

N.M. OIL

D. BO) OPER. OGRID NO. 2030ATE*
ONFORM APPROVED
OMB NO. 1004-0136
Expires: February 28, 1995

UNPPED

PROPERTY NO. 17610DEPARTMENT O
BUREAU OF LAPOOL CODE 83280EFF. DATE 9/27/95API NO. 30-025-3318

APPLICATION FOR PER

1a. TYPE OF WORK

DRILL ☒DEEPEN ☐

b. TYPE OF WELL

OIL
WELL ☐GAS
WELL ☒

OTHER

SINGLE
ZONE ☒MULTIPLE
ZONE ☐

2. NAME OF OPERATOR

Santa Fe Energy Resources, Inc.

3. ADDRESS AND TELEPHONE NO.

550 W. Texas, Suite 1330; Midland, TX 79701 (915) 682-6373

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)*

At surface

(B) 660' FNL & 1980' FEL

At proposed prod. zone

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*

27 miles NW Eunice, New Mexico

15. DISTANCE FROM PROPOSED*

LOCATION TO NEAREST
PROPERTY OR LEASE LINE, FT.
(Also to nearest drlg. unit line, if any)

660'

16. NO. OF ACRES IN LEASE

640

17. NO. OF ACRES ASSIGNED
TO THIS WELL

320

18. DISTANCE FROM PROPOSED LOCATION*
TO NEAREST WELL, DRILLING, COMPLETED,
OR APPLIED FOR, ON THIS LEASE, FT.

None

19. PROPOSED DEPTH

14,000

20. ROTARY OR CABLE TOOLS

Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)

3700' GR

22. APPROX. DATE WORK WILL START*

July 20, 1995

23.

PROPOSED CASING AND CEMENTING PROGRAM

R-111-P Potash

SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
26"	H-40 20"	94.0	450'	750 sx to circulate
17 1/2"	S-80 13 3/8"	68.0	3300'	2600 sx to circulate
11"	K-55 8 5/8"	32.0	5200'	TOC @ 3100' 200' inside 13 3/8"
7 7/8"	N-80 + S-95 5 1/2"	17.0	14000'	Stage collar @ 10000 TOC @ 4800'

We propose to drill to a depth sufficient to test the Morrow formation for gas. If productive, 5 1/2" casing will be cemented at TD. If non-productive, the well will be plugged and abandoned in a manner consistent with Federal Regulations. Specific programs as per Onshore Oil and Gas Order No. 1 are outlined in the following attachments:

Drilling Program

Exhibit A - Operations Plan
Exhibit B - BOP and Choke Schematic
Exhibit C - Drilling Fluids Program
Exhibit D - Auxiliary Equipment
Exhibit E - Topo Map of Location

Exhibit F - Plat Showing Existing Wells
Exhibit G - Well Site Layout
Surface Use and Operations Plan
H₂S Drilling Plan

Santa Fe Energy Resources, Inc. accepts all applicable terms, conditions, stipulations and restrictions concerning operations conducted on the leased land or portion thereof, as described above. Bond Coverage: Blanket Bond BLM Bond File No.: MT0750

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED

James P. O'BrienTITLE Agent for Santa Fe EnergyDATE 6-23-95

(This space for Federal or State office use)

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS
ATTACHED

PERMIT NO. _____

APPROVAL DATE _____

Application approval 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.
CONDITIONS OF APPROVAL, IF ANY:

APPROVED BY

H. L. Herbert J. Lucero

TITLE

Acting State Director

DATE

9-18-95

*See Instructions On Reverse Side

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated, on all types of lands and leases for appropriate action by either a Federal or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office.

ITEM 16: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable State or Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 17: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State Federal office for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on this reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal or State agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective production zone.

ITEM 22: Consult applicable Federal or State regulations, or appropriate officials, concerning approval of the proposal before operations are started.

NOTICE

The Privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR Part 3160.

PRINCIPAL PURPOSE: The information is to be used to process and evaluate your application for permit to drill or deepen an oil or gas well.

ROUTINE USES: (1) The analysis of the applicant's proposal to discover and extract the Federal or Indian resources encountered. (2) The review of procedures and equipment and the projected impact on the land involved. (3) The evaluation of the effects of proposed operation on surface and subsurface water and other environmental impacts. (4)(5) Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions, as well as routine regulatory responsibility.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if the operator elects to initiate drilling operation on an oil and gas lease.

BURDEN HOURS STATEMENT

Public reporting burden for this form is estimated to average 30 minutes per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management, (Aliterne) Bureau Clearance Officer, (WO-771), 1849 C Street, N.W., Washington, D.C. 20240, and the Office of Management and Budget, Paperwork Reduction Project (1004-0136), Washington, D.C. 20503.

The Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq) requires us to inform you that:

This information is being collected to allow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases.

This information will be used to analyze and approve applications.

Response to this request is mandatory only if the operator elects to initiate drilling operations on an oil and gas lease.

DISTRICT I
P.O. Box 1980, Hobbs, NM 88241-1980

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised February 10, 1994
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

DISTRICT II
P.O. Drawer DD, Artesia, NM 88211-0719

DISTRICT III
1000 Rio Braxos Rd., Aztec, NM 87410

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

DISTRICT IV
P.O. Box 2088, Santa Fe, NM 87504-2088

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 3D-025-33118	Pool Code 83280	Pool Name Quail Ridge (Morrow)
Property Code 17610	Property Name TOPAZ 31 FEDERAL 4200 SOS	Well Number 1
OGRID No. 203D5	Operator Name SANTA FE ENERGY RESOURCES, INC.	Elevation 3700

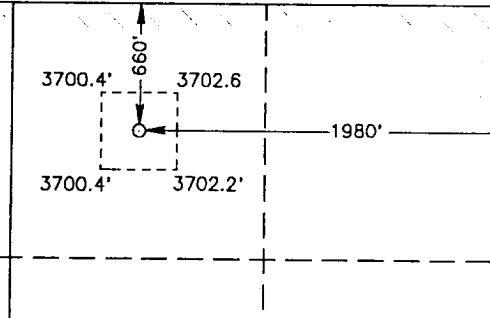
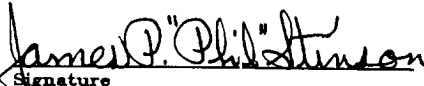
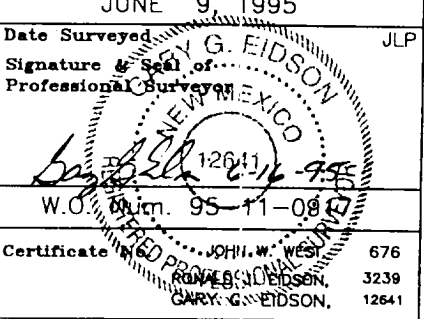
Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	31	20 S	34 E		660	NORTH	1980	EAST	LEA

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
Dedicated Acres 320	Joint or Infill	Consolidation Code	Order No.						

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

LOT 1 40.14 Ac.		OPERATOR CERTIFICATION I hereby certify the information contained herein is true and complete to the best of my knowledge and belief.  Signature James P. "Phil" Stinson Printed Name Agent for Santa Fe Energy Title 6-23-95 Date	
LOT 2 40.10 Ac.		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. JUNE 9, 1995 Date Surveyed Signature & Seal of Professional Surveyor  W.O. Num. 95-11-0917 Certificate No. 676 3239 12641	
LOT 3 40.06 Ac.			
LOT 4 40.02 Ac.			



DRILLING PROGRAM

SANTA FE ENERGY RESOURCES, INC.

Topaz "31" Fed Com No. 1

In conjunction with Form 3160-3, Application to Drill the subject well, Santa Fe Energy Resources, Inc. submits the following ten items of pertinent information in accordance with Onshore Oil & Gas Order No. 1.

1. **Geologic Name of Surface Formation:** Alluvium
2. **Estimated Tops of Significant Geologic Markers:**

Rustler Anhydrite	1,490'
Top of Salt	1,630'
Base of Salt	3,130'
Yates	3,310'
Delaware	5,400'
Bone Spring	8,350'
1st Bone Spring Sand	9,350'
Wolfcamp	11,250'
Strawn	12,250'
Atoka	12,500'
Morrow	12,850'
Lower Morrow	13,400'
Total Depth	14,000'

3. **The estimated depths at which water, oil or gas formations are expected:**

Water	None expected in area
Oil	Bone Spring 9400'-9500'
Gas	Morrow 13,300'-400'

4. **Proposed Casing Program:** See Form 3160-3 and Exhibit A
5. **Pressure Control Equipment:** See Exhibit B
6. **Drilling Fluid Program:** See Exhibit C
7. **Auxiliary Equipment:** A mud logging unit will be utilized to monitor penetration rate and hydrocarbon shows while drilling below the casing point at 5200.
8. **Testing, Logging and Coring Program:**

Drill Stem Tests: (all DST's to be justified on the basis of valid show of oil or gas):

Bone Spring	9400'-9500'
Morrow	13300'-13400'

Logging:

Dual Laterolog W/MSFL and Gamma Ray	5200'-14000'
Compensated Neutron/Litho-Density/Gamma Ray	5200'-14000'
Compensated Neutron/Gamma Ray (thru csg)	Surface-5200'
Borehole Compensated Sonic	5200'-14000'
Phasor Induction/SFL/Gamma Ray	5200'-14000'
Coring: No conventional cores are planned	

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DRILLING PROGRAM

Topaz "31" Fed Com No. 1

Page 2

9. Abnormal Conditions, Pressures, Temperatures & Potential Hazards:

No abnormal pressures or temperatures are anticipated. The estimated bottom hole temperature is 207 degrees Fahrenheit and the estimated bottom hole pressure is 3650 psi. No Hydrogen Sulfide or other hazardous gases or fluids have been encountered in offset wells, but it is reported to exist in the Yates formation, therefore we are submitting a Hydrogen Sulfide Drilling Operations Plan to cover the unlikely event. No major lost circulation zones have been reported in the offsetting wells.

