

CHUSKA ENGERGY CO., Black Rock #10  
22, 40N, 29E, SE NE #873

COUNTY Apache AREA Black Rock Field LEASE NO. NOG 8702-1116

WELL NAME Chuska Energy Co., Black Rock 10

LOCATION SE NE SEC 22 TWP 40N RANGE 29E FOOTAGE 1720' FNL x 660 FEL  
 STATUS Dry TOTAL  
 ELEV 6745' GR 6758' KB SPUD DATE 7/5/93 - 7/16/93 COMP. DATE 8/4/93 DEPTH 6230'

CONTRACTOR Aztec Drilling Company Rig #301

CASING IZE	DEPTH	CEMENT	LINER SIZE & DEPTH	DRILLED BY ROTARY	DRILLED BY CABLE TOOL	PRODUCTIVE RESERVOIR	INITIAL PRODUCTION
<u>13 3/8"</u>	<u>130'</u>	<u>221 sx</u>		<u>X</u>		<u>none</u>	<u>none</u>
<u>8 5/8"</u>	<u>509'</u>	<u>325 sx</u>					

FORMATION TOPS	DEPTHS	SOURCE		REMARKS
		L.L.	E.L.	
MORRISON FM	SURF			(OPERATOR PICKS)
CHINLE FM	2018'			
DECHELLY SS	3176'			
ORGAN ROCK SH	3467'			
HERMOSA	4807'			
UPPER ISMAY	5407'			
LOWER ISMAY	5465'			
AKAH	5697'			
MOLAS FM	6153'			
MISSISSIPPIAN	6224'			

ELECTRIC LOGS	PERFORATED INTERVALS	PROD. INTERVALS	SAMPLE LOG
<u>DLL, FDC/CNL, ML, CYBERL</u>	<u>NONE</u>	<u>NONE</u>	<u>SAMPLE DESCRP.</u>
			<u>SAMPLE NO.</u>
			<u>CORE ANALYSIS</u>
			<u>DSTs</u>

REMARKS \*\*Applied for 6 month extension of permit\*\*  
RENEWED PERMIT JULY 1993, D&A

APP. TO PLUG VERBAL  
 PLUGGING REP. YES  
 COMP. REPORT YES

WATER WELL ACCEPTED BY \_\_\_\_\_

BOND CO. Valley National Bank, Phoenix, AZ BOND NO. Cert. of Deposit #2578904  
 DATE 12/10/89 ORGANIZATION REPORT X  
 BOND AMT. \$ 25,000 CANCELLED \_\_\_\_\_  
 FILING RECEIPT 2907 LOC. PLAT \_\_\_\_\_ WELL BOOK ✓ PLAT BOOK ✓  
 API NO. 02-001-20292 DATE ISSUED 1/30/90 DEDICATION NE qtr

PERMIT NUMBER 873

### WELL COMPLETION OR RECOMPLETION REPORT AND WELL LOG

DESIGNATE TYPE OF COMPLETION:

New Well  Work-Over  Deepen  Plug Back  Same Reservoir  Different Reservoir  Oil  Gas  Dry

DESCRIPTION OF WELL AND LEASE

Operator Chuska Energy Company		Address 3315 Bloomfield Highway, Farmington, NM 87401	
Federal, State or Indian Lease Number or name of lessor if free lease NOG8702-1116 Black Rock		Well Number 10	Field & Reservoir Black Rock Field
Location 1720' FNL & 6/40' FEL		County Apache	
Sec. TWP-Range or Block & Survey Section 22-Township 40North-Range 29East			
Date spudded 7-5-93/7-16-93	Date total depth reached 8-3-93	Date completed, ready to produce N/A	Elevation (DF, RKB, RT or Gr.) 6745 GR/6758 feet
Total depth 6230'	P.B.T.D. N/A	Single, dual or triple completion? N/A	If this is a dual or triple completion, furnish separate report for each completion.
Producing interval (s) for this completion N/A		Rotary tools used (interval) Yes	Cable tools used (interval)
Was this well directionally drilled? No	Was directional survey made? Yes	Was copy of directional survey filed?	Date filed
Type of electrical or other logs run (check logs filed with the commission) D11, FDC/CNL, ML			Date filed with completion report

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CASING RECORD

Casing (report all strings set in well - conductor, surface, intermediate, producing, etc.)						
Purpose	Size hole drilled	Size casing set	Weight (lb./ft.)	Depth set	Sacks cement	Amt. pulled
Conductor Csg	18"	13 3/8	48#, H-40SJ&C	130	221 sxs Cl'B	N/A
Surface	12 1/4"	8 5/8	24# J-FF SJ&C	509	325 sxs Cl'G	N/A

TUBING RECORD N/A

LINER RECORD N/A

Size in.	Depth set ft.	Packer set at ft.	Size in.	Top ft.	Bottom ft.	Sacks cement	Screen (ft)
PERFORATION RECORD N/A							
Number per ft.	Size & type	Depth Interval		Am't. & kind of material used		Depth Interval	

INITIAL PRODUCTION

Date of first production N/A		Producing method (indicate if flowing, gas lift or pumping--if pumping, show size & type of pump:) N/A					
Date of test	Hrs. tested	Choke size	Oil prod. during test bbls.	Gas prod. during test MCF	Water prod. during test bbls.	Oil gravity *API (Corr)	
Tubing pressure	Casing pressure	Cal'ed rate of Production per 24 hrs.	Oil bbls.	Gas MCF	Water bbls.	Gas-oil ratio	
Disposition of gas (state whether vented, used for fuel or sold): N/A							

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Operations Manager of the Chuska Energy Company (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

9-9-93  
Date

*Barry A. Wieland*  
Signature  
Barry A. Wieland

API 02-001-20292

Permit No. 873

**STATE OF ARIZONA**  
**OIL & GAS CONSERVATION COMMISSION**  
Well Completion or Recompletion Report and Well Log  
Form No. 4 File One Copy  
SEP 27 1993

**DETAIL OF FORMATIONS PENETRATED**

FORMATION	TOP	BOTTOM	DESCRIPTION*
Morrison	surface		
Chinle	2018'		
DeChelly	3176'		
Organ Rock	3467'		
Hermosa	4807'		
Upper Ismay	5407'		
Hovenweep Sh	5460'		
Lower Ismay	5465'		
Gothic Sh	5543'		
Desert Creek	5555'		
Chimney Rock SH	5690'		
Akah	5697'		
Barker Creek	5845'		
Pinkerton Trail	5966'		
Molsa	6153'		
Mississippian	6224'		

\* Show all important zones of porosity, detail of all cores, and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries.

**INSTRUCTIONS:**

Attach driller's log or other acceptable log of well.

This Well Completion or Recompletion report and well log shall be filed with the State of Arizona Gas Conservation Commission not later than thirty days after project completion.

STATE: ARIZONA  
 COUNTY: APACHE  
 API 02-001-20292  
 FIELD: BLACK ROCK  
 WELL CLASS: D  
 OPR: CHUSKA ENERGY

REISSUE

40N-29E 22  
 N2 SE NE  
 1720 FNL 660 FEL  
 STATUS: D&A

*P/N 873*

10 BLACK ROCK

SPUD: 07/16/93 COMP: 08/03/93 ELEV: 6758 KB 6745 GR  
 ID: 6230 (08/02/93) FM/ID: MISSISSIPPIAN  
 CONTR: NOT RPTD (R)  
 PROJ DEPTH/FM: 6522 PARADOX

COMP 8/3/93, D&A NO CORES OR DSTS REISSUE TO ADD & CORRECT DATA REPLACES CARD ISSUED 5/9/94

LOC DESCRIPTION: 3/4 MI E OF FLD(SMAY)AZ 7 MI W-SW TEEC NOS POC, AZ;  
 WELL ID CHANGES: FTG CHGD FROM 1720 FNL 640 FEL. SPOT CHGD FROM NE SE NE. API # CHGD FROM 02-001-60035

CASING: 13 3/8 @ 130 W/221 SX, 8 5/8 @ 509 W/325 SX;

LOG TYPES: CNL, DLL, FDC, MIDL;

LOG TOPS:

MORRISON	(SURF) 6758	ISMAY U	5407	1351
CHINLE	2018 4740	ISMAY L	5465	1293
DE CHELLY	3176 3582	GOTHIC	5543	1215
ORGAN ROCK	3487 3291	DESERT CREEK	5555	1203
HERMOSA	4807 1951	CHIMNEY ROCK	5690	1066

(OVER)

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DATE 11/17/97 CARD # 00001-F COR

STATE: ARIZONA  
 COUNTY: APACHE  
 API 02-001-20292  
 FIELD: BLACK ROCK  
 WELL CLASS: D  
 OPR: CHUSKA ENERGY

REISSUE

40N-29E 22  
 N2 SE NE  
 1720 FNL 660 FEL  
 STATUS: D&A

10 BLACK ROCK

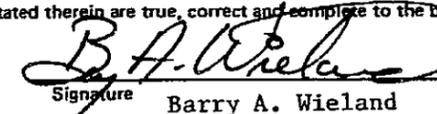
(CONTINUED)

AKAH	5897	1061	MOLAS	6153	605
BARKER CREEK	5845	913	MISSISSIPPIAN	6224	534
PINKERTON TRAIL	5966	792			

TD 8230 528  
 SUBSEA MEASUREMENTS FROM KB;  
 DRILG COMMENTS: LOCAL CALL: HOVENWEEP 5460  
 OPER ADD: 315 N BEHREND, FARMINGTON, NM, 87401 PHONE (505) 328-5525; AMMANN BASE MAP AZ-1.

DATE 11/17/97 CARD # 00001-F COR

**PLUGGING RECORD**

Operator <b>Chuska Energy Company</b>		Address <b>3315 Bloomfield Hwy, Farmington, NM 8740</b>			
Federal, State, or Indian Lease Number <b>Black Rock #10</b> or lessor's name if fee lease. <b>NOG8702-1116</b>		Well No. <b>10</b>	Field & Reservoir <b>Black Rock Field</b>		
Location of Well <b>1740' FNL &amp; 640' FEL</b>		Sec-Twp-Rge or Block & Survey <b>Section 22-Township 40North-Range 29East</b>	County <b>Apache</b>		
Application to drill this well was filed in name of <b>Chuska Energy Company</b>		Has this well ever produced oil or gas <b>N/A</b>	Character of well at completion (initial production): Oil (bbbls/day) _____ Gas (MCF/day) _____ Dry? <b>Yes</b>		
Date plugged: <b>8-4-93</b>	Total depth <b>6230'</b>	Amount well producing when plugged: Oil (bbbls/day) <b>N/A</b> Gas (MCF/day) <b>N/A</b> Water (bbbls/day) <b>N/A</b>			
Name of each formation containing oil or gas. Indicate which formation open to wellbore at time of plugging	Fluid content of each formation <b>N/A</b>	Depth interval of each formation <b>N/A</b>	Size, kind & depth of plugs used. Indicate zones squeeze cemented, giving amount cement		
<b>Plug #1</b>		<b>5955-5815</b>	<b>100% excess 50 sxs 'G'</b>		
<b>Plug #2</b>		<b>5554-5394</b>	<b>100% excess 75 sxs 'G'</b>		
<b>Plug #3</b>		<b>4847-4742</b>	<b>100% excess 50 sxs 'G'</b>		
<b>Plug #4</b>		<b>1298-1198</b>	<b>100% excess 50 sxs 'G'</b>		
<b>Plug #5</b>		<b>555-455</b>	<b>100% excess 50 sxs 'G'</b>		
<b>Plug #6</b>		<b>CASING RECORD 61-surface</b>	<b>50% excess 25 sxs 'G'</b>		
Size pipe	Put in well (ft.)	Pulled out (ft.)	Left in well (ft.)	Give depth and method of parting casing (shot, ripped, etc.)	Packers and shoes
<b>13 3/8</b>	<b>130'</b>	<b>---</b>	<b>130'</b>		<b>Csg Shoe @ 555-455</b>
<b>8 5/8</b>	<b>509'</b>	<b>---</b>	<b>509'</b>		
Was well filled with heavy drilling mud, according to requirements? <b>Yes</b>		Indicate deepest formation containing fresh water. <b>N/A</b>			
<b>NAMES AND ADDRESSES OF ADJACENT LEASE OPERATORS OR OWNERS OF THE SURFACE</b>					
Name	Address		Direction from this well:		
<b>N/A</b>					
In addition to other information required on this form, if this well was plugged back for use as a fresh water well, give all pertinent details of plugging operations to base of fresh water sand, perforated interval to fresh water sand, name and address of surface owner, and attach letter from surface owner authorizing completion of this well as a water well and agreeing to assume full liability for any subsequent plugging which might be required.					
Use reverse side for additional detail.					
CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the <u>Operations Manager</u> of the <u>Chuska Energy Company</u> (company) and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.					
Date <b>9-9-93</b>	Signature  <b>Barry A. Wieland</b>				
Permit No. <b>873</b>	STATE OF ARIZONA OIL & GAS CONSERVATION COMMISSION Plugging Record File One Copy <b>SEP 27 1993</b> Form No. 10				

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Form 3160-4  
(October 1990)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE\*

(See other instructions on side)

FOR APPROVED  
OMB NO. 1004-0137  
Expires: December 31, 1991

WELL COMPLETION OR RECOMPLETION REPORT AND LOG\*

1. TYPE OF WELL: OIL WELL  GAS WELL  DRY  Other P & A

2. TYPE OF COMPLETION: NEW WELL  WORK OVER  REPAIR  PLUG BACK  DIFF. CONTR.  Other \_\_\_\_\_

3. NAME OF OPERATOR  
Chuska Energy Company

4. ADDRESS AND TELEPHONE NO.  
3315 Bloomfield Hwy, Farmington, NM 87401 (505) 326-5525

5. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)\*  
At surface 1720 FNL 640 FEL  
At top prod. interval reported below  
At total depth

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14. PERMIT NO. DATE ISSUED

6. LEASE DESIGNATION AND SERIAL NO.  
8702-1139

8. IF INDIAN, ALLOTTEE OR TRIBE NAME  
Navajo

7. UNIT AGREEMENT NAME  
Permit 873

8. FARM OR LEASE NAME, WELL NO.  
Black Rock #10

9. APIWELL NO.

10. FIELD AND POOL OR WILDCAT  
Black Rock Field

11. SEC. T. R. M. OR BLOCK AND SURVEY OR AREA  
Section 22-T40N-R29E

12. COUNTY OR PARISH  
Apache

13. STATE  
Arizona

15. DATE SPUDDED 7-5-93/7-16-93 16. DATE T.D. REACHED 8-3-93 17. DATE COMPL. (Ready to prod.) N/A 18. ELEVATIONS (DP, RKB, RT, CR, ETC.)\* 6745 GR/6758 KB 19. ELEV. CASINGHEAD 6745 GR/6758 KB

20. TOTAL DEPTH, MD & TVD 6230' 21. PLUG BACK T.D., MD & TVD N/A 22. IF MULTIPLE COMPL., HOW MANY\* N/A 23. INTERVALS DRILLED BY ROTARY TOOLS Yes CABLE TOOLS \_\_\_\_\_

24. PRODUCING INTERVAL(S) OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)\* N/A 25. WAS DIRECTIONAL SURVEY MADE Yes

26. TYPE ELECTRIC AND OTHER LOGS RUN D11, FDC/CNL, ML 27. WAS WELL CORRED NO

28. CASING RECORD (Report all strings set in well)

CASING SIZE/GRADE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	TOP OF CEMENT, CEMENTING RECORD	AMOUNT PULLED
Conductor Csg	48#, H-40SJ&C	130	18"	221 dxs CL'G'	N/A
Surface	24#, J-36SJ&C	509	12 1/4"	325 dxs CL'G'	N/A

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)
N/A				

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
N/A		

31. PERFORATION RECORD (Interval, size and number)  
N/A

32. N/A ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED

33. PRODUCTION

DATE FIRST PRODUCTION N/A PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump) N/A WELL STATUS (Producing or shut-in)

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD	OIL—BSL.	GAS—MCF.	WATER—BSL.	GAS-OIL RATIO

FLOW, TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL—BSL.	GAS—MCF.	WATER—BSL.	OIL GRAVITY-API (CORR.)

