

UTAH OIL AND GAS CONSERVATION COMMISSION

REMARKS WELL LOG FILE TR-LOG FILE **X** WATER SANDS LOCATION INSPECTED SUB REPORT/abd
 910502 well name and footage chg
 91117

DATE FILED **3-29-91**
 LAND FEE & PATENTED STATE LEASE NO PUBLIC LEASE NO INDIAN **NOG8702-1116**
 DRILLING APPROVED **4-10-91 (EXCEPTION LOCATION)**
 SPUDDED IN
 COMPLETED TO TOP PRODUCING

INITIAL PRODUCTION
 GRAVITY API
 GOR
 PRODUCING ZONES

TOTAL DEPTH
 WELL ELEVATION
 DATE ABANDONED **VA 11-7-94**
 FIELD **UNDESIGNATED**
 UNIT

COUNTY **SAN JUAN**

WELL NO **MULE-31N Mule 31-13-2** API NO. **43-037-31618**

LOCATION **740' FSL** FT FROM NEIS LINE **2585' FWL** FT FROM NEIS LINE **SE SW** 1/4 - 1/4 SEC **31**

1450 FSL **2630 FWL** **Impace - 590' FSL** **2440' FWL** **Subsurface**

| TWP | RGE | SEC | OPERATOR | TWP | RGE | SEC | OPERATOR |
|------------|------------|-----------|------------------------------|-----|-----|-----|----------|
| 41S | 24E | 31 | CHUSKA ENERGY COMPANY | | | | |



CHUSKA ENERGY COMPANY

3315 BLOOMFIELD HIGHWAY • FARMINGTON, NEW MEXICO 87401 • PHONE (505) 326 5525

26 March, 1991

State of Utah Department of Natural Resources
Division of Oil, Gas and Mining
355 West North Temple
3 Triad Building, Suite 350
Salt Lake City, Utah 84180-1203

RECEIVED

MAR 29 1991

DIVISION OF
OIL GAS & MINING

Ref: Application for Permit to Drill
Mule-31N Well, San Juan County, Utah

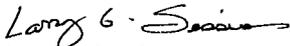
Gentlemen

Attached for your examination and approval is the original and two copies of an Application for Permit to Drill the Mule Well No. 31N in San Juan County, Utah. This well will be drilled as part of an ongoing exploration and development program.

The location for this well falls outside the guidelines for the State of Utah spacing requirements. However, the topography of the area surrounding the desired location and its proximity to an existing road are such as to preclude the well being located in accordance with State requirements and yet remain in a position which will allow the well bore to penetrate geological structures which have been identified by seismic interpretation. We therefore apply for an exception to the General State Spacing requirements on topographic grounds. Chuska Energy controls the acreage surrounding the proposed site, as indicated on the attached land plat.

Please advise if you require additional information concerning this application. Chuska Energy will greatly appreciate your prompt consideration.

Sincerely,


Larry G. Sessions
Operations Manager

LGS/csw
File C:\WP51\MULE.31N\APDCOVER

encl.

UNITED STATES
DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1. TYPE OF WORK
 DRILL DEEPEN PLUG BACK

2. TYPE OF WELL
 OIL WELL GAS WELL OTHER MULTIPLE ZONE

3. NAME OF OPERATOR
 Chuska Energy Company

4. ADDRESS OF OPERATOR
 3315 Bloomfield Highway, Farmington, NM 87401

5. LOCATION OF WELL (Support 1000 foot clearance and in accordance with any state requirements) at Surface
 740' FSL, 2585' FWL

6. PROPOSED WELL NAME
 Sare

7. DISTANCE IN FEET AND DECIMAL FEET FROM NEAREST FORMER WELL OFFICER
 6.8 miles South of Montezuma Creek, Utah

8. DISTANCE FROM PROPOSED LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT (Also to nearest fully paid lease, if any)
 1,400'

9. DISTANCE FROM PROPOSED LOCATION TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR ON THIS LEASE, FT
 4,047'

10. ELEVATIONS (Show whether OF, F, or, etc.)
 4943' GR / 4,956' KB

11. ACRES ASSIGNED TO THIS WELL
 49,997

12. DISTANCE TO NEAREST WELL
 5,956' KB Akah

13. DATE WORK WILL START
 10-15-91

14. LEASE DESIGNATION AND SERIAL NO.
 NOG 8702-1116

15. IF INDIAN, ALLOTTEE OR TRIBE NAME
 Navajo Tribal

16. JOINT AGREEMENT NAME

17. FARM OR LEASE NAME
 Mule

18. WELL NO
 31N

19. FIELD AND POOL, OR BILLOCAT
 Wildcat Undesignated

20. SEC. T, R, N, OR S & OR S & AND SURVEY OR AREA
 000

21. COUNTY OR PARISH
 San Juan

22. STATE
 Utah

23. COUNTY OR PARISH
 San Juan

24. STATE
 Utah

PROPOSED GAS AND CEMENTING PROGRAM

| SIZE OF WELL | DEPTH OF CASING | HEIGHT PER FOOT | TYPE OF CEMENT | QUANTITY OF CEMENT |
|--------------|-----------------|-----------------|----------------|--------------------|
| 12 1/4" | 8 5/8" | 24 lb | 500' | 3000 lb |
| 7 7/8" | 5 1/2" | 15 5 lb | 5,956' | 3000 lb |

Refer to attached 10-Point Drilling Plan etc.

RECEIVED

MAR 29 1991

DIVISION OF
OIL GAS & MINING

14. ABOVE SPACE DESCRIBE PROPOSED PROGRAM if proposal is to deepen or plug back, give date on present production zone and proposed new production zone if proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Also show proposed program, if any.

SIGNED: [Signature] TITLE: Operations Engineer DATE: 26 March, 1991

(This space for Federal or BLM's office use)

PERMIT NO: 43 087-31018 APPROVAL BY: [Signature]

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS AND MINING

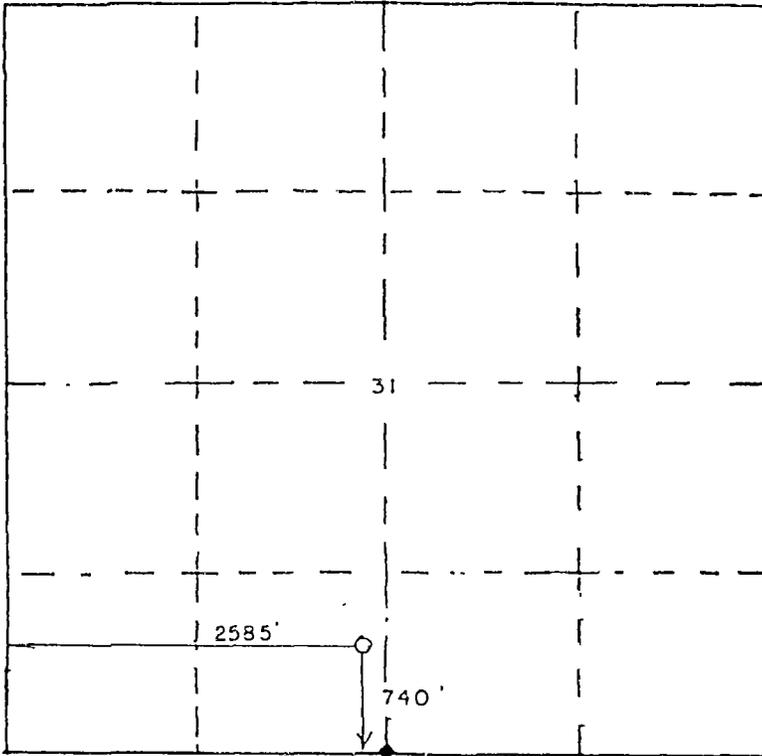
DATE: 4/10/91

*(See Instructions On Reverse Side)

15. If B.L.M. Section 1003, make it a crime for any person knowing and willfully to violate any provision of this Act or any regulation or order of the Secretary of the Interior relating to the location, drilling, completion, or production of a well spacing.