10. Anticipated Starting Date and Duration of Operations:

Road and location work will not begin until approval has been received from the B.L.M. The anticipated spud date is July 20, 1995. Once spudded, the drilling operation should be completed in approximately 45 days. If the well is productive, an additional 30 days will be required for completion and testing before permanent facilities are installed.



OPERATIONS PLAN

SANTA FE ENERGY RESOURCES, INC.

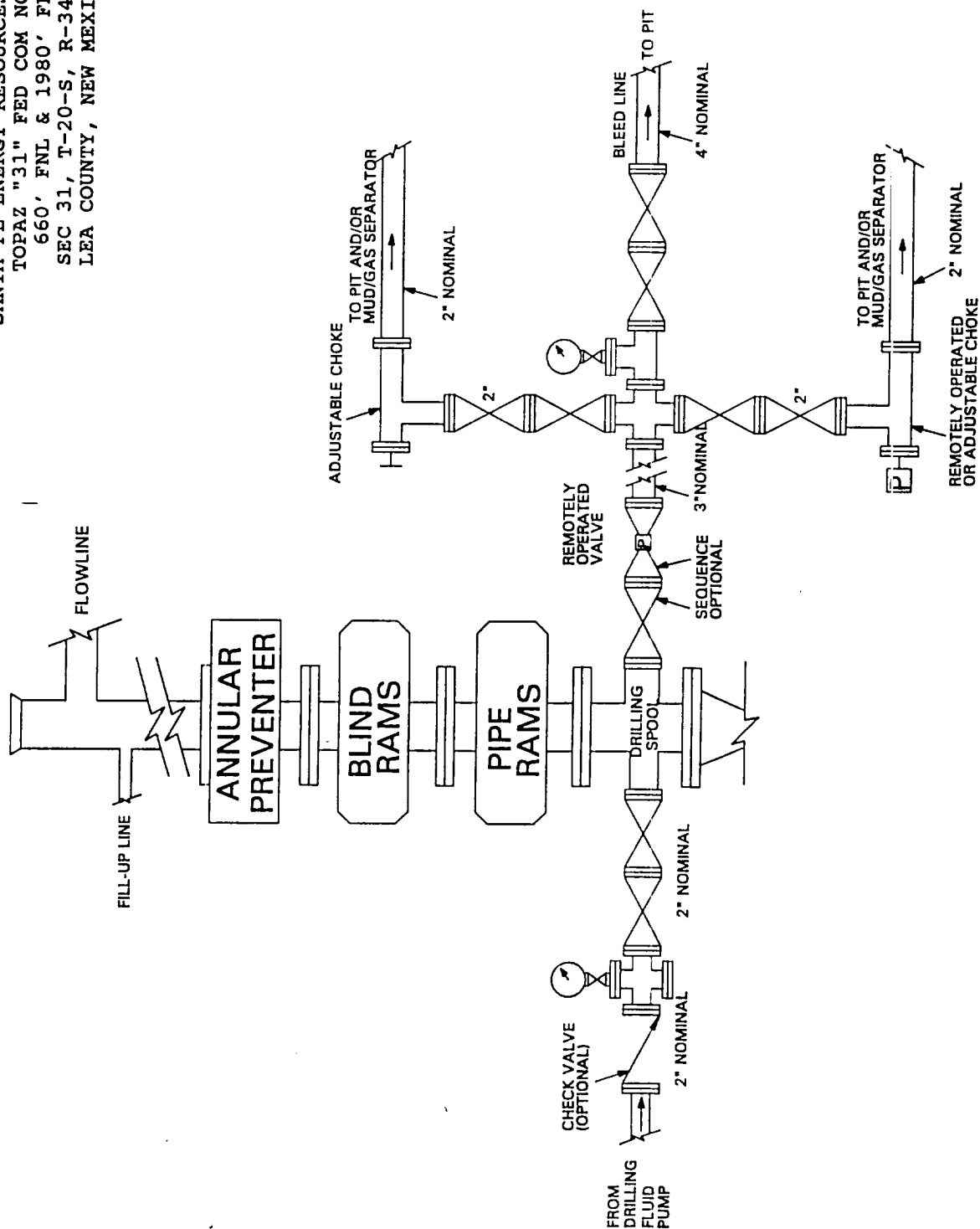
Topaz "31" Fed Com No. 1

1. Drill a 26" hole to approximately 450'.
2. Run 20" 94.0 ppf J-55 BT&C casing. Cement with 550 sx Class "C" Lite + 2% CaCl_2 and tail-in with 200 sx Class "C" + 2% CaCl_2 . Cement utilizing an inner string cement job. Run centralizers on every third joint above the shoe. Apply thread lock to bottom two joints and stab-in float shoe.
3. Wait on cement twelve hours prior to cutting off. Nipple up a annular BOP system or rotating head and test casing to 600 psi. Wait on cement twenty-four hours prior to drilling out.
4. Drill a 17-1/2" hole to approximately 3300'. T.D. should be at least 100' below the base of the Salt.
5. Run 13-3/8" 68.0 ppf S-80 BT&C casing. Cement with an estimated 2400 sx Class "C" Lite (35:65:6) + 9 pps Salt + 1/4 pps cello-flakes and tail-in with 200 sx Cl "C" +2% CaCl_2 to circulate to surface. A fluid caliper should be run prior to reaching TD and the cement volumes adjusted to fluid caliper volume + 30% excess. Run guide shoe on bottom and float collar one joint above shoe. Apply thread lock to bottom two joints, float collar and shoe. Place 15 centralizers one on every third collar, starting with the shoe joint.
6. Wait on cement 12 hours prior to cutting off. Cut off 20" casinghead. Orange peel 20" casing back to 13-3/8" casing, weld on 13-3/8" casinghead. NU an annular preventer BOP system. Test casing to 600 psi. WOC 24 hours prior to drilling out. Rig up H_2S monitoring equipment for the drilling of the Yates Section.
7. Drill a 11" hole to approximately 5200'.