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.) N/A TEST WITNESSED BY \_\_\_\_\_

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED [Signature] TITLE Operations Manager DATE September 29, 1993

\*(See Instructions and Spaces for Additional Data on Reverse Side)

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 statements or representations as to any matter within its jurisdiction.

37. SUMMARY OF POROUS ZONES: (Show all important zones of porosity and contents thereof; cored intervals; and all drill-logs, tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries);

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.	GEOLOGIC MARKERS		
				NAME	TOP MEAS. DEPTH	TRUE VERT. DEPTH
The Black Rock #10 well was plugged with the following program on 8-4-93 with Class 'G' Cement (yield = 1.18 ft <sup>3</sup> /sx).						
Plug #1 Pinkerton	5955	5815	100% excess 50 sxs 'G'	Morrison	Surface	Surface
Plug #2 U. Ismay	5554	5394	100% excess 75 sxs 'G'	Chinle	2018'	2018'
Plug #3 Hermosa	4847	4742	100% excess 50 sxs 'G'	DeChelly	3176'	3176'
Plug #4 Pinkerton	1298	1198	100% excess 50 sxs 'G'	Organ Rock	3467'	3467'
Plug #5 Chinle	555	455	100% excess 50 sxs 'G'	Hermosa	4807'	4807'
Plug #6 S/Csg Shoe	61	Surface	50% excess 25 sxs 'G'	U. Ismay	5407'	5407'
Morrison				Hovenweep Shale	5460'	5460'
				L. Ismay	5465'	5465'
				Gothic Shale	5543'	5543'
				Desert Creek	5555'	5555'
				Chimney Rock	5690'	5690'
				Shale	5697'	5697'
				Akah	5845'	5845'
				Baker Creek	5966'	5966'
				Pinkerton Trail	6153'	6153'
				Molas	6224'	6224'
				Mississippian		

38. GEOLOGIC MARKERS

Form 3160-5  
(June 1990)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

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

3. Lease Designation and Serial No.

8702-1139

6. If Indian, Allottee or Tribe Name

Navajo

7. If Unit or CA, Agreement Designation

Permit 873

8. Well Name and No.

Black Rock #10

9. API Well No.

10. Field and Pool, or Exploratory Area

Black Rock Paradox

11. County or Parish, State

Apache County, AZ

SUBMIT IN TRIPLICATE

1. Type of Well

Oil Well  Gas Well  Other

2. Name of Operator

Chuska Energy Company

3. Address and Telephone No.

3315 Bloomfield Hwy, Farmington, NM 87401 (505) 326-5525

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

1720 FNL 660 FEL  
Section 22-T40N-R29E

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

TYPE OF SUBMISSION	TYPE OF ACTION	
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment	<input type="checkbox"/> Change of Plans
<input checked="" type="checkbox"/> Subsequent Report	<input type="checkbox"/> Recompletion	<input type="checkbox"/> New Construction
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Plugging Back	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> Water Shut-Off
	<input type="checkbox"/> Altering Casing	<input type="checkbox"/> Conversion to Injection
	<input checked="" type="checkbox"/> Other P & A	<input type="checkbox"/> Dispose Water

(Note: Report results of multiple completion on a 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.)

The Black Rock #10 well will be plugged with the following program on 8-4-93 with Class 'G' cement (yield = 1.18 ft<sup>3</sup>/sx).

Plug No.	Setting Depth	Formation	% Excess	No. Sacks
1	5955-5815	Pinkerton	100	50
2	5554-5394	U. Ismay	100	75
3	4847-4742	Hermosa	100	50
4	1298-1198	Chinle	100	50
5	555-455	Sf/Csg Shoe	100	50
6	61-Surface	Morrison	50	25

All plugs were Class 'G' Neat cement. Plugs 4, 5, and 6 contained 2% CaCl<sub>2</sub>.  
All plugs were displaced with mud. Aztec Rig No. 301 released 6:00 AM, 8-4-93.

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

Signature [Signature]

Title Operations Manager

Date September 29, 1993

(This space for Federal or State office use)

Approved by \_\_\_\_\_  
Conditions of approval, if any:

Title \_\_\_\_\_

Date \_\_\_\_\_

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 representation as to any matter within its jurisdiction.

See Instruction on Reverse Side



SUNDRY NOTICES AND REPORTS

1. Name of Operator Chuska Energy Compa

2. OIL WELL [ ] GAS WELL [ ] OTHER [ ] (Specify) \_\_\_\_\_

3. Well Name Black Rock #10  
 Location 1720' FNL. 660' FEL  
 Sec. 22 Twp. 40N Rge. 29E County Apache, Arizona.

4. Federal, State or Indian Lease Name, or lessor's name if fee lease \_\_\_\_\_  
NOG 8702-1116 Navajo Tribal **AZ OIL & GAS CONSERVATION COMMISSION**

5. Field or Pool Name Black Rock Paradox JUL 9 1991

6. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO		SUBSEQUENT REPORT OF	
TEST WATER SHUT OFF [ ]	PULL OR ALTER CASING [ ]	WATER SHUT OFF [ ]	MONTHLY PROGRESS [ ]
FRACTURE TREAT [ ]	DIRECTIONAL DRILL [ ]	FRACTURE TREATMENT [ ]	REPAIRING WELL [ ]
SHOOT OR ACIDIZE [ ]	PERFORATE CASING [ ]	SHOOTING OR ACIDIZING [ ]	ALTERING CASING [ ]
REPAIR WELL [ ]	CHANGE PLANS [ ]	(OTHER) _____ [ ]	ABANDONMENT [ ]
(OTHER) <u>Extend APD approval</u> [X]			

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

7. 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.)

Owing to further evaluation of the prospect and reserves, spud of this well has been delayed. Chuska Energy therefore applies for a six-month extension to the approved APD on this well.

2-1-92 **APPROVED**  
 By SC Raniz  
 Date 7-10-91  
 ARIZONA STATE OIL & GAS  
 CONSERVATION COMMISSION

8. I hereby certify that the foregoing is true and correct.  
 Signed [Signature] Title Operations Engineer Date 7-5-91  
Christopher S.W. Hill

STATE OF ARIZONA  
 OIL & GAS CONSERVATION COMMISSION  
 Sundry Notices and Reports on Wells  
 File One Copy

Permit No. 00873

Form No. 25

SUNDRY NOTICES AND REPORTS

1. Name of Operator Chuska Energy Company

2. OIL WELL [ ] GAS WELL [ ] OTHER [ ] (Specify) \_\_\_\_\_

3. Well Name Black Rock #10

Location 1720' FNL, 660' FEL

Sec. 22 Twp. 40N Rge. 29E County Apache, Arizona.

4. Federal, State or Indian Lease Name, or lessor's name if fee lease \_\_\_\_\_  
NOG 8702-1116 Navajo Tribal

5. Field or Pool Name Black Rock Paradox

6. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO		SUBSEQUENT REPORT OF	
TEST WATER SHUT OFF [ ]	PULL OR ALTER CASING [ ]	WATER SHUT OFF [ ]	MONTHLY PROGRESS [ ]
FRACTURE TREAT [ ]	DIRECTIONAL DRILL [ ]	FRACTURE TREATMENT [ ]	REPAIRING WELL [ ]
SHOOT OR ACIDIZE [ ]	PERFORATE CASING [ ]	SHOOTING OR ACIDIZING [ ]	ALTERING CASING [ ]
REPAIR WELL [ ]	CHANGE PLANS [ ]	(OTHER) _____	ABANDONMENT [ ]
(OTHER) <u>Extend APD approval</u> [X]			

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

7. 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.)

Owing to further evaluation of the prospect and reserves, spud of this well has been delayed. Chuska Energy therefore applies for a six-month extension to the approved APD on this well.

**APPROVED**

By Steven L. Rainz

Date 2-1-91

**RECEIVED**  
 AZ OIL & GAS CONSERVATION COMMISSION  
 JAN 25 1991  
 DIVISION OF OIL, GAS & MINING  
 JAN 31 1991

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

Signed [Signature] Title Operations Engineer Date 1-17-91  
Christopher S.W. Hill

STATE OF ARIZONA  
 OIL & GAS CONSERVATION COMMISSION  
 Sundry Notices and Reports on Wells  
 File One Copy

Permit No. 00873

Form No. 25

**SUNDRY NOTICES AND REPORTS ON WELLS**

1. Name of Operator Chuska Energy Company

2. OIL WELL  GAS WELL  OTHER  (Specify) \_\_\_\_\_

3. Well Name Black Rock #10

Location 1720' FNL, 660' FEL

Sec. 22 Twp. 40 Rge. 29 County Apache, Arizona.

4. Federal, State or Indian Lease Number, or lessor's name if fee lease Navajo Tribal

5. Field or Pool Name Black Rock

6. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALIEN CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	MONTHLY PROGRESS <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	DIRECTIONAL DRILL <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	PERFORATE CASING <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>		ABANDONMENT <input type="checkbox"/>
(OTHER) _____		(OTHER) <u>Move Location</u>	<input checked="" type="checkbox"/>

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

7. 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.)

Location to be moved, from 1720' FNL/640' FEL to 1720' FNL/660' FEL, in order to comply with State well spacing regulations.

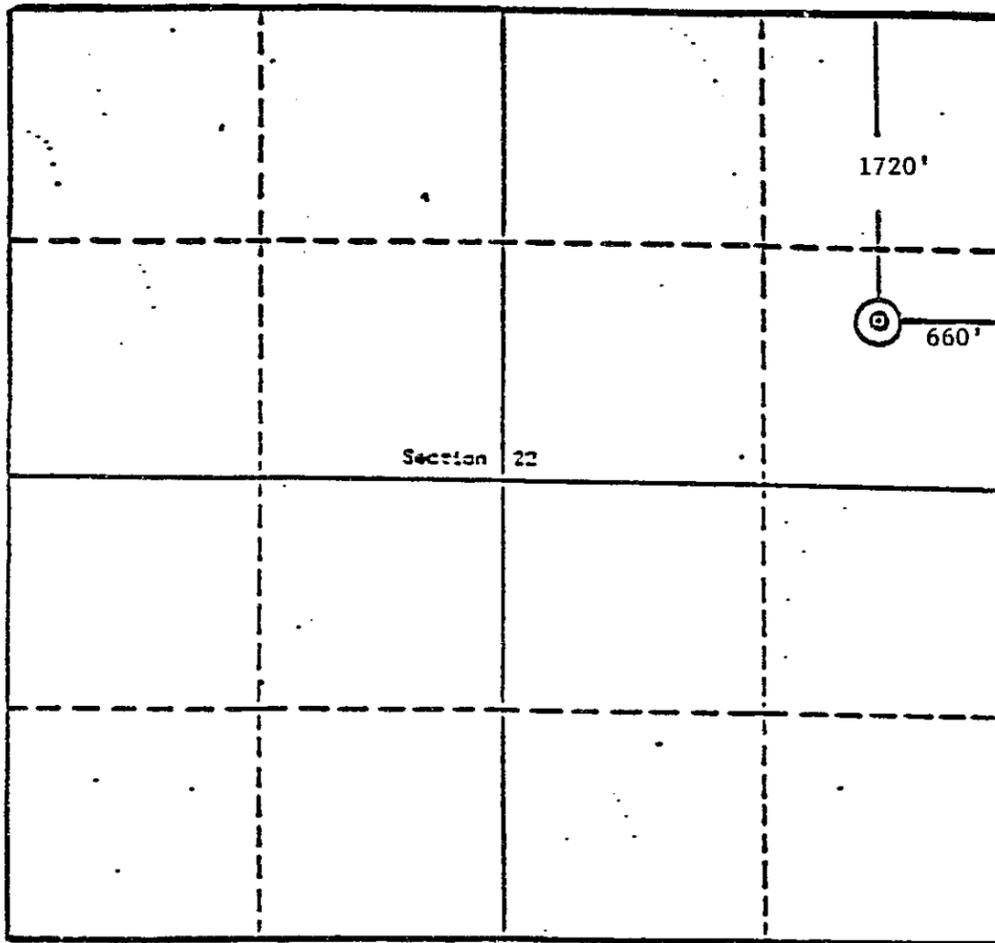
8. I hereby certify that the foregoing is true and correct.

Signed [Signature] Title Operations Manager Date 01-19-90

Permit No. \_\_\_\_\_

STATE OF ARIZONA  
OIL & GAS CONSERVATION COMMISSION  
Sundry Notices and Reports On Wells  
Form No. 25 File One Copy

Company Cuska Energy Company  
 Well Name & No. Black Rock #10  
 Location 1720' F/M 660' F/E  
 Sec. 22, T. 40 N., R. 29 E., G. & S. R. M., County Apache, Arizona  
 Ground Elevation 6745



Scale, 1 inch = 1,000 feet

Surveyed January 18, 1990

This is to certify that the above plat was prepared from field notes of actual surveys made by me or under my supervision and that the same are true and correct to the best of my knowledge and belief.

