONC	PROPPANT
1 - Pad	7,000 gal Delta Frac		
2 - SLF	3,500 gal Delta Frac	.5 lb/gal	16/30 ARIZONA (1,750 lb)
3 - SLF	3,500 gal Delta Frac	1 lb/gal	16/30 ARIZONA (3,500 lb)
4 - SLF	3,500 gal Delta Frac	1.5 lb/gal	16/30 ARIZONA (5,250 lb)
5 - SLF	3,500 gal Delta Frac	2 lb/gal	16/30 ARIZONA (7,000 lb)
6 - SLF	1,000 gal Delta Frac	3 lb/gal	16/30 ARIZONA (3,000 lb)
7 - Flush	3,750 gal Flush		

Totals:

Sand Required 20,500 lb 16/30 ARIZONA

Water Required 25,750 gal. + Tank Bottoms