

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
OMB No. 1004-0135  
Expires November 30, 2000

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or reenter an abandoned well. Use Form 3160-3 (APD) for such proposals.

5. Lease Serial No.

SF 078477

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.

Nordhaus Federal #8

9. API Well No.

30-039-27590

10. Field and Pool, or Exploratory Area

Ballard Pictured Cliffs

11. County or Parish, State

Rio Arriba

SUBMIT IN TRIPLICATE - Other instructions on reverse side

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator

Great Western Drilling Co. c/o Walsh Engineering

3a. Address

7415 E. Main, Farmington, NM, 87402

3b. Phone No. (include area code)

505-327-1892

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

1955' FSL and 1835' FEL, Sec. 19, T25N, R7W

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

TYPE OF SUBMISSION	TYPE OF ACTION			
<input 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 checked="" type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<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 type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operations (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 recompleat 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 performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once Testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Great Western Drilling completed the Ballard Pictured Cliffs in this well as per the attached treatment report.

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

Name (Printed/Typed)

Paul C. Thompson, P.E.

Title

Agent

Signature

*Paul C. Thompson*

Date

June 14, 2004

THIS SPACE FOR FEDERAL OR STATE USE

ACCEPTED FOR RECORD

Approved by

Title

Date

AUG 03 2004

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

FARMINGTON FIELD OFFICE  
BY *RB*

Title 18 U.S.C. Section 1001, 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.

(Instructions on reverse)

NMOC

**FRACTURE TREATMENT REPORT**

Operator: Great Western Drilling Co. Well Name: Nordhaus Federal #8  
Date: 8-Jun-04  
Field: Ballard Pictured Cliffs Location: 19/25N7W County: Rio Arriba State: NM  
Stimulation Company: Key Pumping Service Supervisor: Paul Thompson

Stage #: 1/2 Pictured Cliffs

Sand on location: Design: 5000# / 60,000# Weight ticket: 5,420# / 60,080 Size/type: 40/70 Az / 20/40 Brady

Fluid on location: No. of Tanks: 1 Strap: 20 Amount: 400 Usable: 360

Perforations: Depth: 2133-39, 2153-60, 2166-85 Total Holes: 66 PBTD: 2328' KB  
Shots per foot: 2 spf EHD: 0.36" Loggers TD

Breakdown: Acid: 500 gal of 15% HCl  
Balls: None  
Pressure: 550 psi Rate: 2.6 BPM  
Formation broke at 2190 psi

Stimulation: ATP: 1450 psi AIR: 30 BPM  
MTP: 2190 psi MIR: 36 BPM

	Sand Stage	Pressure	Rate	BHTP	Foam Quality
ISIP: 1240	pad	1550	36		72.0
5 min: 1115	1.0 ppg 40/40	1599	34.9	1459	71.0
10 min: 1037	1.0 ppg 20/40	1630	34.7	1492	71.0
15 min: 960	2 ppg	1661	35.8	1509	71.0
	3 ppg	1236	25.1	1298	70.0
	4 ppg	1450	24.9	1525	70.0

Job Complete at: 1700 hrs. Date: 6/8/2004 Start flow back: 1845 hrs  
Total Fluid Pumped: 283 bbls with 520 psi  
Total Sand Pumped: 5000# 40/70 Total Sand on Formation: 65,000  
60,000# 20/40  
Total Nitrogen Pumped: 298,817 SCF

**Notes:**

All frac fluid was Bloomfield City water with 2% KCl, biocide, and 20#/1000 gal guar gel, crosslinker, surfactant, foamer, enzyme and encapsulated breakers. Dropped the injection rate from 35 BPM to 25 BPM during the 3 ppg stage due to a steeply declining Nolte plot. After the rate change the Nolte slope was positive for the rest of the job. The frac gradient based on the ISIP was 0.73 psi/ft. Installed the flow back manifold and opened the well to the pit at 1845 hrs 6/8/04 through a 4" choke.