Seal:



Edgar L. Risenhoover  
 Edgar L. Risenhoover  
 Professional Land Surveyor  
 Arizona Reg. No. 14207

**AZ OIL & GAS  
CONSERVATION COMMISSION**

JAN 26 1990

**SUNDRY NOTICES AND REPORTS ON WELLS**

1. Name of Operator Chuska Energy Company  
 2. OIL WELL  GAS WELL  OTHER  (Specify) \_\_\_\_\_  
 3. Well Name Black Rock #10  
 Location 1720' FNL, 660' FEL  
 Sec. 22 Twp. 40 Rgn. 29 County Apache, Arizona.  
 4. Federal, State or Indian Lease Number, or lessor's name if fee lease Navajo Tribal  
 5. Field or Pool Name Black Rock

6. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF <input type="checkbox"/>	FULL OR ALTER CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	MONTHLY PROGRESS <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	DIRECTIONAL DRILL <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	PERFORATE CASING <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	(OTHER) <u>Move Location</u> <input checked="" type="checkbox"/>	ABANDONMENT <input type="checkbox"/>

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

7. 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.)

Location to be moved, from 1720' FNL/640' FEL to 1720' FNL/660' FEL, in order to comply with State well spacing regulations.

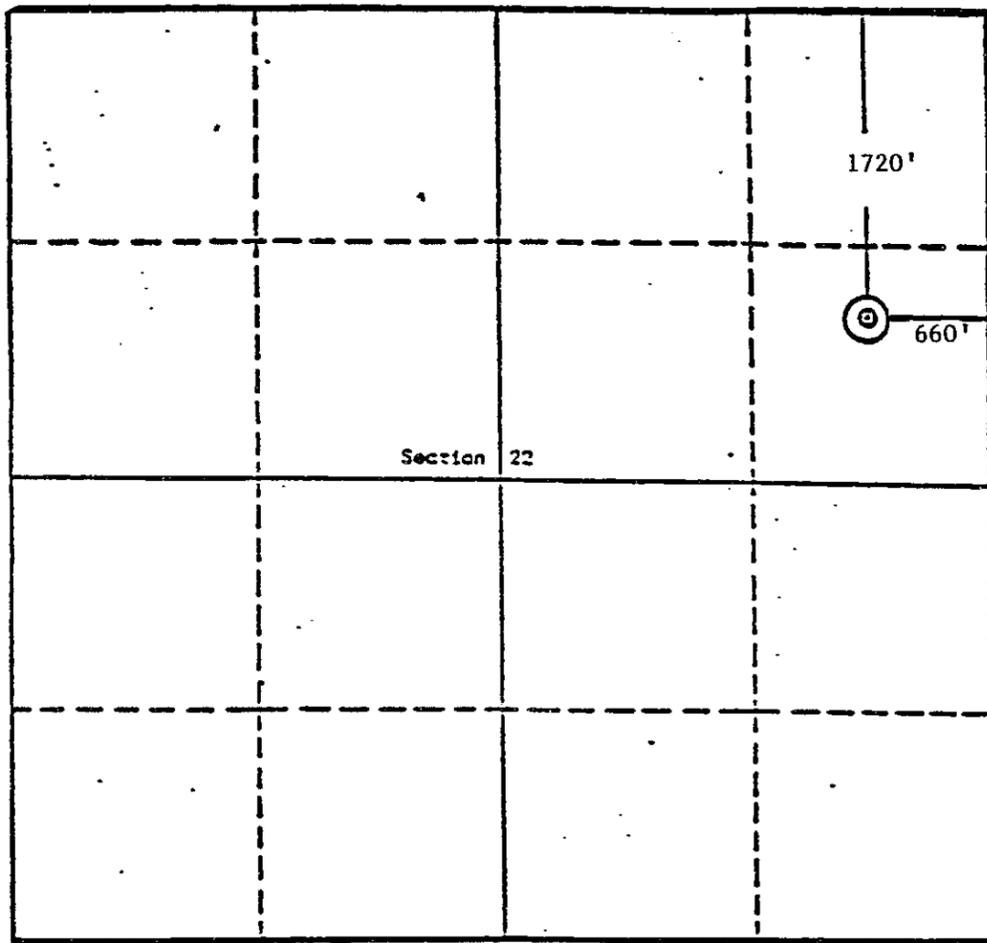
8. I hereby certify that the foregoing is true and correct.

Signed [Signature] Title Operations Manager Date 01-19-90

Permit No. 873

STATE OF ARIZONA  
 OIL & GAS CONSERVATION COMMISSION  
 Sundry Notices and Reports On Wells  
 Form No. 25 File One Copy

Company Chuska Energy Company  
 Well Name & No. Black Rock #10  
 Location 1720' F/M 660' F/E  
 Sec. 22, T. 40 N., R. 29 E., G. & S. R. M., County Apache, Arizona  
 Ground Elevation 6745



Scale, 1 inch = 1,000 feet

Surveyed \_\_\_\_\_ January 18, \_\_\_\_\_, 19<sup>90</sup>

This is to certify that the above plat was prepared from field notes of actual surveys made by me or under my supervision and that the same are true and correct to the best of my knowledge and belief.

Seal:



Edgar L. Risenhoover  
 Edgar L. Risenhoover  
 Professional Land Surveyor  
 Arizona Reg. No. 14207

Form 3160-3  
(November 1983)  
(formerly 9-331C)

SUBMIT IN TRIPLICATE\*  
(Other instructions on reverse side)

Form approved.  
Budget Bureau No. 1004-0136  
Expires August 31, 1985

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK  
 DRILL       DEEPEN       PLUG BACK

b. TYPE OF WELL  
 OIL WELL       GAS WELL       OTHER       SINGLE ZONE       MULTIPLE ZONE

2. NAME OF OPERATOR  
Chuska Energy Company

3. ADDRESS OF OPERATOR  
315 N. Behrend, Farmington, N.M. 87401

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)  
 At surface: 1720' FNL x 640' FEL  
 At proposed prod. zone: Same

5. LEASE DESIGNATION AND SERIAL NO.  
NOC 8702-1116

6. IF INDIAN, ALLOTTEE OR TRIBE NAME  
Navajo Tribal

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME  
Black Rock

9. WELL NO.  
10

10. FIELD AND POOL, OR WILDCAT  
Black Rock Paradox

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA  
Sec. 22, T40N, R29E

12. COUNTY OR PARISH      13. STATE  
Apache      Arizona

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE\*  
6 miles west-southwest of Teec Nos Pos, Arizona

15. DISTANCE FROM PROPOSED\* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drig. unit line, if any)  
640'

16. NO. OF ACRES IN LEASE  
50,000

17. NO. OF ACRES ASSIGNED TO THIS WELL  
160

18. DISTANCE FROM PROPOSED LOCATION\* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.  
4300'

19. PROPOSED DEPTH  
6522'

20. ROTARY OR CABLE TOOLS  
Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)  
6745 GL      6759 KB

22. APPROX. DATE WORK WILL START\*  
2-1-1990

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12 1/4	8 5/8	24	500	360 sks (414 cf)
7 7/8	5 1/2	15.5	6422	710 sks (1174 cf)

Well will be drilled to test the Paradox formation. If the Paradox is productive, the well will TD @ 6204'. If the Paradox is non-productive well may be deepened to 6522' for use as a SWD well.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, 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.

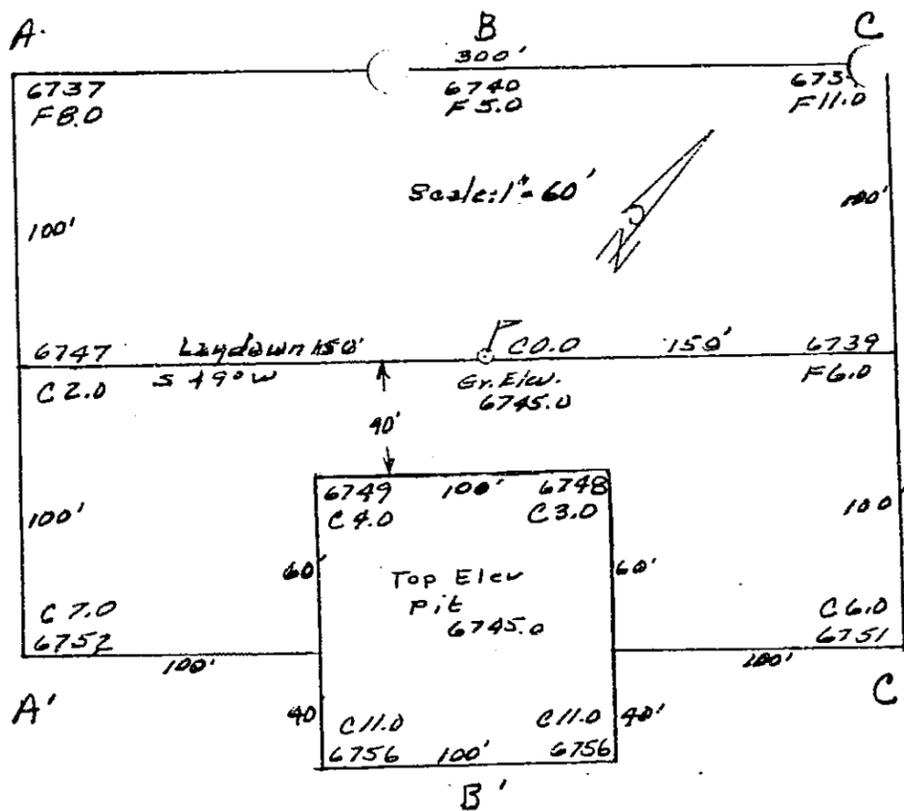
24. SIGNED Donald S. Barnes TITLE Operations Manager DATE 11-8-89  
 (This space for Federal or State office use)

PERMIT NO. 873 APPROVAL DATE \_\_\_\_\_

APPROVED BY \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_  
 CONDITIONS OF APPROVAL, IF ANY:

\*See Instructions On Reverse Side

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 statements or representations as to any matter within its jurisdiction.



Chuska Energy Company

OPERATOR

Black Rock #10

WELL NAME & NO.

1720' F/NL 640' F/EL

FOOTAGES

22 40N 29 E

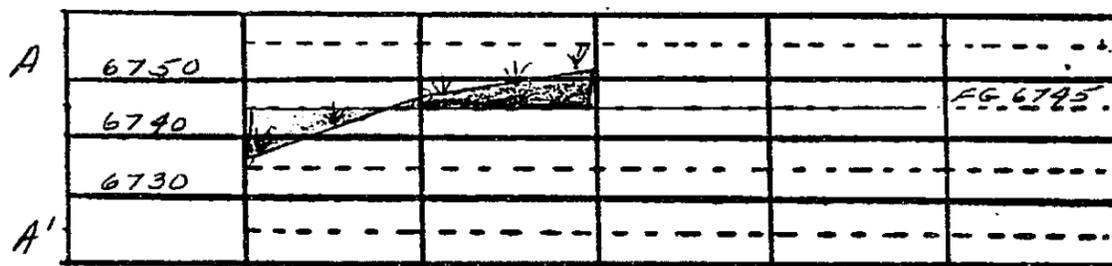
SEC. TWP. RGE.

Apache County, Arizona

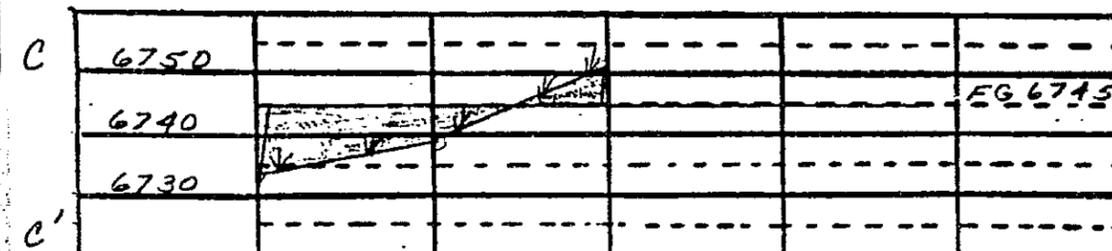
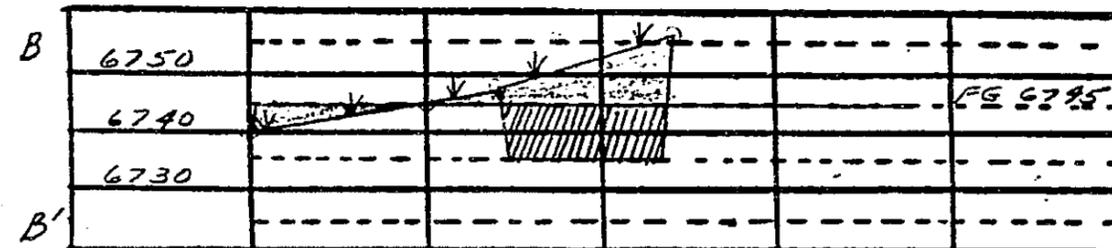
COUNTY

October 18, 1989

DATE



Horz. 1" = 100'  
Vert. 1" = 30'



**APPLICATION FOR PERMIT TO DRILL OR RE-ENTER**

APPLICATION TO DRILL

RE-ENTER OLD WELL

NAME OF COMPANY OR OPERATOR

**Chuska Energy Company**

Address **315 N. Behrend**

City **Farmington**

State **N.M. 87401**

Drilling Contractor

**To be determined**

Address

**DESCRIPTION OF WELL AND LEASE**

Federal, State or Indian Lease Number, or if fee lease, name of lessor <b>NOG 8702-1116</b>	Well number <b>Black Rock 10</b>	Elevation (ground) <b>6745'</b>
Nearest distance from proposed location to property or lease line: <b>640</b> feet	Distance from proposed location to nearest drilling, completed or applied--for well on the same lease: <b>4300</b> feet	
Number of acres in lease: <b>50,000</b>	Number of wells on lease, including this well, completed in or drilling to this reservoir: <b>4</b>	
If lease, purchased with one or more wells drilled, from whom purchased: <b>N/A</b>		
Well location (give footage from section lines) <b>1720' ENL x 640' FEL</b>	Section--township--range or block and survey <b>Sec. 22, T40N, R29E</b>	Dedication (Comply with Rule 105)
Field and reservoir (if wildcat, so state) <b>Black Rock Paradox</b>	County <b>Apache</b>	
Distance in miles, and direction from nearest town or post office <b>6 miles west -southwest Teec Nos Pos, Arizona</b>		
Proposed depth: <b>6522'</b>	Rotary or cable tools <b>Rotary</b>	Approx. date work will start <b>2-1-90</b>
Bond Status <b>Pending</b>	Organization Report	Filing Fee of \$25.00
Amount <b>\$25,000</b>	On file Or attached	Attached

Remarks:

Well will be drilled to test the Paradox Formation. If the Paradox is productive the well will TD @ 6204. If the Paradox is nonproductive well may be deepened to 6522' for use as a SWD.