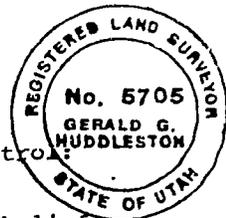
WELL SPACING: [Signature]
R. 615-3-3

WELL LOCATION PLAT



WELL LOCATION DESCRIPTION:

CHUSKA ENERGY CO., Mule 31 - N
740'FSL & 2585'FWL
Section 31 T.41 S., R.24 E., SLM
San Juan County, UT
4943' ground elevation
State plane coordinates from seismic control:
X = 2,634,289 Y = 192,540



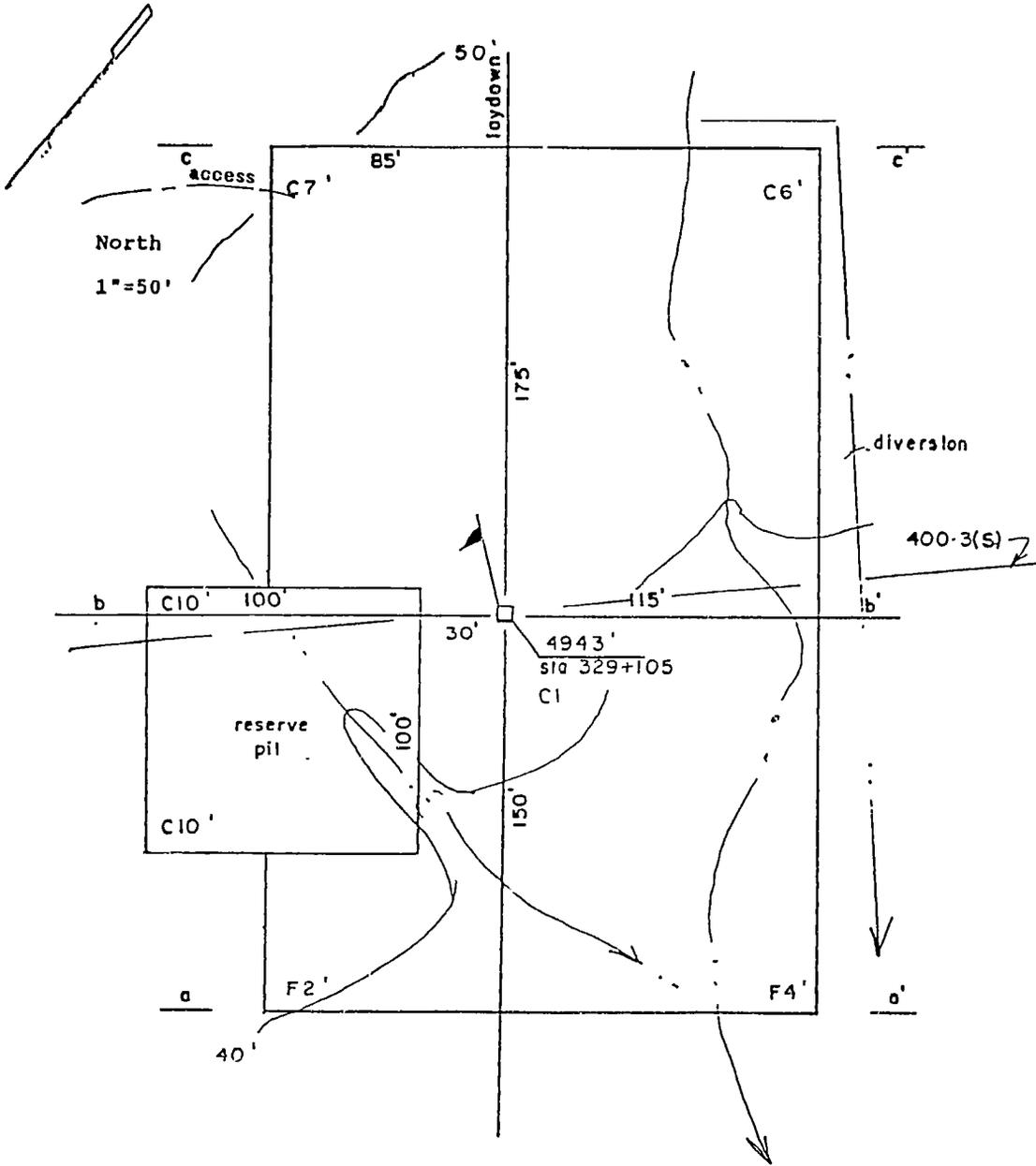
The above is true and correct to my knowledge and belief.

7 March 1991

Gerald G. Huddleston
Gerald G. Huddleston, LS

PLANVIEW SKETCH

Mule 31 - N

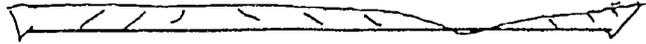


CROSS SECTION

Mule 31 - N

Cut // // // //
Fill 

1"=50' vert. & horz.



c

c'



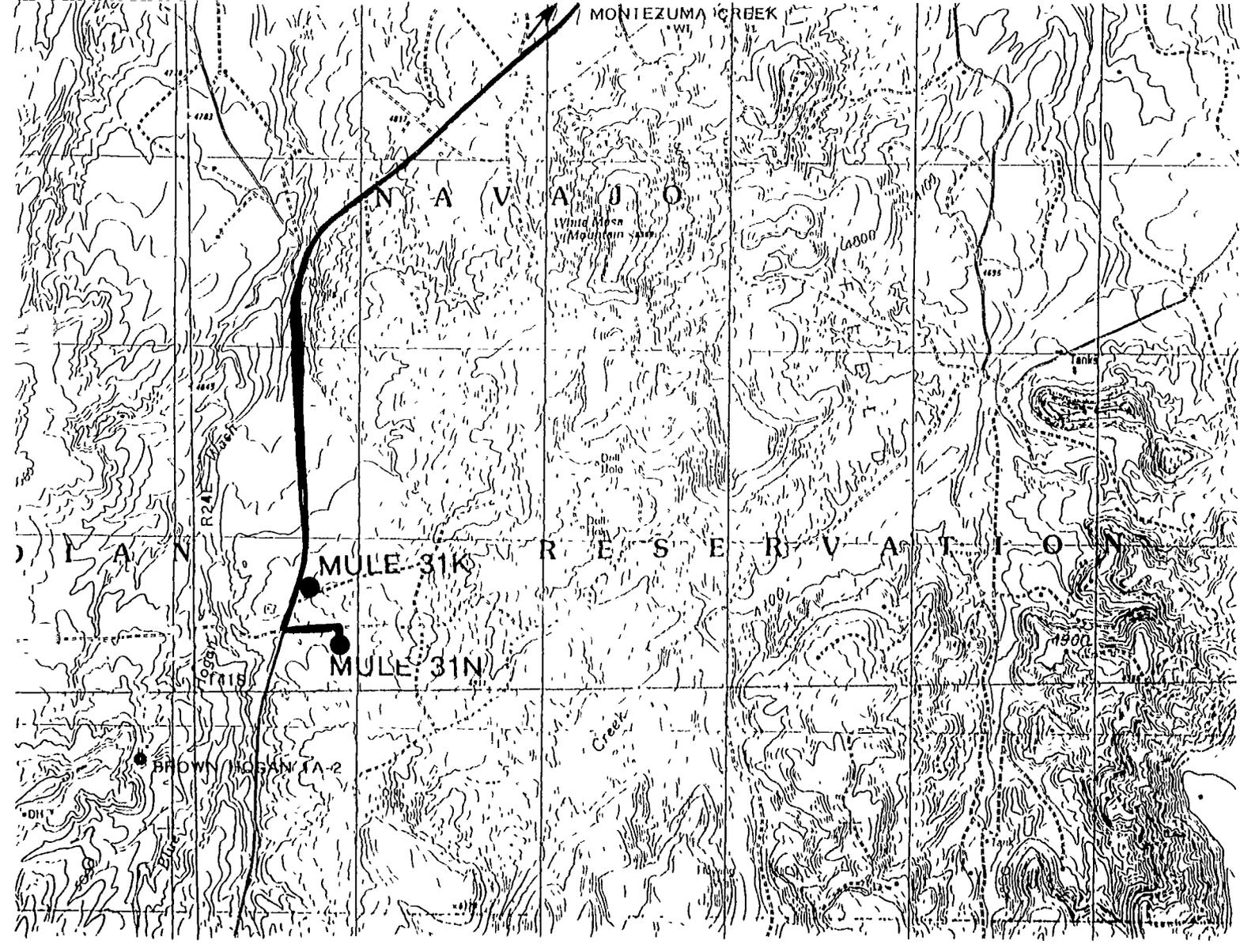
b

= b'



a

a'



CHUSKA ENERGY COMPANY

10 POINT DRILLING PLAN

Mule Well No 31N
Section 31, Township 41S, Range 24E
740' FSL, 2585' FWL
San Juan County, Utah

1. SURFACE FORMATION

Geological name of surface formation Morrison

2. ELEVATION

Surface elevation is 4943' GR / 4,956' KB.