8. Run 8-5/8" 32.0 ppf K-55 ST&C casing. Cement with 600 sx Cl "C" Lite containing 6 pps gilsonite & 1/4 pps cello-flakes followed by 400 sx Class "C" with 2% CaCl_2 to circulate cement at least 200' inside the 13-3/8" casing. Run guide shoe on bottom and float collar two joints off bottom. Place 18 centralizers one on every third collar, starting with the shoe joint. Thread lock bottom 2 joints.
9. Wait on cement for twelve hours prior to cutting off.
10. Nipple up and install a 5000 psi. Double Ram and Annular BOP system with choke manifold. Test BOP system to 5000 psi. Test casing to 1500 psi. Wait on cement twenty-four hours prior to drilling out. Release H_2S monitoring equipment.
11. Drill 7-7/8" hole to 14000'. Run logs.
12. Either run and cement 4000' of 5-1/2" 17.0 ppf S-95 LT&C casing followed by 10000' of 5-1/2" 17.0 ppf N-80 LT&C in two stages with a stage collar at approximately 10000' to bring cement to at least 200' inside the 8-5/8" casing or plug and abandon as per BLM requirements.

Exhibit "A"
Santa Fe Energy Resources, Inc.
Topaz "31" Fed Com No. 1
Section 31, T-20-S, R-34-E
Lea County, New Mexico

EXHIBIT B

SANTA FE ENERGY RESOURCES, INC.
 TOPAZ "31" FED COM NO 1
 660' FNL & 1980' FEL
 SEC 31, T-20-S, R-34-E
 LEA COUNTY, NEW MEXICO



PROPOSED DRILLING FLUID PROGRAM

0 - 450'

Spud mud consisting of fresh water gel flocculated with Lime. Use ground paper for seepage control and to sweep the hole. MW-8.5 ppg and Vis-40.

450 - 3300'

Drill out with brine water circulating the inner portion of the reserve pit. Utilize ground paper mixed in prehydrated fresh gel to sweep the hole. MW-10.0 ppg and Vis-28.

3300 - 5200'

Fresh water - using paper in pills to sweep the hole. MW-8.3 ppg and Vis-28.

5200' - 14000'

Drill out with cut brine (30,000 ppm chlorides minimum) circulating the outer portion of the reserve pit. Maintain pH at 8.5-9.5 with caustic and sweep the hole as necessary with ground paper. If it becomes necessary to mud up due to hole conditions, utilize a cut bine/Drispac system for 15-20 WL and a Vis of 30-32. MW-8.5/8.9 ppg. At approximately 12000', displace with 10.0 ppg brine and mud-up with XCD polymer and Drispac for 32-35 vis and 15-20 WL, pH 9.0-9.5.

Exhibit "C"
Santa Fe Energy Resources, Inc.
Topaz "31" Fed Com No. 1
Section 31, T-20-S, R-34-E
Lea County, New Mexico