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Operations Manager of the Chuska Energy Company (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Signature

**Donald S. Barnes**

Date

**11-8-89**

Permit Number: **873**

Approval Date: **2/1/90**

Approved By: *[Signature]*

Notice: Before sending in this form be sure that you have given all information requested. Much unnecessary correspondence will thus be avoided.

Form No. 3

**STATE OF ARIZONA**  
**OIL & GAS CONSERVATION COMMISSION**  
Application to Drill or Re-enter  
File Two Copies

1. Operator shall outline the dedicated acreage for *both* oil and gas wells on the plat.
2. A registered professional engineer or land surveyor registered in the State of Arizona or approved by the Commission shall show on the plat the location of the well and certify this information in the space provided.
3. ALL DISTANCES SHOWN ON THE PLAT MUST BE FROM THE OUTER BOUNDARIES OF THE SECTION.
4. Is the Operator the only owner in the dedicated acreage outlined on the plat below? YES  NO .
5. If the answer to question four is "no," have the interests of all the owners been consolidated by communitization agreement or otherwise? YES  NO . If answer is "yes," Type of Consolidation \_\_\_\_\_
6. If the answer to question four is "no," list all the owners and their respective interests below:

Owner	Land Description
<p><b>CERTIFICATION</b></p> <p>I hereby certify that the information above is true and complete to the best of my knowledge and belief.</p> <p><i>Donald S. Barnes</i> Name Donald S. Barnes Position Operations Manager Company Chuska Energy Company Date 11-8-89</p> <p>I hereby certify that the well location shown on the 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.</p> <p>Date Surveyed _____ Registered Professional Engineer and/or Land Surveyor Edgar L. Risenhoover #14207 Certificate No. _____</p>	

**PROPOSED CASING PROGRAM**

Size of Casing	Weight	Grade & Type	Top	Bottom	Cementing Depths	Sacks Cement	Type
8 5/8	24	K55	0	500	500	360 sks	Class "G"
5 1/2	15.5	K55	0	6522	6522	710 sks	Class "G"



## PERMIT TO DRILL

This constitutes the permission and authority from the  
**OIL AND GAS CONSERVATION COMMISSION,  
STATE OF ARIZONA,**

To: CHUSKA ENERGY COMPANY  
(OPERATOR)

to drill a well to be known as

Black Rock No. 10  
(WELL NAME)

located 1720' PNL X 660' FEL

Section 22 Township 40N Range 29E, Apache County, Arizona.

The 1720' PNL X 660' FEL of said  
Section, Township and Range is dedicated to this well.

Said well is to be drilled substantially as outlined in the attached Application and must be drilled  
in full compliance with all applicable laws, statutes, rules and regulations of the State of Arizona.

Issued this 30th day of January, 1990.

**OIL AND GAS CONSERVATION COMMISSION**

By [Signature]  
EXECUTIVE DIRECTOR

PERMIT 00873

RECEIPT NO. 2907

A.P.I. NO. 02-001-20292

State of Arizona  
Oil & Gas Conservation Commission  
Permit to Drill

FORM NO. 27

STATE OF ARIZONA  
OIL AND GAS CONSERVATION COMMISSION  
REPORT ON PROPOSED OPERATIONS

PERMIT NO. 873

Chuska Energy Company  
315 N. Behrend  
Farmington, NM 87401

Phoenix, Arizona  
January 30, 1990

Your proposal to drill well Black Rock No. 10, A.P.I. No. 02-001-20292,  
Section 22, T.40N, R.29E, G&SR B. & M., Black Rock field, Apache County, dated 11/8/89,  
received 11/89 has been examined in conjunction with records filed in this office.

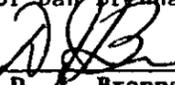
**THE PROPOSAL IS APPROVED PROVIDED:**

1. THIS WELL SHALL NOT BE USED FOR SALT WATER DISPOSAL UNLESS AUTHORIZED BY THE COMMISSION AFTER NOTICE AND HEARING PURSUANT TO RULE 12-7-176.
2. Mud pits are constructed and lined in a manner that will prevent contamination of surface or subsurface waters.
3. Drilling mud consistent with sound drilling practices shall be used at all times and sufficient amounts of lost circulation material shall be available at the drill site.
4. The well shall be cased and cemented in such a manner that will protect all zones that contain oil, gas, or fresh water.
5. Blowout prevention equipment shall be installed, tested, and maintained in a manner necessary to assure well control throughout the drilling, completion, or abandonment of the well.
6. Monitoring for H<sub>2</sub>S shall be continuous from 4000' to T.D. An H<sub>2</sub>S Safety Representative shall be on site for all Drill Stem Tests, cores, trip gas, and circulation of bottom's up.
7. Sundry reports shall be filed as required.
8. Two sets of samples of all cores and cuttings shall be taken at a maximum interval of ten feet. One set each shall be shipped prepaid to:
  - a. Oil & Gas Commission, 5150 N. 16th St., Ste. B141, Phoenix, AZ 85016.
  - b. Arizona Geological Survey, 845 N. Park Ave., Tucson, AZ 85719.
9. Samples and all logs and surveys of any description shall be filed within 30 days after the removal of the rig from the hole.
10. Application to Plug and Abandon (Form 9) shall be submitted to the Commission for approval prior to the beginning of operations to plug the well.
11. THIS COMMISSION SHALL BE NOTIFIED:
  - a. Immediately when drilling operations commence.
  - b. In time to witness the running and cementing of the surface casing.
  - c. In time to witness pressure testing of BOPE prior to drilling out of the surface casing.
  - d. In time to witness plugging and abandonment operations.

To witness operations, call 602-255-5161.

After office hours notify: Steve Rauzi, 602-864-9148 or Dan Brennan, 602-971-2909.

C.D. # 2578904, Valley National Bank

By   
D. J. Brennan, Executive Director

A COPY OF THIS REPORT AND THE PROPOSAL MUST BE POSTED AT THE DRILLER'S STATION PRIOR TO COMMENCING OPERATIONS.

RECORDS FOR WORK DONE UNDER THIS PERMIT ARE DUE WITHIN 30 DAYS AFTER THE WORK HAS BEEN COMPLETED OR THE OPERATIONS HAVE BEEN SUSPENDED.

CHUSKA ENERGY COMPANY

10 POINT DRILLING PLAN

Black Rock WELL NO. 10  
SECTION 22, TOWNSHIP 40N, RANGE 29E  
1720' FNL, 640' FEL  
Apache COUNTY, Arizona

1. SURFACE FORMATION

Geological name of surface formation; Morrison.

2. ELEVATION

Surface elevation is 6745' GR, 6759' KB.

3. ESTIMATED FORMATION TOPS

<u>Depth</u>	<u>Formation</u>	<u>Sub Sea</u> <u>Elevation</u>	
Surface	Morrison	+ 6759'	
2037'	Chinle	+ 4722'	
3047'	De Chelly	+ 3712'	water
3415'	Organ Rock	+ 3344'	
4057'	Cutler	+ 2702'	
4777'	Hermosa	+ 1982'	gas
5367'	Ismay	+ 1392'	gas
5427'	Lower Ismay	+ 1332'	gas
5525'	Desert Creek	+ 1234'	gas
5667'	Akah	+ 1092'	gas/water
5824'	Barker Creek	+ 935'	gas
5951'	Pinkerton Trail	+ 808'	gas
6154'	Molas	+ 605'	
6218'	Mississippi	+ 541'	
6373'	Mississippi Dolomite	+ 386'	
6482'	Ouray	+ 277'	
6522'	TD	+ 237'	

NOTE: Well is intended to TD at 6204' (50' +/- into the Molas).  
If the Paradox appears to be unproductive, the well may  
be deepened to TD at 6522' for use as a SWD in the Mississippi  
Dolomite.

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	24.0 ppf	K-55	STC
Production:	6522	5 1/2	15.5 ppf	K-55	STC

Surface Cementing:

360 sks (414 cf), Class 'G' cement with 2% CaCl<sub>2</sub> and 1/4 #/sk celloflake. Weight - 15.6 ppg, yield 1.14 cf/sk. Slurry volume calculated at 100% excess over annular volume.

Production Cementing:

First Stage

TD to 3500' (stage collar @ 3500'). Lead with 240 sks Class 'G' 65/35 poz + 6% gel + .25 #/sk celloflake (12.7 ppg, 1.85 cf/sk), tailed with 100 sks Class 'G' + 2% CaCl<sub>2</sub> (15.6 ppg, 1.15 cf/sk). Total of 559 cf.

Second Stage

3500' to surface. Lead with 270 sks Class 'G' 65/35 poz + 6% gel + .25 #/sk celloflake (12.7 ppg, 1.85 cf/sk), tailed with 100 sks Class 'G' + 2% CaCl<sub>2</sub> (15.6 ppg, 1.15 cf/sk). Total of 615 cf.

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

5. BLOWOUT PREVENTER (See attached schematics)

As abnormal pressure is not anticipated, a 2000 psi BOP system will be sufficient for the drilling of this well. However, due to availability constraints, a 3000 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 by the operator.

6. PROPOSED MUD PROGRAM

Surface to 3500'

Fresh water, gel/lime, & native solids. Weight 8.3 - 8.7 ppg, with gel/lime sweeps as necessary to clean hole.

3500' to Total Depth

Low solids - non dispersed polymer system. Weight 8.6 - 8.8 ppg. Sweep with gel/lime sweeps as hole conditions dictate. Fluid loss to be maintained at 15 cc or less. Fluid loss to be further reduced to 10 cc or less prior to drilling the Paradox formation.

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 TD to 4000'.

Drill stem testing will be as per well site geologist's recommendations, based on shows. A mud logging unit will be utilized during drilling operations from 4000' to TD.

9. ABNORMAL PRESSURES/GAS

Abnormal pressure is not anticipated. Monitoring of gas and hydrocarbon shows will be by wellsite mud logging unit. H<sub>2</sub>S 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 2-1-90.

DETAILED DRILLING PROGRAM

DATE: November 8, 1989

WELL NAME: Black Rock WELL NO: 10

LOCATION: 1720' FNL, <sup>660</sup>640' FEL  
Section 22, Township 40N, Range 29E  
Apache COUNTY, Arizona

ELEVATION: 6745' GR / 6759' KB

TOTAL DEPTH: 6522'

PROJECTED HORIZON: Paradox at 4777'; Mississippian at  
6373'

DRILLING, CASING AND CEMENTING PROGRAM

1. Move in and rig up rotary tools. Notify BLM of intent to run surface casing and time of spud.
2. Drill mouse hole and rat hole. Mix mud prior to spudding well.
3. Drill 12 1/4" hole to 500'. Use fresh water gel/lime spud mud for drilling surface hole. Well bore inclination is not to exceed 1 degree at 500'. Deviation surveys will be run at 250' and at casing point.
4. Run 8 5/8", 24 ppg, K55, STC casing to TD. Cement with 360 sks (414 cf) of Class 'G' + 2% CaCl<sub>2</sub> + 1/4 #/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. Pressure test BOP to 2000 psi for 30 minutes. Pressure test manifold and all related equipment to 2000 psi. Pressure test casing to 1500 psi for 30 min.
7. Drill out of surface casing with 7 7/8" bit. Drill 7 7/8" hole to TD. Deviation surveys are to be taken every 500' or on bit trip whichever occurs first. Maximum allowable deviation will be 5 degrees at TD with the maximum allowable rate of change to be 1 degree/100'.

8. Run open hole logs and evaluate. Drill-stem test as per wellsite geologist's recommendation.

9. If well is determined to be commercial, run 5 1/2", 15.50 ppf, K55 casing to TD. Set stage cementing collar at +/- 3500'. Cement in two stages as follows: Cement first stage with 240 sks of Class 'G' 65/35 poz + 6% gel + .25 #/sk celloflake followed by 100 sks of Class 'G' + 2% CaCl<sub>2</sub> (559 cf). Circulate a minimum of 6 hrs between stages. Cement second stage with 270 sks of Class 'G' 65/35 poz + 6% gel + .25 #/sk celloflake followed by 100 sks of Class 'G' + 2 % CaCl<sub>2</sub> (615 cf).

\*Note: exact slurry volumes will be calculated to circulate cement to surface, from caliper log to be run prior to cementing. Special adjustments may be made to the slurry if significant amounts of salt are drilled.

10. Nipple down BOPE. Set 5 1/2" casing slips, 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, BLM, and Navajo Tribal stipulations.