3. ESTIMATED FORMATION TOPS

| <u>Depth</u> | <u>Formation</u> | <u>Sub Sea Elevation</u> | |
|--------------|------------------|------------------------------|---------------------|
| Surface | Morrison | + 4,956' | |
| 732' | Navajo | + 4,224' | |
| 1,536' | Chinle | + 3,420' | |
| 2,673' | DeChelly | + 2,283' | |
| 2,938' | Organ Rock | + 2,018' | |
| 3,618' | Cedar Mesa | + 1,333' | |
| 4,630' | Hermosa | + 325' | |
| 5,508' | Upper Ismay | - 552' | |
| 5,631' | Lower Ismay | - 675' | |
| 5,670' | Desert Creek | - 714' | Primary / Objective |
| 5,855' | Akan | - 899' | |
| 5,956' | Total Depth | - 1,000' | |

4. PROPOSED CASING/CEMENTING PROGRAM

| | <u>Depth</u> | <u>Size</u> | <u>Weight</u> | <u>Grade</u> | <u>Coupling</u> |
|------------|--------------|-------------|---------------|--------------|-----------------|
| Surface | 500' | 8 5/8" | 24 lb | K-55 | STC |
| Production | 5,956' | 5 1/2" | 15 5 lb | K-55 | STC |

Surface Cementing

371 sx (427 ft³) Class 'G' cement with 2% CaCl₂ and 1/4 lb/sk Celloflake Weight = 15.8 ppg, yield = 1.15 ft³/sk. Slurry volume calculated at 100% excess over annular volume

Production Cementing:

First Stage

T.D. to 3,500' (stage collar @ \pm 3,500'). Lead with 184 sx Class 'G' cement, 65:35 Pozmix, with 6% gel and 1/4 lb/sk Celloflake. Weight = 12.7 ppg, yield = 1.85 ft³/sk. Tail with 190 sx Class 'G' cement with 2% CaCl₂. Weight = 15.8 ppg, yield = 1.15 ft³/sk. Total of 559 ft³. Bring Class 'G' slurry to 500' above top of Upper Ismay. Cement volumes calculated at 30% excess in open hole. WOC 4 hours between stages.

Second Stage

3,500' to surface. Lead with 355 sx Class 'G' cement, 65:35 Pozmix with 6% gel and 1/4 lb/sk Celloflake. Weight = 12.7 ppg, yield = 1.85 ft³/sk. Tail with 100 sx Class 'G' cement with 2% CaCl₂. Weight = 15.8 ppg, yield = 1.15 ft³/sk. Total of 772 ft³. Cement volumes calculated at 30% excess in open hole.

Note: Exact slurry volumes for the production string will be adjusted according to the caliper log which will be run prior to cementing. Special adjustments may be necessary if significant amounts of salt are drilled.

5 BLOWOUT PREVENTER (See attached schematics)

As abnormal pressure is not anticipated, a 2,000 psi BOP system would be sufficient for the drilling of this well. However, due to availability constraints, a 3,000 psi system will be used, as per the attached Exhibits "A" and "B". This will be a 10" x 900 Series double ram preventer, equipped with a set of pipe and blind rams.

An accumulator system, with a pressure capacity sufficient to operate the rams three complete cycles without rig power, will be required as part of the rig equipment.

6 PROPOSED MUD PROGRAM

Surface to 3,000'

Fresh water, gel, lime and native solids. Weight 8.3 - 8.7 ppg. Gel/lime sweeps as necessary for hole cleaning.

3,000' to T.D.

Low solids, non-dispersed polymer system. Weight 8.6 - 9.5 ppg. Gel/lime sweeps as hole conditions dictate for hole cleaning. Fluid loss to be maintained at 15 - 20 cc. Fluid loss to be further reduced to 15 cc or less prior to coring, logging or DSTs.

7. AUXILIARY EQUIPMENT

- A. A kelly cock will be installed during drilling operations, with handle available on the rig floor.
- B. Floor (stabbing) valves will be available, on the rig floor at all times, with necessary subs to fit all of the drilling assemblies.
- C. Mud will be the circulating fluid. No abnormal formation pressures are expected.

8. WELL EVALUATION

Open hole electric logging program will consist of a minimum program of DLL-MSFL-SP-GR-Cal, FDC-CNL-GR-Lithodensity from T.D. to 4,500'.

Coring and/or drill stem testing will be as per the wellsite geologist's recommendations, based on shows. A mud logging unit will be utilized during drilling operations from at least 500' above the Upper Ismay

9. ABNORMAL PRESSURES/GAS

Abnormal pressures are not anticipated. Monitoring of gas and hydrocarbon shows will be by wellsite mud logging unit. H₂S gas is not anticipated, however regular checks will be made while drilling the well.

10. TIMING

The drilling and evaluation of this well is estimated to be 18 days. Anticipated spud date is 10-15-91.