Black Rock #10  
1720' FNL X 640' FEL  
SEC 22, T40N, R29E  
Apache County, Arizona

GENERAL COMPLETION PROCEDURE

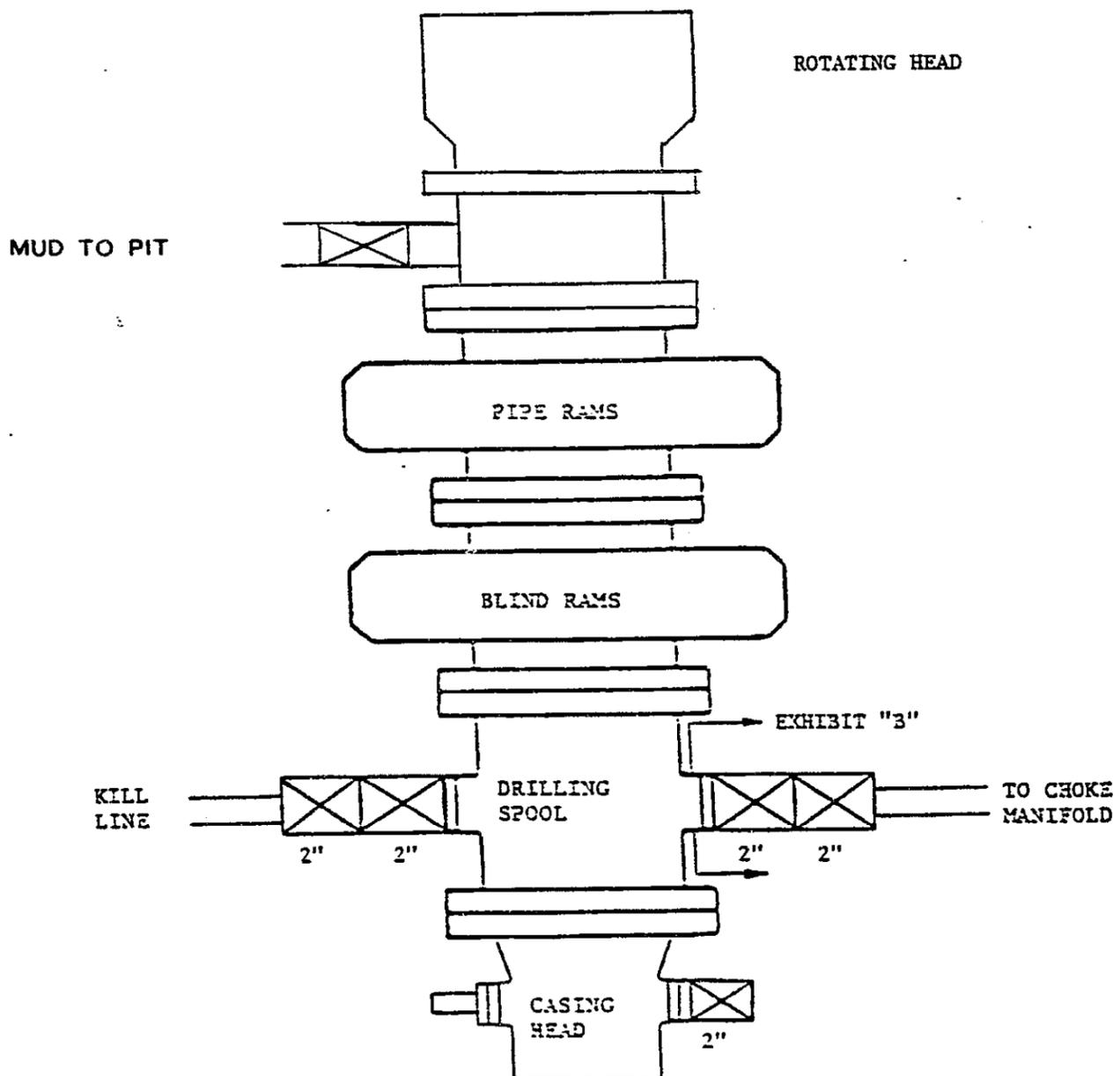
If the well is determined to be productive in the Paradox formation, move in completion rig. Perforate, acidize, and test each productive porosity zone. Completion work will commence after Sundry Notice approval is recieved. Detailed procedures to follow.

PLUGGING AND ABANDONMENT

If the well is determined not to be productive, the well bore will be plugged as per BLM instructions.

CHUSKA ENERGY COMPANY  
BLACK ROCK #10

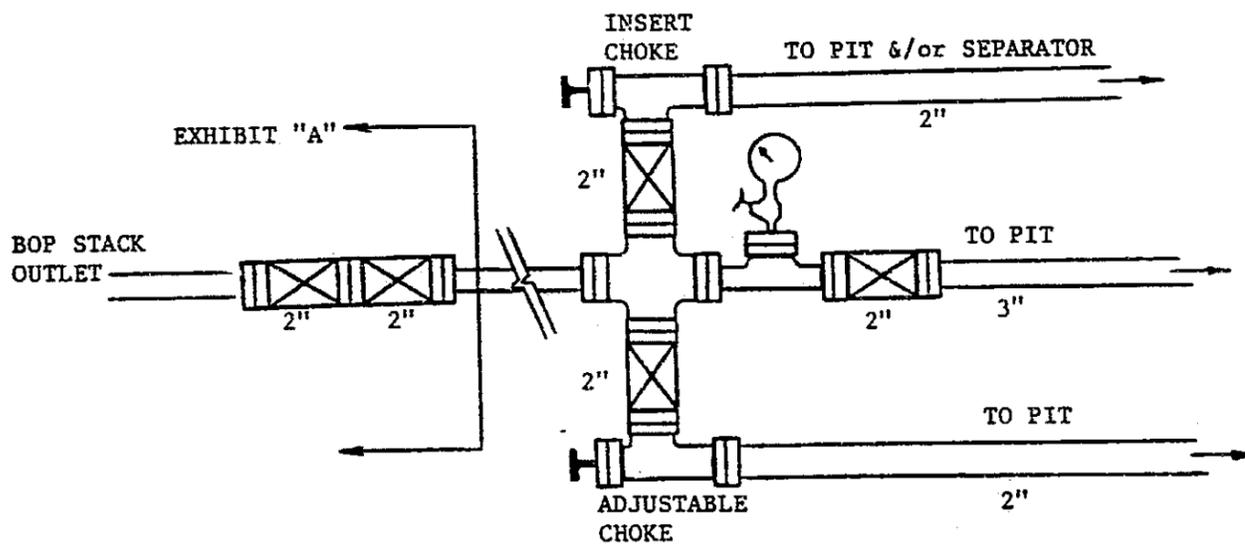
EXHIBIT A  
BLOWOUT PREVENTER



CHUSKA ENERGY COMPANY  
BLACK ROCK #10

EXHIBIT "B"

CHOKE MANIFOLD



Black Rock #10

SURFACE USE PLAN

1. EXISTING ROADS

Shown on the attached topographic map, are the existing roads in the immediate area. Outlined are the roads to be used from Road 5034, 6 miles west of Teec Nos Pos Arizona (exhibit 1). Existing roads will be maintained while operations are in progress.

2. PLANNED ACCESS ROAD (SHOWN IN RED)

The access road as shown on the Topo map will exit from road 5034. The road will be flat bladed, constructed 14' in width, and maintained as necessary to prevent excessive damage to the existing terrain. The road will be upgraded if commercial production is established. An estimated 0.50 miles of new road will be constructed to the location pad.

3. LOCATION OF EXISTING WELLS & TANK BATTERIES

The existing wells and facilities are shown on the topographic map.

4. LOCATION OF EXISTING AND PROPOSED FACILITIES

Production facilities will be utilized at the central compressor and production station located in section 8. Glycol pumps and a compressor may be required at a later date and will be installed on the location pad.

5. LOCATION & TYPE OF WATER SUPPLY

Water will be acquired from a private source. The water will be hauled from a flowing well permitted to Hay Hot Oil, Inc., permitted under Water Right 09-1419, A60809.

6. SOURCE OF CONSTRUCTION MATERIALS

The need for additional construction materials is not anticipated. In the event additional materials are required, they will be acquired 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 trash 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 with an approved 7 mil liner for containing drilling fluids. The pit will 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, backfilled, and restored to the natural terrain.

8. PORTABLE TOILET

Chemical portable toilet facilities will be provided on location during drilling and completion operations.

9. ANCILLARY FACILITIES

No camps or air strips are planned for this well.

10. WELL SITE LAYOUT

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

11. PLANS FOR RESTORATION OF THE SURFACE

Top soil removed from the pad, will be stored at the well site. 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/disposal process. The pit will then be covered and the topsoil will be returned to the disturbed area. The terrain will be returned to its original condition as much as possible. Rehabilitation seeding will be in accordance with the APD/BLM/ BIA stipulations.

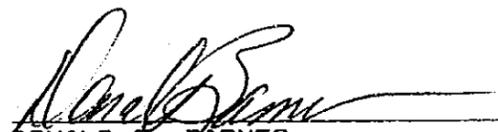
12. The location is laid out on an east/west trend requiring 7' of cut on the southwest corner and 11' of fill on the northeast corner. The reserve pit will be built on terrain containing sparse native vegetation. No residents are in the immediate area.

13. OPERATORS REPRESENTATIVE

CHUSKA ENERGY COMPANY  
315 NORTH BREHREND AVENUE  
FARMINGTON, NEW MEXICO 87401  
DONALD S. BARNES

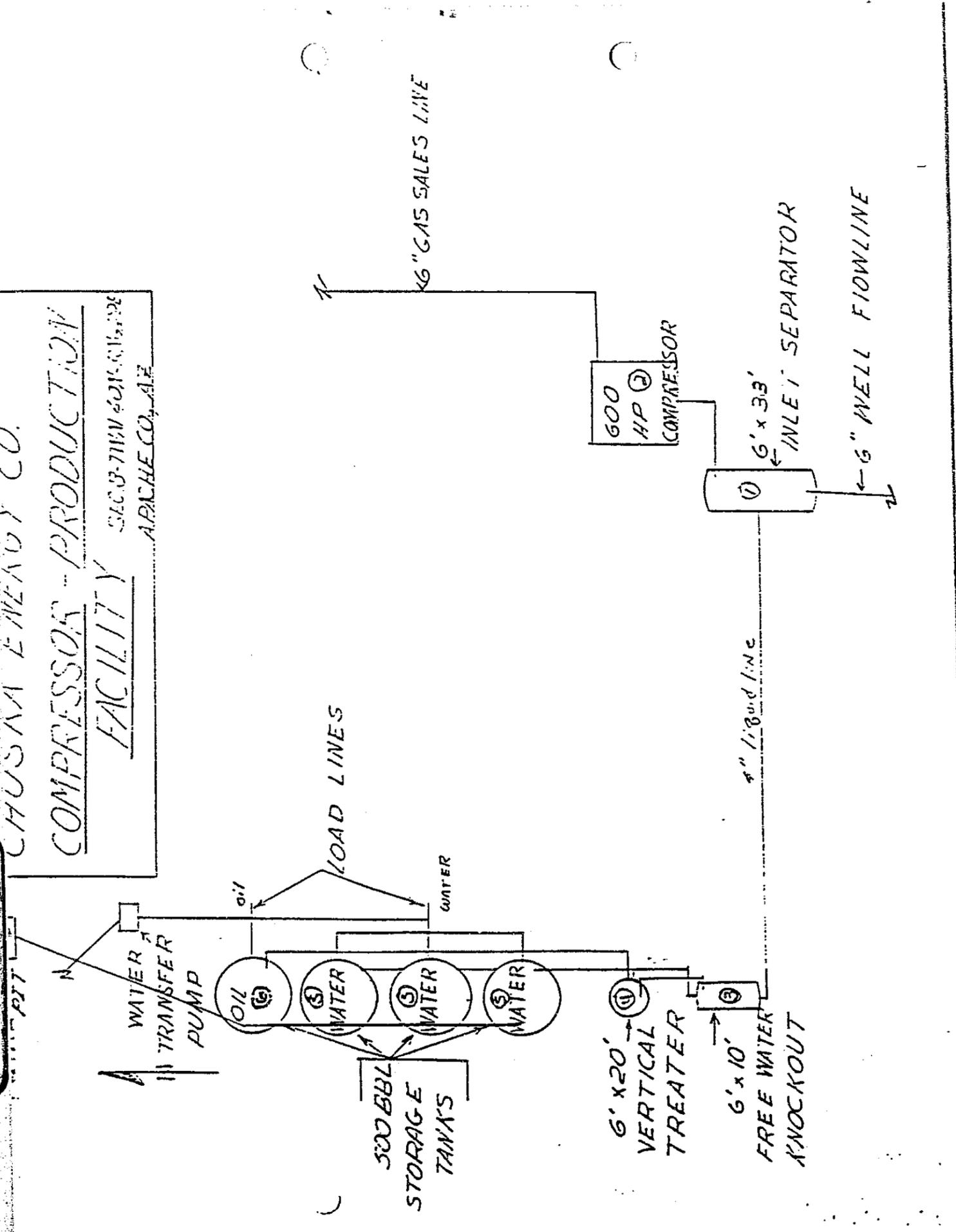
14. CERTIFICATION

I hereby certify that either I, or persons under my direct supervision have inspected the proposed drillsite 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.