EXHIBIT "A"
BLOWOUT PREVENTER

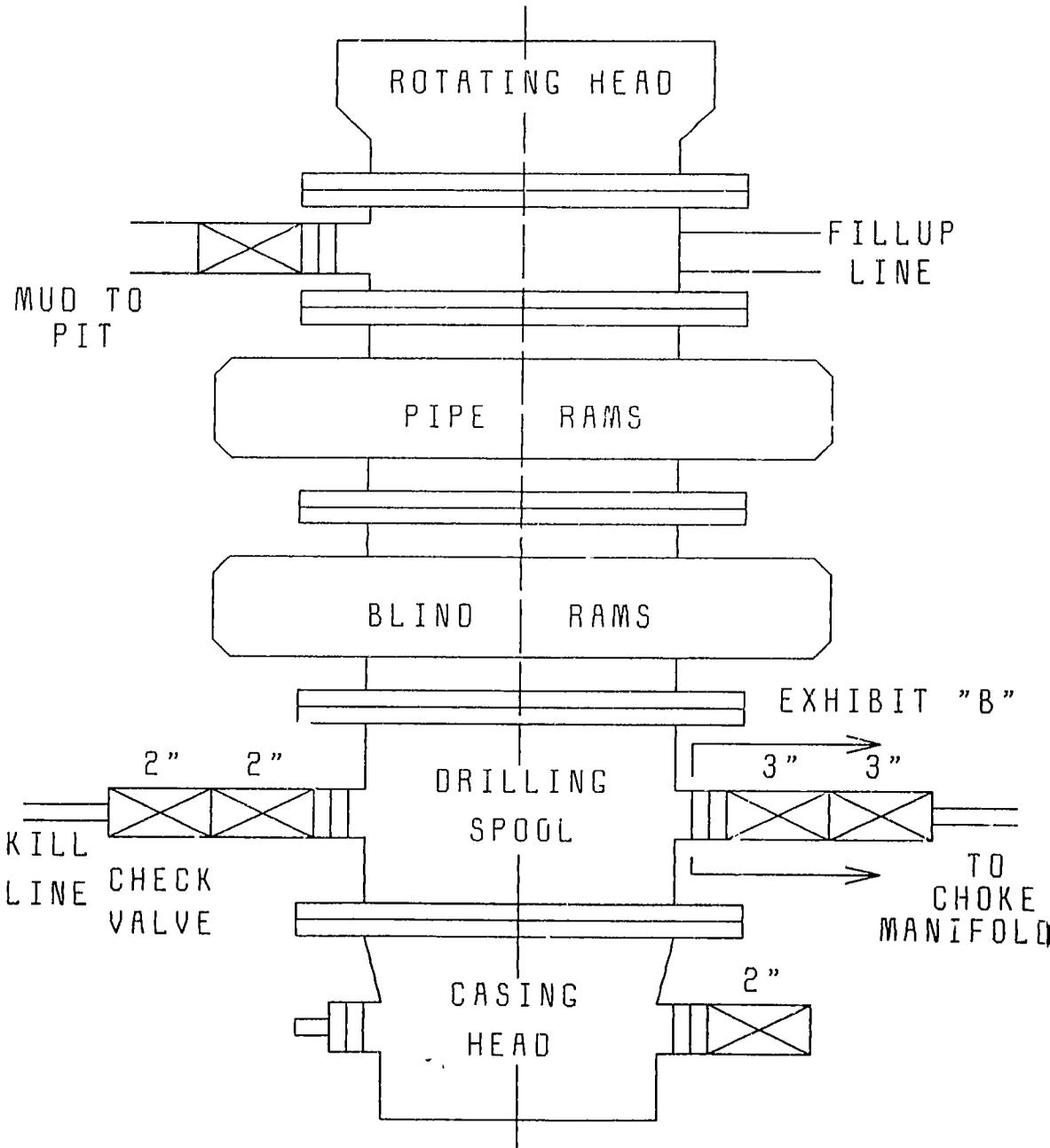
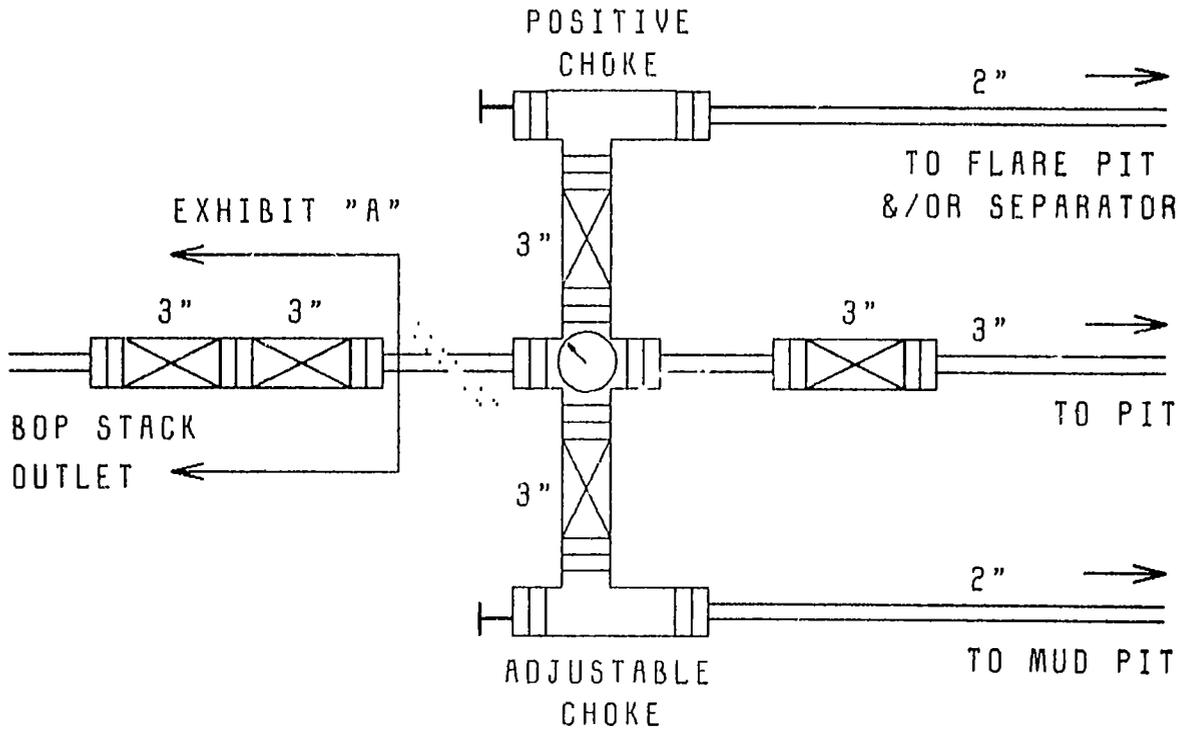


EXHIBIT "B"
CHOKE MANIFOLD



DETAILED DRILLING PROGRAM

DATE: 26 March, 1991

WELL NAME: Mule WELL NO.: 31N

LOCATION: Section 31, Township 41S, Range 24E
740' FSL, 2585' FWL
San Juan County, Utah

ELEVATION: 4943' GR / 4,956' KB

TOTAL DEPTH: 5,956' KB

PROJECTED HORIZON: Primary target is Desert Creek at 5,670'.

DRILLING, CASING AND CEMENTING PROGRAM

1. Move in and rig up rotary tools. Notify BLM of time of spud and intent to run surface casing.
2. Drill mouse hole and rat hole. Mix mud prior to spudding well.
3. Drill 12 1/4" hole to \pm 500'. Use fresh water gel/lime spud mud for drilling surface hole. Well bore inclination is not to exceed 1' at 500'. Deviation surveys will be run at least at 250' and at casing point.
4. Run 8 5/8", 24 lb/ft, K-55, STC casing to T D. Cement with 371 sk (427 ft') of Class 'G' cement with 2% CaCl and 1/4 lb/sk Celloflake (sufficient slurry volume to circulate cement to surface).
5. W.O.C. a minimum of 4 hours prior to nipping up BOP stack and related equipment. See BOP schematics for details.
6. Ensure that plug has been down at least 8 hours prior to commencing pressure testing procedures. Pressure test BOP to 2,000 psig for 30 minutes. Pressure test manifold and all related equipment to 2,000 psig. Pressure test casing to 1,500 psig for 30 min.
7. Drill out surface casing with 7 7/8" bit. Drill 7 7/8" hole to T D. Deviation surveys are to be taken every 500' or on a bit trip, whichever occurs first. Maximum allowable deviation will be 5' at T D, with the maximum allowable rate of change to be 1'/100'.
8. Run open hole logs and evaluate. Coring and/or drill stem testing will be as per wellsite geologist's recommendation.

- 9 If the well is determined to be productive, run 5 1/2", 15.5 lb/ft, K-55, STC casing to T.D. Set stage cementing collar at $\pm 3,500'$. In addition to placing centralizers over potential production zones, they will also be run to cover the aquifer sands of the Navajo and DeChelly formations, as per BLM stipulations. Cement production casing in two stages as per cementing program in 10-point Drilling Plan.
10. Nipple down BOPE. Set 5 1/2" casing slips and cut off casing. Install well head. Release drilling rig and move rig off location.
- 11 If well is non-productive it will be plugged and abandoned as per State, BLM and Navajo Tribal stipulations.

Mule Well No. 31N
Section 31, Township 41S, Range 24E
740' FSL, 2585' FWL
San Juan County, Utah

GENERAL COMPLETION PROCEDURE

If the well is determined to be productive, move in completion rig. Perforate, acidize, and test each productive porosity zone. Completion work will commence after Sundry Notice approval is received. Detailed procedures will follow.

PLUGGING AND ABANDONMENT

If the well is determined not to be productive, the well bore will be plugged as per BLM, State and Navajo Tribal requirements.

Mule Well No. 31N
Section 31, Township 41S, Range 24E
740' FSL, 2585' FWL
San Juan County, Utah

SURFACE USE PLAN

1. EXISTING ROADS

Shown on the attached topographic map are the existing roads in the immediate area. Outlined is the route to be followed from Montezuma Creek. Existing roads will be maintained, as necessary, while operations are in progress.

2. PLANNED ACCESS ROAD

The access road will be as shown on the attached topographic map. The road will be flat bladed, constructed 14' in width and will be maintained as necessary to prevent excessive damage to the existing terrain. The road will be upgraded if commercial production is established. Owing to the well's proximity to an existing road, it is anticipated that less than 200' of new road will need to be constructed to the location pad.

3. LOCATION OF EXISTING WELLS & TANK BATTERIES

The nearest producing well is the Blue Hogan 1J-1, located approximately 1 1/4 miles to the South West.

4. LOCATION OF EXISTING AND PROPOSED FACILITIES

No production facilities are presently in place. Should the well prove to be productive, facilities (tank battery etc) will be sited on the drilling location pad.

5. LOCATION & TYPE OF WATER SUPPLY

Water will be acquired from the San Juan River or McElmo Creek and will be hauled using Chuska Energy Company water trucks, under State of Utah Division of Water Rights Permit Numbers 09-1724, (T64796) or 09-1723 (T64795).

6. SOURCE OF CONSTRUCTION MATERIALS

The need for additional construction materials is not anticipated. In the event that additional materials are required, they will be acquired either from private sources or with the approval of the Navajo Nation.

7. METHODS OF HANDLING WASTE MATERIAL

Trash will be contained on location in an enclosed bin. It will be hauled to an approved disposal site or burned on location if a burning permit is granted. The reserve pit will be lined as required, with an approved 7 mil liner, for containing drilling fluids. The pit will also be fenced. All drilling fluids, cuttings and chemical waste will be stored in the reserve pit. Liquid hydrocarbons will be stored in temporary storage tanks and hauled from location to approved sales facilities. The reserve pit will be emptied, back filled and restored to natural terrain status upon completion of drilling operations.

8. ANCILLARY FACILITIES

Chemical portable toilet facilities will be provided on location during drilling and completion operations. No camps or air strips are planned for this well.

9. WELL SITE LAYOUT

Attached is a surveyor's staking plat, cut and fill diagram and a schematic of the proposed rig layout.

10. PLANS FOR RESTORATION OF THE SURFACE

The location is laid out on a north west/south east trend and will require up to 10' of cut in the reserve pit (up to 7' of cut in the eastern corner of the location pad) and up to 4' of fill in the western corner of the location pad. Top soil removed from the pad will be stored at the well site. A reserve pit will be built on terrain containing sparse native vegetation. After drilling operations are complete, drilling fluid in the reserve pit will be allowed to evaporate. All remaining fluid in the pit will be disposed of into an approved disposal site. The reserve pit will remain fenced during the evaporation and disposal process. The pit will then be covered and the topsoil will be returned to the disturbed area. The terrain will be returned as near to its original condition as possible. Following operations, rehabilitation seeding will be in accordance with APD/BLM/BIA stipulations. There are no residents in the immediate area of the site.

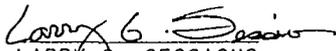
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OPERATORS REPRESENTATIVE

CHUSKA ENERGY COMPANY
3315 BLOOMFIELD HIGHWAY
FARMINGTON, NEW MEXICO 87401
LARRY G SESSIONS

12. CERTIFICATION

I hereby certify that either I, or persons under my direct supervision have inspected the proposed drill site and access route: that I am familiar with the conditions which presently exist: that the statements made in this plan are, to the best of my knowledge, true and correct and that the work planned will be performed by Chuska Energy, or its sub-contractors, in conformity with the terms and conditions under which it is approved

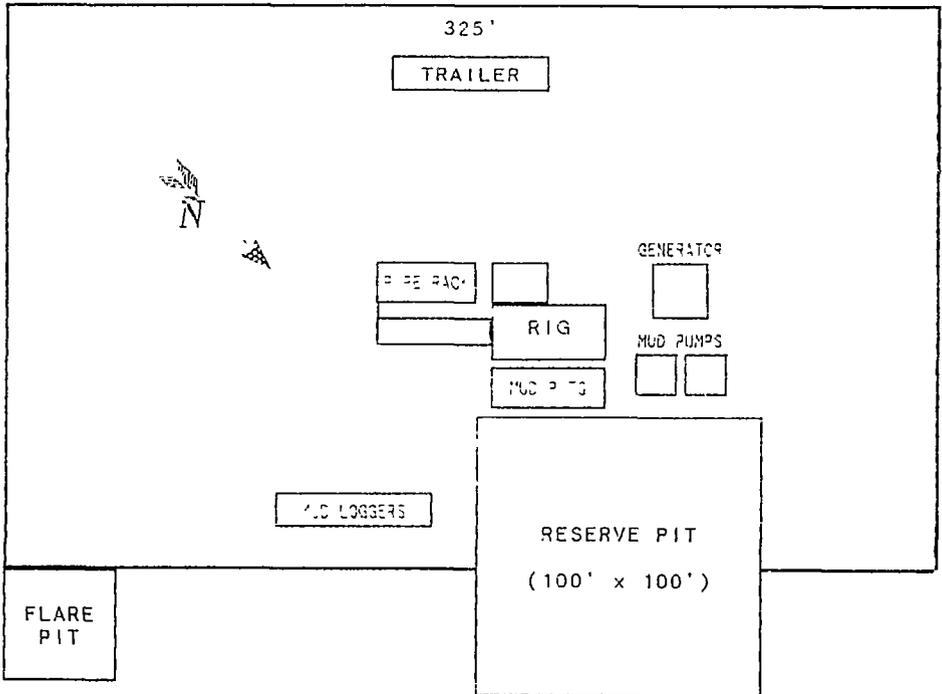

LARRY G. SESSIONS
Operations Manager

MULE-31N

740' FSL, 2585' FWL

SECTION 31, TOWNSHIP 41S, RANGE 24E

SAN JUAN COUNTY, UTAH



OPERATOR Chukra Energy Co N-9090 DATE 11-4-91

WELL NAME mu. 31 R #2

SEC S51W 31 T 41S R 24E COUNTY San Juan

43-037-31018
API NUMBER

Indian (o)
TYPE OF LEASE

CHECK OFF:

PLAT

BOND

NEAREST WELL

LEASE

FIELD SLBM

POTASH OR OIL SHALE

PROCESSING COMMENTS:

No other well within sec 31
Water Permit 09-1704 (T64790) or 09-1703 (T64795)
Exception Location

APPROVAL LETTER:

SPACING: R615-2-3 N/A
UNIT

R515-3-2

N/A
CAUSE NO. & DATE

R615-3-3

STIPULATIONS:

CC: BIA



State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Norman H. Bangerter
Governor
Des C. Hansen
Executive Director
Dianne R. Nielson, Ph.D.
Division Director

355 West North Temple
3 Triad Center Suite 350
Salt Lake City Utah 84100 1203
801 538 5340

April 10, 1991

Chuska Energy Company
3315 Bloomfield Highway
Farmington, New Mexico 87401

Gentlemen:

Re. Mule 31N Well, 740 feet from the South line, 2585 feet from the West line, SE SW, Section 31, Township 41 South, Range 24 East, San Juan County, Utah

Approval to drill the referenced well is hereby granted in accordance with Utah Admin R.615-3-3.

In addition, the following actions are necessary to fully comply with this approval.

1. Spudding notification within 24 hours after drilling operations commence.
2. Submittal of Entity Action Form 6, within five working days following spudding and whenever a change in operations or interests necessitates an entity status change.
3. Submittal of the Report of Water Encountered During Drilling, Form 7.
4. Prompt notification in the event it is necessary to plug and abandon the well. Notify R J Firth, Associate Director, (Office) (801) 538-5340, (Home) 571-6068, or J L Thompson, Lead Inspector, (Home) 298-9318
5. Compliance with the requirements of Utah Admin R 615-3-20, Gas Flaring or Venting.

Page 2
Chuska Energy Company
Mule 31N
April 10, 1991

6. Prior to commencement of the proposed drilling operations, plans for facilities for disposal of sanitary wastes at the drill site shall be submitted to the local health department. These drilling operations and any subsequent well operations must be conducted in accordance with applicable state and local health department regulations. A list of local health departments and copies of applicable regulations are available from the Division of Environmental Health, Bureau of Drinking Water/Sanitation, telephone (801) 538-6159
7. This approval shall expire one (1) year after date of issuance unless substantial and continuous operation is underway or an application for an extension is made prior to the approval expiration date.