  
DONALD S. BARNES  
Operations Manager



CHUSMA ENERGY CO.  
COMPRESSOR - PRODUCTION  
FACILITY SEC. 3-T11M 4015-0115, 1992  
APACHE CO., AZ



46" GAS SALES LINE

600 HP COMPRESSOR

6' x 33' INLET SEPARATOR  
6" WELL FLOWLINE

4" LIQUID LINE

6' x 20' VERTICAL TREATER

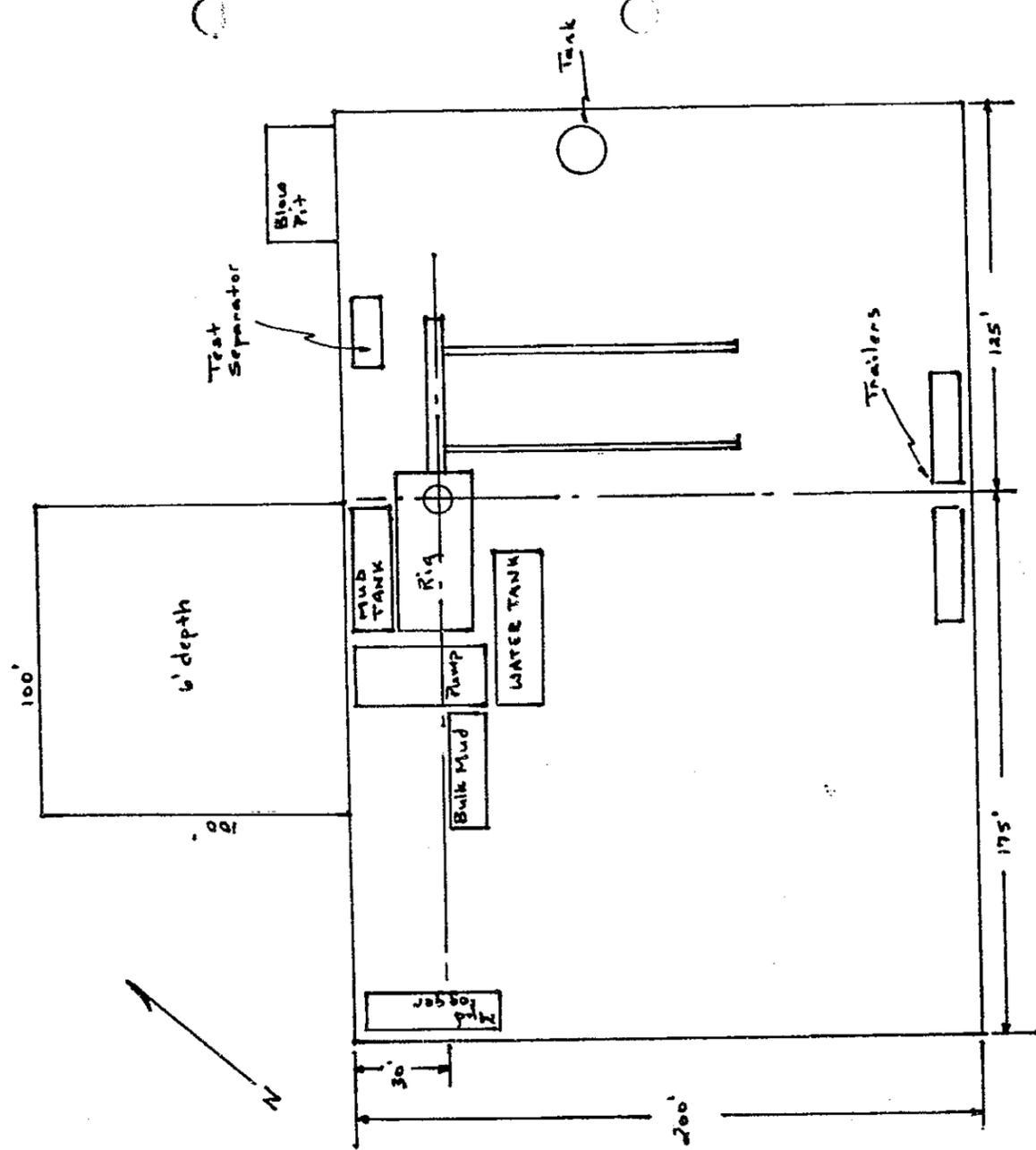
6' x 10' FREE WATER KNOCKOUT

LOAD LINES

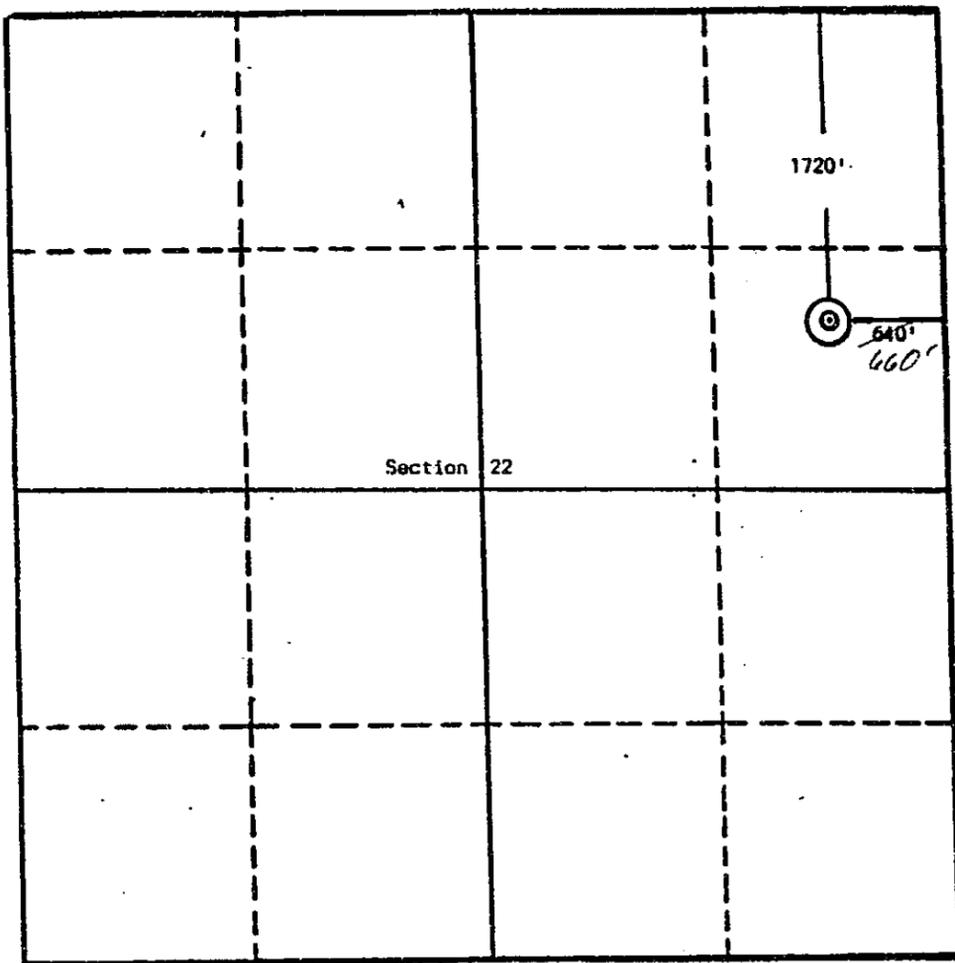
WATER TRANSFER PUMP

300 BBL STORAGE TANKS

CHUSKA ENERGY COMPANY  
BLACK ROCK #10



Company uska Energy Company  
Well Name & No. Black Rock #10  
Location 1720' F/NL 640' F/EL  
Sec. 22, T. 40 N., R. 29 E., G. & S. R. M., County Apache, Arizona  
Ground Elevation 6745

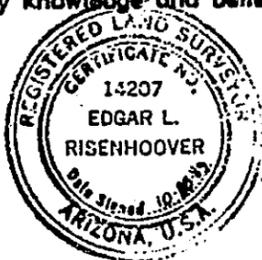


Scale, 1 inch = 1,000 feet

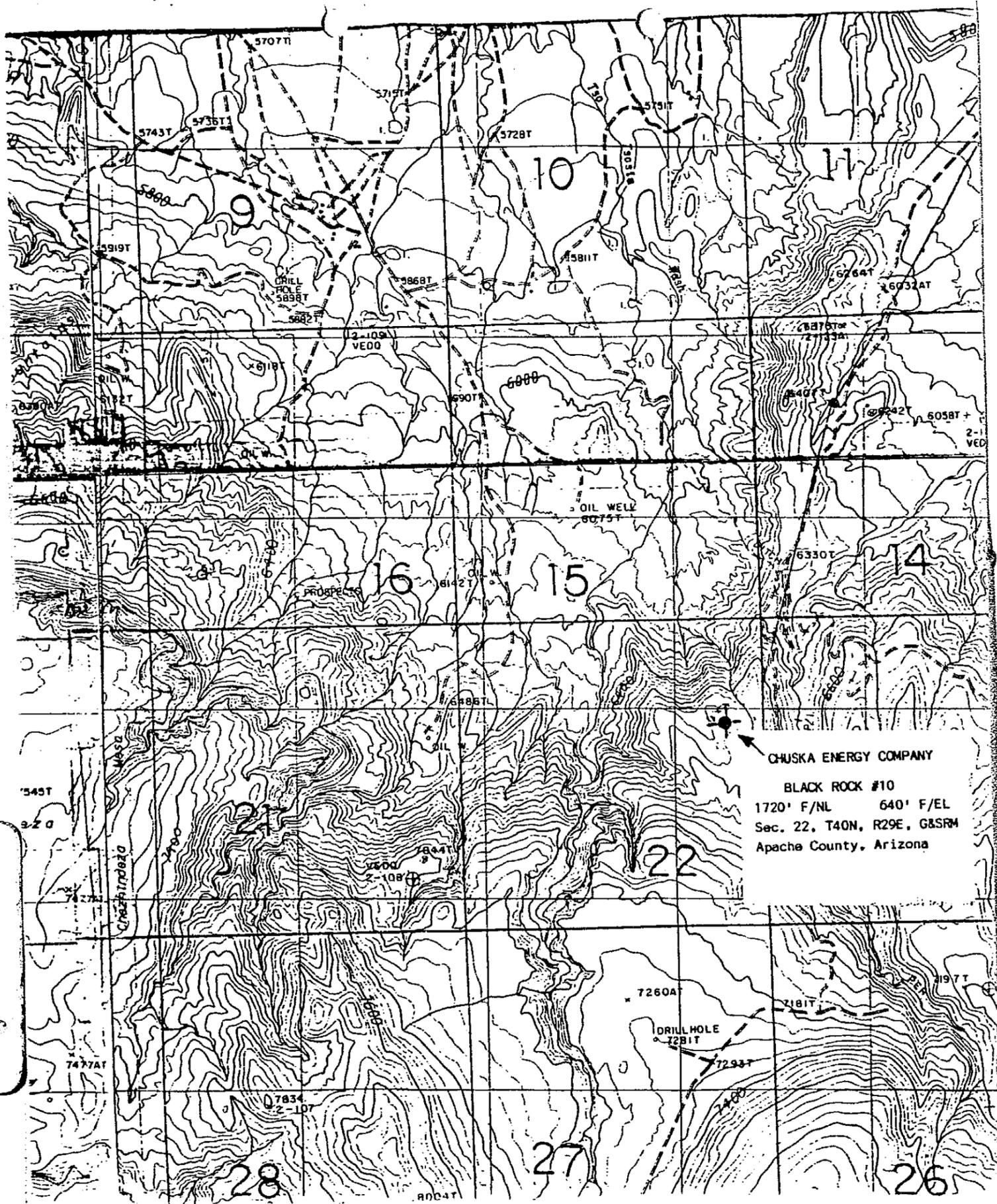
Surveyed October 18, 1989

This is to certify that the above plat was prepared from field notes of actual surveys made by me or under my supervision and that the same are true and correct to the best of my knowledge and belief.

Seal:



Edgar L. Risenhoover  
Edgar L. Risenhoover  
Professional Land Surveyor  
Arizona Reg. No. 14207



CHUSKA ENERGY COMPANY  
BLACK ROCK #10  
1720' F/NL    640' F/EL  
Sec. 22, T40N, R29E, G&SRM  
Apache County, Arizona

Operator CHUSKA ENERGY COMPANY

Bond Company VALLEY NATIONAL BANK - ARIZONA Amount \$25,000

Bond No. C.D. #2578904 Date Approved 12/01/89

Permits covered by this bond:

- 559
- 581
- 610 (P & A 11-21-95)
- 615 (P & A 5/10/91)
- 868
- 869 expired
- 870 (J & A 5/90)
- 871
- 872 expired
- 873 (P & A 8/4/93)
- 874 expired
- 875
- 
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## HARKEN SOUTHWEST CORPORATION

(formerly Chuska Energy Company)

January 28, 1994

We are pleased to announce that Chuska Energy Company has changed its name to Harken Southwest Corporation. This is in line with the February, 1993 merger with Harken Exploration Company.

Harken Southwest Corporation will continue to be located at 3315 Bloomfield Highway, Farmington, New Mexico 87401. Our telephone number will remain (505) 326-5525.

Please reflect this name change on all future correspondence.

Thank you for your assistance in this matter. We look forward to working with you as Harken Southwest Corporation.

Sincerely,

BARRY A. WIELAND  
Operations Manager





Fife Symington  
Governor

State of Arizona  
**Arizona Geological Survey**

845 North Park Avenue, #100  
Tucson, Arizona 85719  
(602) 882-4795



Larry D. Fellows  
Director and State Geologist

August 26, 1993

*Permit 873*

Mr. Barry Wieland, Operations Manager  
Chuska Energy Company  
3315 Bloomfield Highway  
Farmington, New Mexico 87401

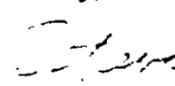
Dear Barry:

In response to my telephone call this morning, I have enclosed a couple of our *well completion report* forms for you to report the completion of Black Rock 10 and 12. Please file a copy of any wireline logs run on these two well with the completion reports.

I have also enclosed a couple of *multipoint and one point back pressure test for gas well*. Please file this form with your completion report for the number 12 well.

In addition, a *plugging record* form is enclosed. Please file this form with your completion report for the number 10 well.

Sincerely,

  
Steven L. Rauzi  
Oil & Gas Program Administrator

Enclosures



## CHUSKA ENERGY COMPANY

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

August 3, 1993

AZ OIL & GAS  
CONSERVATION COMMISSION

State of Arizona  
Arizona Geological Survey  
845 North Park, #100  
Tucson, AZ 85719

AUG 6 1993

Attn: Mr. Steven L. Rauzi  
Oil and Gas Program Administrator

*file 873*

RE: Plug & Abandonment Procedure Approval  
Black Rock #10

Dear Steve,

Per our telephone conversation at 1:30 pm, August 3, 1993, please accept this letter as confirmation to Chuska Energy Company's decision to plug and abandon the Black Rock #10 well. As we discussed and you verbally approved our plugging procedures are as follows:

Plug #1	5970-5830	50 sx
Plug #2	5560-5400	70 sx
Plug #3	4850-4750	50 sx
Plug #4	1300-1200	50 sx
Plug #5	558-458 (surface/csg shoe)	40 sx
Plug #6	60-surface	25 sx

TOTAL 275 sx

If you should have any further questions, please don't hesitate to contact me at (505) 326-5525. Your assistance in this matter has been greatly appreciated.

Sincerely,

*Barry A. Wieland*  
Barry A. Wieland  
Operations Manager



Fife Symington  
Governor

State of Arizona  
**Arizona Geological Survey**

845 North Park Avenue, #100  
Tucson, Arizona 85719  
(602) 882-4795



Larry D. Fellows  
Director and State Geologist

August 4, 1993

Mr. Barry Weiland, Operations Manager  
Chuska Energy Company  
3315 Bloomfield Highway  
Farmington, New Mexico 87401

Re: Renew permits 875 (Black Rock 12), 873 (Black Rock 10), 874 (Black Rock 11), and  
870 (Black Rock 7).

Dear Mr. Weiland:

I have enclosed a receipt for your application fee to renew the referenced permits. These renewals are good for 90 days. Please keep in mind that you may request extensions on any of the permits should you decide to further evaluate production before you continue with your drilling program at the Black Rock Field.

Let me know if I may be of additional assistance.

Sincerely,

Steven L. Rauzi  
Oil & Gas Program Administrator

Enclosure

ARIZONA GEOLOGICAL SURVEY  
845 NORTH PARK AVE., #100  
TUCSON, ARIZONA 85719

**RECEIPT**

Date 8-4 1993 No. 3046

Received From Chuspa Energy Company

Address Farmington, NM

Amount One hundred dollars and <sup>no</sup>/<sub>100</sub> Dollars \$100<sup>00</sup>

For Renew permits BR # 7, 10, 11 & 12

ACCOUNT		HOW PAID	
AMT. OF ACCOUNT		CASH	
AMT. PAID		CHECK	<u>100<sup>00</sup></u>
BALANCE DUE		MONEY ORDER	

By Laurette Colton

**MEMORANDUM TO FILE**

**DATE:** August 3, 1993

**FROM:** Steven L. Rauzi *SCR*  
Oil and Gas Program Administrator

**SUBJECT:** Plug and abandonment of Black Rock 10, State Permit 873

Mr. Barry Weiland advised on this date that they would set a cement plug across the Ismay zone, a 100-foot cement plug across the shoe of the 8 5/8 inch casing (extending 50 feet above and below the shoe), and a 50-foot cement plug at the surface. Zones between the cement plugs would be filled with drilling mud. I approved this plugging plan.