The API number assigned to this well is 43-027-31618

Sincerely,



R. O. Smith
Associate Director, Oil & Gas

tas
Enclosures
cc: Bureau of Land Management
Bureau of Indian Affairs
J. L. Thompson
we14/1-4



CHUSKA ENERGY COMPANY

3315 BLOOMFIELD HIGHWAY • FARMINGTON, NEW MEXICO 87401 • PHONE (505) 326-5525

2 May, 1991

State of Utah Department of Natural Resources
Division of Oil, Gas and Mining
355 West North Temple
3 Triad Building, Suite 350
Salt Lake City, Utah 84180-1203

Ref: Sundry Notice: Mule 31-N Well
Change Location and Name

Gentlemen

Attached for your examination and approval are the original and two copies of the subject Sundry Notice.

Please advise if you require additional information concerning this submission.

Sincerely,

Larry G. Sessions
Larry G. Sessions
Operations Manager

LGS/csw
File: C:\WP51\MULE.K2\CHGSUN.CVR

encl.

RECEIVED

MAY 06 1991

DIVISION OF
OIL GAS & MINING

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

| |
|---|
| 6. Lease Designation and Serial Number NOG 8702-1116 |
| 7. Indian Allottee or Tribe Name Navajo Tribal |
| 8. Unit or Communization Agreement |
| 9. Well Name and Number Mule 31-N |
| 10. API Well Number 43-037-31618 |
| 11. Field and Pool, or Wildcat Wildcat |

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals for oil, gas, geothermal, or to reenter closed and abandoned wells.
Use APPLICATION FOR PERMIT for such proposals

| | | |
|--|--|-------------------------------------|
| 1. Type of Well <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other (specify) | | |
| 2. Name of Operator Chuska Energy Company | | |
| 3. Address of Operator 3315 Bloomfield Highway, Farmington, NM 87401 | | 4. Telephone Number 505-326-5525 |
| 5. Location of Well Footage : 740' FSL, 2585' FWL Qd. Sec. T., R., M.: SE/4 SW/4 S31 T4S R24E County: San Juan State: UTAH | | |

12. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| NOTICE OF INTENT (Subbit in Application) | SUBSEQUENT REPORT (Subbit Original Form Only) |
|--|---|
| <input type="checkbox"/> Abandonment <input type="checkbox"/> Casing Repair <input checked="" type="checkbox"/> Change of Plans <input type="checkbox"/> Conversion to Injection <input type="checkbox"/> Fracture Treat <input type="checkbox"/> Multiple Completion <input type="checkbox"/> Other _____ | <input type="checkbox"/> Abandonment <input type="checkbox"/> Casing Repair <input type="checkbox"/> Change of Plans <input type="checkbox"/> Conversion to Injection <input type="checkbox"/> Fracture Treat <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> New Construction <input type="checkbox"/> Pull or Alter Casing <input type="checkbox"/> Recompletion <input type="checkbox"/> Shoot or Acidize <input type="checkbox"/> Vent or Flare <input type="checkbox"/> Water Shut-Off | <input type="checkbox"/> New Construction <input type="checkbox"/> Pull or Alter Casing <input type="checkbox"/> Recompletion <input type="checkbox"/> Vent or Flare <input type="checkbox"/> Water Shut-Off |
| Approximate Date Work Will Start: 9-18-91 | Date of Work Completion: _____ |

Report results of Multiple Completions and recompletions to different reservoirs on WELL COMPLETION or RECOMPLETION AND LOG form
* Must be accompanied by a cement verification report

13. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

Due to the fact that the original location for vertical drilling of this well lay on an area that is use by the local community for ceremonial rituals, it has been necessary to move the surface location. The well will now have to be drilled **directionally**. Refer to attached revised details. In addition, the name of the well has been changed. Location/name details are as follows:

Old name: Mule 31-N
Old location: 740' FSL, 2585' FWL

New name: Mule 31-K-2
New location: 1450' FSL, 2230' FWL (Surface)
590' FSL, 2440' FWL (Subsurface)

RECEIVED

MAY 06 1991

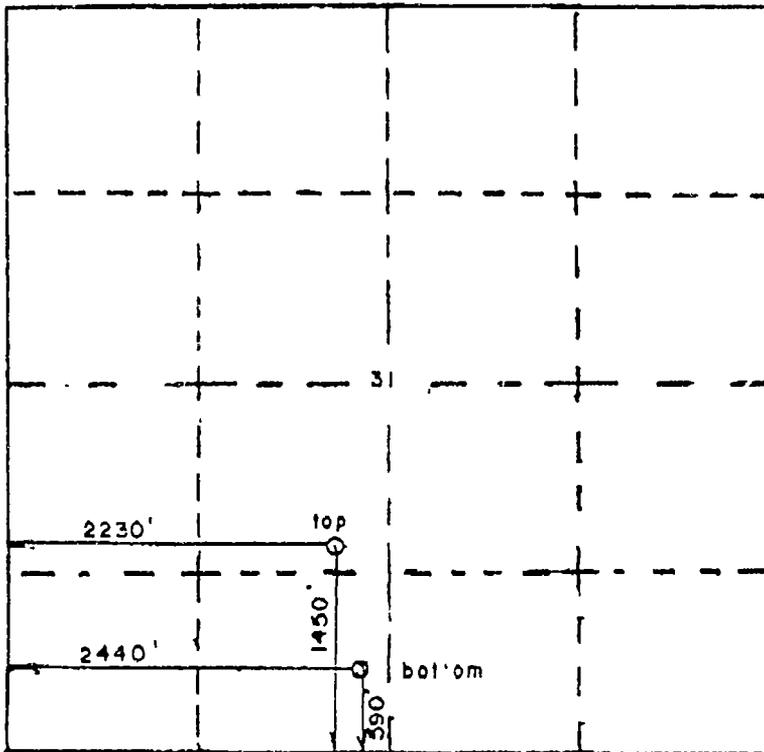
DIVISION OF
OIL GAS & MINING

14. I hereby certify that the foregoing is true and correct
Name & Signature: Christopher S.W. Hill
Title: Operations Engineer
Date: 2 May 91

(State Use Only)

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 5-15-91
See Instructions on Reverse Side

WELL LOCATION PLAT



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OIL GAS & MINING

WELL LOCATION DESCRIPTION:

CHUSKA ENERGY CO., Mule 31-K-2
 1450' FSL & 2230' FWL (top hole)
 590' FSL & 2440' FWL (bottom hole)
 Section 31, T.41 S., R.24 E., S1M
 San Juan County, UT
 4941' ground elevation

State plane coordinates from seismic control:
 X = 2,633,919 Y = 193,243 (top hole)
 X = 2,634,141 Y = 192,384 (bottom hole)



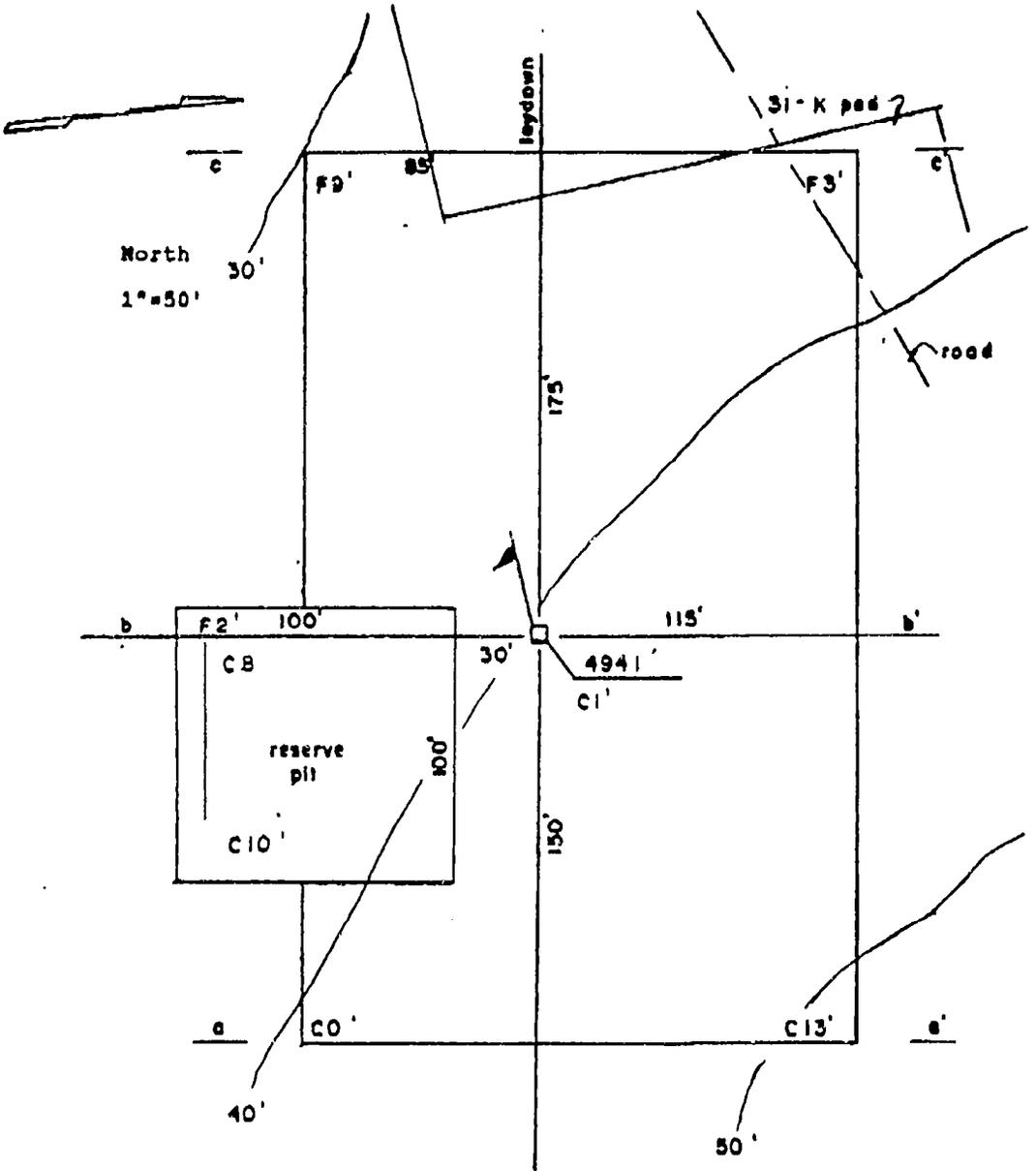
The above is true and correct to my knowledge and belief.

10 April 1991

Gerald G. Huddleston
 Gerald G. Huddleston, LS

PLANVIEW SKETCH

Mule 31-K-2

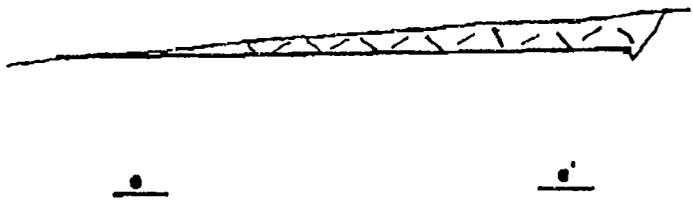
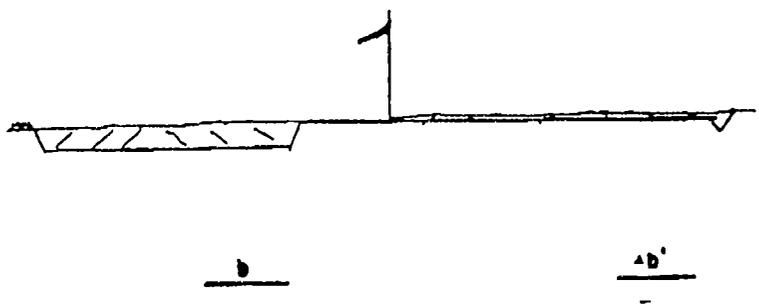
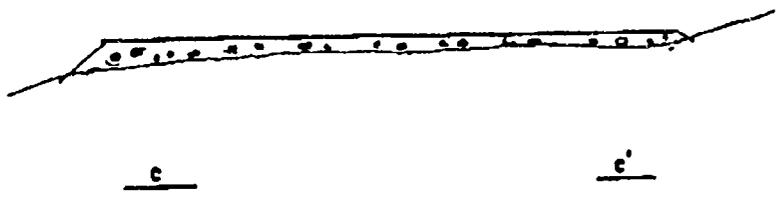


CROSS SECTION

Mile 31-K-2

Cut 
Fill 

1"=50' vert. & hors.



CHUSKA ENERGY COMPANY

10 PC NT DRILLING PLAN

Mule Well No. 31N
Section 31, Township 41S, Range 24E
1450' FSL, 2230' FWL Surface/590' FSL, 2440' FWL Bottom Hole
San Juan County, Utah

1. SURFACE FORMATION

Geological name of surface formation: Morrison

2. ELEVATION

Surface elevation is 4941' GR / 4,954' KB.

3. ESTIMATED FORMATION TOPS

| <u>Depth</u> <u>TVD</u> | <u>Depth</u> <u>MD</u> | <u>Formation</u> | <u>Sub Sea</u> <u>Elevation</u> | |
|----------------------------|---------------------------|------------------|------------------------------------|-------------------|
| Surface | Surface | Morrison | + 4,956' | |
| 732' | 732' | Navajo | + 4,224' | |
| 1,536' | 1,536' | Chinle | + 3,420' | |
| 2,673' | 2,673' | DeChelly | + 2,283' | |
| 2,938' | 2,938' | Organ Rock | + 2,018' | |
| 3,618' | 3,621' | Cedar Mesa | + 1,338' | |
| 4,630' | 4,688' | Hermosa | + 326' | |
| 5,508' | 5,628' | Upper Ismay | - 552' | |
| 5,631' | 5,759' | Lower Ismay | - 675' | |
| 5,670' | 5,801' | Desert Creek | - 714' | Primary Objective |
| 5,855' | 5,999' | Akah | - 899' | |
| 5,956' | 6,107' | Total Depth | - 1,000' | |

4. PROPOSED CASING/CEMENTING PROGRAM

| | <u>Depth</u> | <u>Size</u> | <u>Weight</u> | <u>Grade</u> | <u>Coupling</u> |
|-------------|--------------|-------------|---------------|--------------|-----------------|
| Surface | 500' | 8 5/8" | 24 lb | K-55 | STC |
| Production: | 6,207' | MD 5 1/2" | 15.5 lb | K-55 | STC |

Surface Cementing:

371 sx (427 ft³) Class 'G' cement with 2% CaCl₂ and 1/4 lb/sk Celloflake. Weight = 15.8 ppg, yield = 1.15 ft³/sk. Slurry volume calculated at 100% excess over annular volume.

Production Cementing:

First Stage

T.D. to 3,500' (stage collar @ \pm 3,500'). Lead with 137 sx Class 'G' cement, 65:35 Pozmix, with 6% gel, and 1/4 lb/sk Celloflake. Weight = 12.7 ppg, yield = 1.85 ft³/sk. Tail with 292 sx Class 'G' cement with 2% CaCl₂. Weight = 15.8 ppg, yield = 1.15 ft³/sk. Total of 590 ft³. Bring Class 'G' slurry to 500' above top of Upper Ismay. Cement volumes calculated at 30% excess in open hole. WOC 4 hours between stages.

Second Stage

3,500' to surface. Lead with 355 sx Class 'G' cement, 65:35 Pozmix with 6% gel and 1/4 lb/sk Celloflake. Weight = 12.7 ppg, yield = 1.85 ft³/sk. Tail with 100 sx Class 'G' cement with 2% CaCl₂. Weight = 15.8 ppg, yield = 1.15 ft³/sk. Total of 772 ft³. Cement volumes calculated at 30% excess in open hole.

Note: Exact slurry volumes for the production string will be adjusted according to the caliper log which will be run prior to cementing. Special adjustments may be necessary if significant amounts of salt are drilled.

5. BLOWOUT PREVENTER (See attached schematics)

As abnormal pressure is not anticipated, a 2,000 psi BOP system would be sufficient for the drilling of this well. However, due to availability constraints, a 3,000 psi system will be used, as per the attached Exhibits "A" and "B". This will be a 10" x 900 Series double ram preventer, equipped with a set of pipe and blind rams.