*file 873*

### Chuska Cases Paradox Prospect in Northeastern Arizona

**C**HUSKA ENERGY Co has set production casing at a stepout from a Pennsylvanian/Mississippian pool on Navajo Indian lands 10 miles west of Teec Nos Pos in northeastern Apache County, Arizona.

The 12 (formerly 10) Black Rock, nw sw 7-40n-29e, was set up as a 5266-ft test of Paradox zones and drilled by Aztec Well Servicing's Rig #301. No other details are yet available.

The prospect is within three quarters of a mile west-northwest of a pair of abandoned producers on the northwestern flank of Black Rock field. The closer of the two, the 34 Navajo-7 in sw se 7-40n-29e, produced 5,990 bbls of 34° oil with small amounts of gas and water from Mississippian at 5562-67 ft before being abandoned.

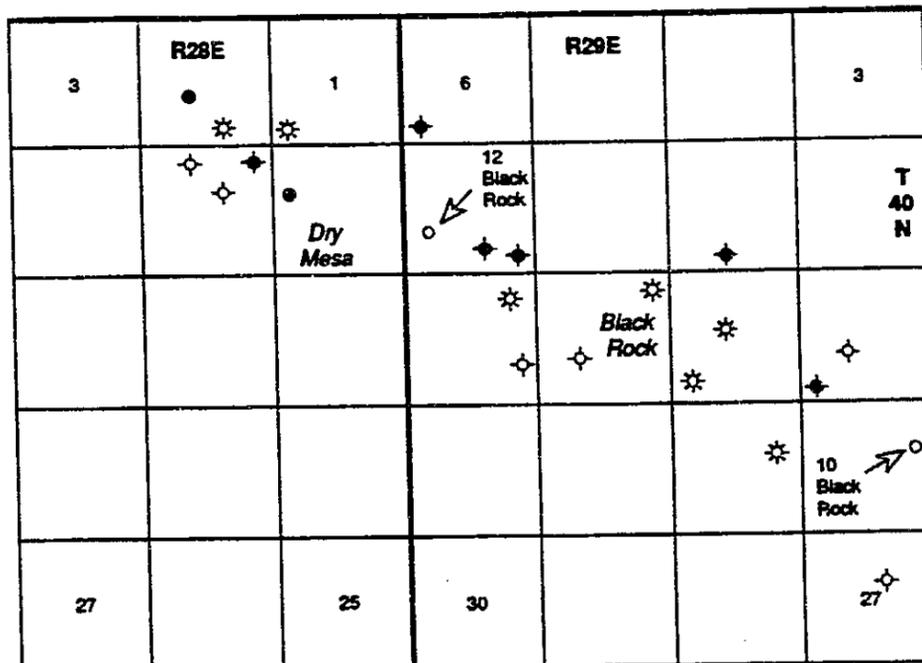
Log tops at the 34 Navajo-7, measured from a Kelly bushing elevation of 5981 ft, include Hermosa at 4045 ft, Ismay 4585, Desert Creek 4751 and Mississippian at 5432 ft.

Chuska has moved Aztec's Rig #301 four miles to the southeast

where it is drilling below 2065 ft toward an objective of 6522 ft at the 10 Black Rock in se ne 22-40n-29e. This venture is about a mile east of the southeasternmost producer in Black Rock field, the 1 Black Rock in se ne 21-40n-29e. Log tops at the latter well, originally completed by Cities Service Oil as the 1 Monsanto-Na-

depth is 6111 ft. The 1 Black Rock originally was completed in Barker Creek at 5533-77 ft commingled with Pinkerton Trail perforated at 5653-60 ft.

Since going on line in 1973, Black Rock field has produced about 4.55 billion cu ft of gas with 21,000 bbls of oil and 270,000 bbls of water.



vajo-A, include Hermosa at 4442 ft, Ismay 5036, Akah 5322, Barker Creek 5478, Pinkerton Trail 5592 and Mississippian at 5870 ft. Total

Four active field wells in March produced a combined daily average of 897,000 cu ft of gas, two bbls of oil and one bbl of water.



Fife Symington  
Governor

State of Arizona  
**Arizona Geological Survey**

845 North Park Avenue, #100  
Tucson, Arizona 85719  
(602) 882-4795



Larry D. Fellows  
Director and State Geologist

July 13, 1993

Mr. Barry Weiland, Operations Manager  
Chuska Energy Company  
3315 Bloomfield Highway  
Farmington, New Mexico 87401

Re: Black Rock Field, Apache County, Arizona. Wells #12, #10, #11, and #7

Dear Mr. Weiland:

I am sorry that you were unable to reach me before commencing work on the referenced wells. The phone numbers provided with the State Permits are no longer valid because administrative and staff support for the Oil and Gas Conservation Commission is now handled by the Geological Survey here in Tucson; my office number is listed on the letterhead and my home phone number is 602-881-4850. I have enclosed a couple of my cards showing these phone numbers.

I would appreciate your sending me any updates to the drilling prognoses in our files and a sundry summarizing drilling activity. The prognosis we have for the #12 is dated 4-26-90; for the #10, 11-8-89; for the #11, 11-14-89; and for the #7, 10-6-89. Our records show that #7 was junked and abandoned in May 1990. Are you going to drill the #7 from the original location? If so, what is the new location? I also note that Black Rock #13 and #14 are spotted on the map submitted with the #12 prognosis. Do you plan on permitting these two wells soon?

As we discussed on the phone, I will need at least 48 hours notice to allow me enough time to drive to Farmington to witness the circulation of cement on the surface casing and the pressure test of the BOPE and surface casing. Using rig pumps is satisfactory with the Commission.

Finally, I have enclosed a few completion reports for your use upon completion of the wells. Any logs run on the wells can be submitted with the completion report. I do look forward to a successful completion on each of these wells and I hope they lead to additional drilling in Arizona. Do not hesitate to contact me if I can provide any information or additional service.

Sincerely,

Steven L. Rauzi  
Oil & Gas Program Administrator

Enclosures

### Weld County Colorado Wildcat Reaches Total Depth

**D**ENVER-BASED BERENERGY Corp has reached total depth at a proposed 6400-ft test of D sand in the Denver Julesburg Basin nearly 13 miles north-northeast of New Raymer, northeastern Colorado.

The 1-6 Motis, sw nw 6-9n-57w, northeastern Weld County, was drilled by New Orbit Drilling's Rig #5 in a non-producing township about three miles northeast of the inactive Nay Ranch field, which produced oil from Niobrara. It's six miles north-northeast of Lilli field and six miles southeast of Terrace field, both D sand pools (PI 6-8-93). No details are immediately available.

### CAOF at San Juan Basin Gas Producer Tops 20 MMCF/D

**G**AS FLOWED at the rate of 3,093,000 cu ft per day, with 18 bbls of condensate daily, at a Blanco field development test completed by Meridian Oil Inca mile northwest of Cedar Hill, northwestern New Mexico.

Meridian tested the northeastern San Juan County well, the 1R Scott in nw ne 29-32n-10w, on a 48/64-inch choke through perforations in Mesaverde between 4447 and 5651 ft. Flowing tubing pressure was 250 psi; flowing casing pressure was 439 psi.

The well's absolute open flow rate was calculated at 20,718,000 cu ft of gas per day.

Log tops at the new producer include Kirtland at 1204 ft, Fruitland 2496, Pictured Cliffs 2885, Chacra 3626, Mesaverde 4434, Menefee 4825 and Point Lookout at 5158 ft. Kelly bushing elevation is 6088 ft.

Four miles to the southeast, Meridian at last report was testing Mesaverde at a 6220-ft Blanco field prospect, the 26A San Juan 32-9 Unit in nw nw 1-31n-10w.

(Rigs, continued from Page 1)

was up five from a week ago, to seven; a four-rig gain brought the Kansas count to 31; the Oklahoma count rose by three, to 106; two-rig gains were reported in California (29) and Ohio (11); and the Alaska (10) and Pennsylvania (4) counts both improved by one.

The Alabama (5) and New Mexico (43) counts both were down four from the week before, while one-rig declines were noted in Virginia (2) and West Virginia (13).

Through the first 26 weeks of the year, the U.S. rig count averaged 653.5 on a week-to-week basis, a little more than three percent better than the mid-year 1992 average of 633.8.

*Called Barry Weiland 7-13-93 - # 12 is drilled + will be moving onto # 10 probably Thursday night. SLR*

### Chuska Drilling Stepout from Northeastern Arizona Field

**C**HUSKA ENERGY Co, with Aztec Well Servicing's Rig #301 under contract, has spudded a projected 6522-ft Pennsylvanian/Mississippian test on Navajo Indian lands seven miles west-southwest of Teec Nos Pos in northeastern Arizona.

The 10 Black Rock, se ne 22-40n-29e, northeastern Apache County, is about a mile east of the southeasternmost producer in Black Rock field, the 1 Black Rock in se ne 21-40n-29e (originally completed by Cities Service Oil as the 1 Monsanto-Navajo-A).

Since its discovery in 1973, Black Rock field has produced more than 4.55 billion cu ft of gas, 21,000 bbls of liquids and about 270,000 bbls of water. Production in March averaged 897,000 cu ft of gas, two bbls of oil and one bbl of water daily from four Chuska-operated wells. The field has produced from the Ismay, Desert Creek, Barker Creek and Pinkerton Trail members of the Hermosa (Pennsylvanian) Group, as well as deeper Mississippian zones.

November 9, 1992

Mr. Larry Chambers  
Chuska Energy Company  
3315 Bloomfield Highway  
Farmington, New Mexico 87401

Re: Chuska Energy Company's 10 Black Rock well, State Permit #873

Dear Mr. Chambers:

Enclosed is filing fee receipt # for renewal of the referenced Permit to Drill. This renewal is based on drilling the well as outlined in your approved drilling prognosis for this well dated November 8, 1989.

Please notify this office at least 48 hours before you

- 1) Commence drilling operations;
- 2) Run and cement surface casing; and
- 3) Nipple up and test the BOPE prior to drilling out of the surface casing.

I look forward to a successful completion of this well.

Sincerely,

Steven L. Rauzi  
Oil & Gas Program Administrator

Enclosures

## Meridian Adds High-Volume Producer to Northern San Juan Basin Paradox Pool

**G**AS FLOWED at the rate of 7,887,000 cu ft per day at a Barker Creek field development test drilled by Meridian Oil Inc seven miles southwest of Red Mesa in southwestern Colorado, just north of the New Mexico state line.

The southwestern La Plata County well, the 16 Ute in ne se irregular section 22-32n-13.5w, was tested on a 48/64-inch choke through perforations in the Ismay member of Paradox between 8502 and 8634 ft. Flowing tubing pressure was 618 psi; flowing casing pres-

sure was 978 psi.

Log tops at the 16 Ute, measured from a 6951-ft kelly bushing elevation, include Dakota at 3028 ft, Ismay 8502, Desert Creek 8694 and Barker Creek at 8994 ft. Total depth is 9441 ft.

The new producer is half a mile northeast of a Barker Creek (lower Paradox) well completed earlier this year by

Meridian on the New Mexico side of Barker Creek field. That well, the 4 Ute in se sw 10-32n-14w, San Juan County, initially flowed 11,380,000 cu ft of gas per day upon recompletion in Ismay from 8654 to 8702 ft (PI 7-1-92). Calculated absolute open flow at the latter well was estimated at 18,580,000 cu ft per day.

## Drilling Continues at Two Deep Overthrust Belt Wildcats

**C**CHEVRON USA Inc is drilling below 13,382 ft at an exploratory test on the Overthrust Belt about five miles southeast of Evanston in Uinta County, Wyoming.

The 1-14 Chevron-Federal, sw nw 14-14n-120w, is projected as a 17,000-ft test of Nugget and Twin Creek and is being drilled one and a half miles southeast of Glasscock Hollow field, a Nugget gas/condensate pool (PI 12-12-91). Grace Drilling's Rig #93 is on site.

On the northeastern Utah salient of the Overthrust Belt, Exxon Corp is drilling below 10,912 ft toward an objective of 16,000 ft in Nugget at a wildcat 20 miles south-southwest of Evanston.

Exxon's 1 UPRCD, nw nw 17-3n-8e, western Summit County, is within three miles of production in two fields—the giant Anschutz Ranch East field to the north and Aagard Ranch field to the southeast (PI 6-29-92). Exxon is using Norton Drilling's Rig #9.

## Chuska Schedules Stepout from Arizona's Black Rock Field

**C**HUSKA ENERGY Co will evaluate Pennsylvanian and Mississippian horizons to a depth of 6522 ft at an exploratory test staked on Navajo Indian lands seven miles west-southwest of Teec Nos Pos, northeastern Arizona.

The 10 Black Rock, se ne 22-40n-29e, Apache County, is a mile east of the southeasternmost producer in Black Rock field, the 1 Black Rock in se ne 21-40n-29e. Log tops at that 6111-ft well, originally completed by Cities Service Oil as the 1 Monsanto-Navajo-A, include Hermosa at 4442 ft, Ismay 5036, Akah 5322, Barker Creek 5478, Pinkerton Trail 5592 and Mississippian at 5870 ft.

Cumulative production from Black Rock field through June totaled almost 4.3 billion cu ft of gas, 20,600 bbls of liquids and about 270,000 bbls of water. Production for the month averaged 1,135,000 cu ft of gas, one bbl of oil and nine bbls of water daily from four Chuska-operated wells. The field has produced from the Ismay, Desert Creek, Barker Creek and Pinkerton Trail members of the Hermosa (Pennsylvanian) group, as well as Mississippian zones.

(Silo, continued from Page 1)

60° by 8610 ft (measured depth) in a N44.9° direction to casing point. After intermediate casing is set, the company will continue building angle at 10°/100 ft to 88.5° by 8900 ft (measured depth). UPRC then will maintain the angle and direction through the Niobrara "B" bench to its projected total depth.

The new venture is in the section west of UPRC's 1H McConnaughey 41-27, 27-16n-65w, which was completed earlier this year flowing 318 bbls of oil, 125,000 cu ft of gas and 26 bbls of water daily from a horizontal Niobrara inter-

val to extend production in Silo field to the northwest. Flow at the latter well was restricted to minimize damage to the formation and fractures. It has produced more than 60,000 bbls of oil and continues to produce oil at a rate in excess of 300 bbls daily. The well cut through two faults and encountered a significant fracture system in Niobrara. Three horizontal laterals were drilled—all in the same direction—in order to compensate for the two faults and to keep the well in the "sweet zone" of the Niobrara "B" bench. (PI 9-23-92).