An accumulator system, with a pressure capacity sufficient to operate the rams three complete cycles without rig power, will be required as part of the rig equipment.

6. PROPOSED MUD PROGRAM

Surface to 3,000'

Fresh water, gel, lime and native solids. Weight 8.3 - 8.7 ppg. Gel/lime sweeps as necessary for hole cleaning.

3,000' to T.D.

Low solids, non-dispersed polymer system. Weight 8.6 - 9.5 ppg. Gel/lime sweeps as hole conditions dictate for hole cleaning. Fluid loss to be maintained at 15 - 20 cc. Fluid loss to be further reduced to 15 cc or less prior to coring, logging or DSTs.

7. AUXILIARY EQUIPMENT

- A. A kelly cock will be installed during drilling operations, with handle available on the rig floor.
- B. Floor (stabbing) valves will be available, on the rig floor at all times, with necessary subs to fit all of the drilling assemblies.
- C. Mud will be the circulating fluid. No abnormal formation pressures are expected.

8. WELL EVALUATION

Open hole electric logging program will consist of a minimum program of DLL-MSFL-SP-GR-Cal, FDC-CNL-GR-Lithodensity from T.D. to 4,500' MD.

Coring and/or drill stem testing will be as per the wellsite geologist's recommendations, based on shows. A mud logging unit will be utilized during drilling operations from at least 500' above the Upper Ismay.

9. ABNORMAL PRESSURES/GAS

Abnormal pressures are not anticipated. Monitoring of gas and hydrocarbon shows will be by wellsite mud logging unit. H₂S gas is not anticipated, however regular checks will be made while drilling the well.

10. TIMING

The drilling and evaluation of this well is estimated to be 25 days. Anticipated spud date is 9-18-91.

DETAILED DRILLING PROGRAM

DATE: 2 May, 1991

WELL NAME: Mule WELL NO.: 31-K-2

LOCATION: Section 31, Township 41S, Range 24E
1450' FSL, 2230' FWL Surface
590' FSL, 2440' FWL Bottom Hole
San Juan County, Utah

ELEVATION: 4941' GR / 4,954' KB

TOTAL DEPTH: 5,956' TVD KB / 6,107' MD KB

PROJECTED HORIZON: Primary target is Desert Creek at 5,670' TVD,
5,801' MD.

DRILLING, CASING AND CEMENTING PROGRAM

1. Move in and rig up rotary tools. Notify BLM of time of spud and intent to run surface casing.
2. Drill mouse hole and rat hole. Mix mud prior to spudding well.
3. Drill 12 1/4" hole to \pm 500'. Use fresh water gel/lime spud mud for drilling surface hole. Well bore inclination is not to exceed 1° at 500'. Deviation surveys will be run at least at 250' and at casing point.
4. Run 8 5/8", 24 lb/ft, K-55, STC casing to T.D. Cement with 371 sx (427 ft³) of Class 'G' cement with 2% CaCl₂ and 1/4 lb/sk Celloflake (sufficient slurry volume to circulate cement to surface).
5. W.O.C. a minimum of 4 hours prior to nipping up BOP stack and related equipment. See BOP schematics for details.
6. Ensure that plug has been down at least 8 hours prior to commencing pressure testing procedures. Pressure test BOP to 2,000 psig for 30 minutes. Pressure test manifold and all related equipment to 2,000 psig. Pressure test casing to 1,500 psig for 30 min.
7. Drill out surface casing with 7 7/8" bit. Drill 7 7/8" hole to 3,100'. Deviation surveys are to be taken every 500' or on a bit trip, whichever occurs first. Maximum allowable deviation will be 5°, with the maximum allowable rate of change to be 1'/100'. Take directional survey at 3,100'.
8. Rig up directional tools and start building angle, with rate of build 2° per 100 ft. Directional surveys are to be taken every 100', or as required, while building angle.

9. Build angle to 20.80' by 4,140' MD/4,117' TVD. Continue drilling 7 7/8" hole to T.D. Directional surveys are to be taken at least every 250'.
10. Run multishot survey at total depth.
11. Run open hole logs and evaluate. Coring and/or drill stem testing will be as per wellsite geologist's recommendation.
12. If the well is determined to be productive, run 5 1/2", 15.5 lb/ft, K-55, STC casing to T.D. Set stage cementing collar at \pm 3,500'. In addition to placing centralizers over potential production zones, they will also be run to cover the aquifer sands of the Navajo and DeChelly formations, as per BLM stipulations. Cement production casing in two stages as per cementing program in 10-point Drilling Plan.
13. Nipple down BOPE. Set 5 1/2" casing slips and cut off casing. install well head. Release drilling rig and move rig off location.
14. If well is non-productive it will be plugged and abandoned as per State, BLM and Navajo Tribal stipulations.



CHUSKA ENERGY COMPANY

1775 SHERMAN STREET SUITE 1800 • DENVER, COLORADO 80203 • PHONE (303) 863 7021
FAX # (303) 863 7210

May 17, 1991

Ms. Vicki Kearney
Utah Oil & Gas Commission
355 West North Temple
Three Triad Center
Suite 350
Salt Lake City, Utah
84180-1203

Dear Ms. Kearney:

Please keep all Chuska Energy Company data confidential until further notice.

Thanks,

A handwritten signature in cursive script, appearing to read "Herb".

Herbert P. Mosca
Chuska Staff Geologist

RECEIVED

MAY 20 1991

DIVISION OF
OIL GAS & MINING

ENTITY ACTION FORM - FORM 6

ADDRESS _____

| ACTION CODE | CURRENT ENTITY NO | NEW ENTITY NO | API NUMBER | WELL NAME | WELL LOCATION | | | | | SPUD DATE | EFFECTIVE DATE |
|------------------|-------------------|---------------|--------------|-----------------|---------------|----|-----|-----|----------|-----------|----------------|
| | | | | | QQ | SC | TP | RG | COUNTY | | |
| A | 99999 | 11553 | 43-037-31525 | MEANDER 2D-1 | NWNW | 2 | 41S | 21E | SAN JUAN | | 10-19-93 |
| WELL 1 COMMENTS: | | | | | | | | | | | |
| A | 99999 | 11554 | 43-037-31576 | SAGUARO 2E-1 | SWNW | 2 | 41S | 23E | SAN JUAN | | 10-19-93 |
| WELL 2 COMMENTS: | | | | | | | | | | | |
| A | 99999 | 11555 | 43-037-31619 | LIZARD 4M | SWSW | 4 | 41S | 23E | SAN JUAN | | 10-19-93 |
| WELL 3 COMMENTS: | | | | | | | | | | | |
| A | 99999 | 11556 | 43-037-31574 | OCATILLA 11D #1 | NWNW | 11 | 41S | 23E | SAN JUAN | | 10-19-93 |
| WELL 4 COMMENTS: | | | | | | | | | | | |
| | 99999 | 11557 | 43-037-31618 | MULE 31-K-2 | SESW | 31 | 41S | 24E | SAN JUAN | | 10-19-93 |
| WELL 5 COMMENTS: | | | | | | | | | | | |

ACTION CODES (See instructions on back of form)

- A - Establish new entity for new well (single well only)
- B - Add new well to existing entity (group or unit well)
- C - Re-assign well from one existing entity to another existing entity
- D - Re-assign well from one existing entity to a new entity
- E - Other (explain in comments section)

L. CORDOVA (DOGMA)

Signature

ADMIN. ANALYST

10-19-93

Title

Date

NOTE: Use COMMENT section to explain why each Action Code was selected

Phone No () _____

FEBRUARY 8, 1994

TO: WELL FILE

FROM: K. M. HEBERTSON

RE: Status, Mule 31-K-2 43-037-31618 31-41S-24E

Per telephone conversation with the operator concerning the status of this well, it was determined that the well will not be drilled and the operator has acknowledged that the APD has expired. The operator has been informed that the APD will need to be refiled in order to drill this well at a future date.

As of the above date the APD has been rescinded and the file sent to the LA archives.

KMH