## CHUSKA ENERGY COMPANY

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

AZ OIL & GAS  
CONSERVATION COMMISSION

JUL 9 1991

5 July, 1991

Arizona Oil and Gas Conservation Commission  
5150 North 16th Street, Suite B141  
Phoenix, Arizona 85016

Attn: Daniel J. Brennan

873

Ref: Sundry Notices: Extensions to APD  
Black Rock #9, #10 and #11

Gentlemen

Attached for your examination and approval are the originals and two copies of the subject Sundry Notices.

Please advise if you require additional information concerning these submissions.

Sincerely,

*Larry G. Sessions*  
Larry G. Sessions  
Operations Manager

LGS/csw  
File: C:\WP51\BLAKROCK\91011EX2.CVR

encl.



**Oil and Gas Conservation Commission**  
STATE OF ARIZONA

5150 N. 16th STREET, SUITE B-141  
PHOENIX, ARIZONA 85016  
PHONE: (602) 255-5161

February 1, 1991

Larry G. Sessions  
Operations Manager  
Chuska Energy Company  
3315 Bloomfield Highway  
Farmington, NM 87401

RE: Permit Extension for Black Rock 9, 10, and 11  
Permit Numbers 872, 873, and 874, respectively

Dear Mr. Sessions:

We understand your need to further evaluate the Black Rock Field and its reserves. We therefore approve your request to extend the permits for the referenced wells.

These extensions are good through August 1, 1991.

Sincerely,

Steven L. Rauzi  
Oil & Gas Specialist



## CHUSKA ENERGY COMPANY

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

P.O. BOX 780 • FARMINGTON, NEW MEXICO 87499

AZ OIL & GAS  
CONSERVATION COMMISSION

JAN 31 1991

January 31, 1991

Arizona Oil & Gas Conservation Commission  
5150 North 16th Street, Suite B141  
Phoenix, Arizona 85016

ATTENTION: Daniel J. Brennan

RE: Sundry Notices: Extensions to APD  
Black Rock #9, #10, and #11

Dear Mr. Brennan:

Attached for your examination and approval are the originals and two copies of the subject Sundry Notices.

Please advise if you require additional information concerning these submissions.

Sincerely,

*Larry G. Sessions*  
LARRY G. SESSIONS  
Operations Manager

LGS\csw  
File:LGS\BRK91011



**Oil and Gas Conservation Commission**

STATE OF ARIZONA

5150 N. 16th STREET, SUITE B-141  
PHOENIX, ARIZONA 85016  
PHONE: (602) 255-5161

July 24, 1990

Mr. H. Merle Myers  
Vice President of Production  
Chuska Energy Company  
315 North Behrend  
Farmington, NM 87401

Dear Merle:

In response to your request, we are extending the life of Chuska's permit No. 873 to drill Black Rock #10, Sec 22, T40N-R28E, Apache County, Arizona for six months.

We sincerely hope this will give you adequate time to evaluate existing production in the area and to justify drilling the well.

*l.e. 1-30-91*

Very truly yours,

Daniel J. Brennan  
Executive Director



## CHUSKA ENERGY COMPANY

315 N. BEHREND • FARMINGTON, NEW MEXICO 87401 • PHONE: (505) 326-5525

July 10, 1990

PN 873

Mr. Daniel Brennan  
Oil and Gas Conservation Commission  
State of Arizona  
5150 North 16th Street, Suite 141  
Phoenix, Arizona 85016

RE: Permit to Drill Black Rock #10, Section 22, T40N, R29E, Apache  
County, Arizona

Dear Dan:

As you are aware, the state of Arizona issued Chuska a permit to drill the captioned well on January 30, 1990. It has become apparent to Chuska that more time is required to evaluate our existing production in the Black Rock Field before we can recommend the drilling of this well. Therefore, we request that the Commission grant a six-month extension to this drilling permit for our evaluation purposes. Please advise us if this is possible.

Your timely attention to this matter will be appreciated.

Sincerely,

*H. Merle Myers*

H. MERLE MYERS  
Vice President of Production

HMM:bnp  
File:TRM\PERDRBR.10



## CHUSKA ENERGY COMPANY

315 N. BEHREND • FARMINGTON, NEW MEXICO 87401 • PHONE: (505) 326-5525

AZ OIL & GAS  
CONSERVATION COMMISSION

JAN 31 1990

January 19, 1990

Arizona Oil & Gas Commission  
3110 North 19th Avenue, Suite 190  
Phoenix, Arizona 85015

Ref: Sundry Notice: Black Rock #10 - Move Location

Gentlemen

attached you will find the original and six copies of the subject Sundry Notice. We are moving the well location, from 640' FEL to 660' FEL, in order to comply with State well spacing regulations.

Sincerely

Donald S. Barnes  
Operations Manager

DSB/csw  
File: C:\WP\CSWH\BR10LOCN.SUN

*Mailed 1-19-90  
BRC*



## CHUSKA ENERGY COMPANY

315 N. BEHREND • FARMINGTON, NEW MEXICO 87401 • PHONE: (505) 326-5525

AZ OIL & GAS  
CONSERVATION COMMISSION

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Sincerely

Donald S. Barnes  
Operations Manager

DSB/csw  
File: C:\WP\CSWH\BR10LOCN.SUN



## CHUSKA ENERGY COMPANY

315 N. BEHREND • FARMINGTON, NEW MEXICO 87401 • PHONE: (505) 326-5525

January 18, 1990

Arizona State Oil & Gas Commission  
5150 N. 16th Street, Suite B-141  
Phoenix, Arizona 85016

ATTENTION: Mr. Daniel J. Brennan

Dear Dan,

This letter is in response to our telephone conversation yesterday. I apologize for any inconvenience caused by Chuska or its personnel. I hope that this letter will assist you in making the necessary approvals on our behalf.

You are entirely correct to point out the fact that Hydrogen Sulfide will be present, as this has historically been one of our major concerns. We have trained all of Chuska's field personnel, as well as rig personnel on wells where H<sub>2</sub>S is suspected. Each member of the crew and all of Chuska's operations personnel have been certified in Hydrogen Sulfide operations. We do have monitoring equipment, provided both by the mud logging unit as well as by safety personnel on location during DSTs or other evaluation operations during which gas could occur to surface. A safety company is notified prior to spud and is on call throughout the drilling of the well if needed.

The location of the three wells in question are explained as follows:

### BLACK ROCK #3 #872

This well is planned as a replacement well for the Black Rock #2. The well is located within the mapped section of the Black Rock structure. The surface location is located in a very tight area in which the surrounding topography is very erratic. In addition to the topography, the area is heavy with archaeological artifacts to such a degree that the road to location had to be rerouted to miss three sites alone. The surveyors and field personnel who carried out the staking worked closely with the archaeological field personnel to find the best suitable location for all concerned. To move the location as you suggest would cause excessive damage to the surrounding area, create a greater economic burden, and from a geological point of view, would not provide us with the preferred drilling location.

Chuska controls all of the surrounding acreage in the section and will not be draining other operators' production.

For the reasons stated above, Chuska requests the approval of this permit as submitted.

As you are aware, we are planning to drill more wells in the area, with two more located in section 17, on the upper bench of the Carrizo mountain range.

BLACK ROCK #10 *TW 873*

The location of this well will be moved 20' and it will be staked 660' FEL. The well is planned to outline the limits of the Black Rock Field and is located on top of a mountain where access roads are already in place.

The location was selected in order to minimize disturbance to the surrounding area. We will restake this location and submit a revised staking plat as soon as possible.

BLACK ROCK #11 *#874*

The site required for a legal location falls within two forks of an existing wash. The location was moved as close as possible to the existing well bore in order to minimize surface damage. We have reviewed the suggestion to move the surface location. The reason we permitted the well is that we feel that we have sufficient established reserves in the area to justify another drainage point. However, surface pipe historically causes enough problems to deter any attempted re-entry of the old well bore. Considering both the elements and the environment, and in the interests of being a prudent operator, Chuska has elected to drill a new well rather than try to re-enter the existing well bore.

I hope that this letter will help in clarifying Chuska's position and reasons for selection of the three well locations under discussion. As I stated, we are in a time box due to the probability of shutting down for the wild life problems. Please advise if you require additional information. I would appreciate any consideration that you can give as time is of the greatest importance.

Sincerely



Donald S. Barnes  
Operations Manager

CHUSKA ENERGY COMPANY



**Oil and Gas Conservation Commission**

STATE OF ARIZONA

5150 N. 16th STREET, SUITE B-141  
PHOENIX, ARIZONA 85016  
PHONE: (602) 255-5161

January 4, 1990

Mr. Thomas R. McCarthy  
Chuska Energy Company  
315 N. Behrend  
Farmington, NM 87401

Dear Tom:

To confirm our telephone conversation of yesterday, we are holding up approval of the Applications for Permit to Drill for your Black Rock wells Nos. 9, 10, and 11. You have asked for administrative approval of irregular location for these three wells, but have not furnished enough justification for us to proceed.

As we examined the materials relevant to these applications we have made the following notes:

No. 9: Requested location is 2390 FWL and 1530 FNL of Section 15. On the topographic map there appears to be at least as good a potential location approximately 1200 feet WNW, at approximately 1200' FWL and 1000' FNL of the section.

No. 10 is spotted 640 FEL of Section 22. It appears that it could be moved 20' further west to a legal location, or as an alternative about 800' west.

No. 11 is apparently an attempt to use the location of the abandoned Universal Resources 1-15 Navajo. Requested location is 565 FSL and 815' FWL. Again the topographic map appears to show a suitable legal location to the north or northeast.

In addition, each of the applications includes a location plat which shows the pit on the north side of the location, while topographic profiles with a different plat show the pits on the south side of the location. Please clear up this inconsistency.

Also each well plan contains a statement that H<sub>2</sub>S is not anticipated. This, of course, is contrary to your experience. Please modify the well plans to provide for H<sub>2</sub>S monitoring equipment from 4000' to total depth.

We are looking forward to hearing from you. Best of luck on your next well.

Very truly yours,

Daniel J. Brennan  
Executive Director



## CHUSKA ENERGY COMPANY

315 N. BEHREND • FARMINGTON, NEW MEXICO 87401 • PHONE: (505) 326-5525

AZ OIL & GAS  
CONSERVATION COMMISSION

DEC 21 1989

December 18, 1989

Mr. Daniel J. Brennan  
Arizona Oil and Gas Conservation Commission  
5150 North 16th Street, Suite B141  
Phoenix, Arizona 85016

RE: Black Rock Nos. 5, 6, 7, 8, 9, 10, and 11  
Drilling Permit Applications

Dear Dan:

Pursuant to our conversation on December 15th, I am enclosing a check for \$175.00 for the Applications to Drill the subject wells.

Please advise me if there is additional information or requirements for the approval of the subject APD's.

Sincerely,

Thomas R. McCarthy  
Reservoir Engineer

TRM:bnp  
Enclosure  
File:TRM\DRPERBR



## CHUSKA ENERGY COMPANY

315 N. BEHREND • FARMINGTON, NEW MEXICO 87401 • PHONE: (505) 326-5525

November 28, 1989

Mr. Dan Brennan  
Arizona Oil & Gas Conservation Commission  
5150 N. 16th Street  
Suite B-141  
Phoenix, Arizona 85016

Re: Black Rock No. 10  
Non-standard Location  
Apache County, Arizona

Dear Mr. Brennan:

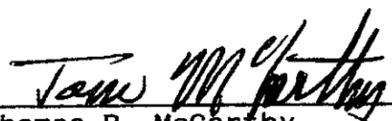
Please refer to our application for Permit to Drill the Black Rock No. 10 well located 1720' FNL & 640' FEL, Section 22, T40N, R29E. As you are aware, this location does not comply with the Black Rock field rules which stipulate that a well be no closer than 660 feet to the 160 acre unit line.

Administrative approval for a non-standard location at the Black Rock No. 10 is requested due to topographic considerations. The well is staked at a location in the quarter section which will have the least amount of environmental impact. The staked location is the only one in the quarter section which allows for the reasonable construction of a well pad, road, and pipeline.

Chuska Energy Company owns all acreage contiguous to this 160 acre drilling unit.

Please advise if administrative approval can be granted.

Sincerely,

  
Thomas R. McCarthy,  
Senior Reservoir Engineer

TRM/bc

file:trm\lnonstan.B10



## CHUSKA ENERGY COMPANY

315 N. BEHREND • FARMINGTON, NEW MEXICO 87401 • PHONE: (505) 326-5525

January 18, 1990

Arizona State Oil & Gas Commission  
5150 N. 16th Street, Suite B-141  
Phoenix, Arizona 85016

ATTENTION: Mr. Daniel J. Brennan

Dear Dan,

This letter is in response to our telephone conversation yesterday. I apologize for any inconvenience caused by Chuska or its personnel. I hope that this letter will assist you in making the necessary approvals on our behalf.

You are entirely correct to point out the fact that Hydrogen Sulfide will be present, as this has historically been one of our major concerns. We have trained all of Chuska's field personnel, as well as rig personnel on wells where H<sub>2</sub>S is suspected. Each member of the crew and all of Chuska's operations personnel have been certified in Hydrogen Sulfide operations. We do have monitoring equipment, provided both by the mud logging unit as well as by safety personnel on location during DSTs or other evaluation operations during which gas could occur to surface. A safety company is notified prior to spud and is on call throughout the drilling of the well if needed.

The location of the three wells in question are explained as follows:

BLACK ROCK #9 #872

This well is planned as a replacement well for the Black Rock #2. The well is located within the mapped section of the Black Rock structure. The surface location is located in a very tight area in which the surrounding topography is very erratic. In addition to the topography, the area is heavy with archaeological artifacts to such a degree that the road to location had to be rerouted to miss three sites alone. The surveyors and field personnel who carried out the staking worked closely with the archaeological field personnel to find the best suitable location for all concerned. To move the location as you suggest would cause excessive damage to the surrounding area, create a greater economic burden, and from a geological point of view, would not provide us with the preferred drilling location.

Chuska controls all of the surrounding acreage in the section and will not be draining other operators' production.

For the reasons stated above, Chuska requests the approval of this permit as submitted.

As you are aware, we are planning to drill more wells in the area, with two more located in section 17, on the upper bench of the Carrizo mountain range.

BLACK ROCK #10 PA 875

The location of this well will be moved 20' and it will be staked 660' FEL. The well is planned to outline the limits of the Black Rock Field and is located on top of a mountain where access roads are already in place.

The location was selected in order to minimize disturbance to the surrounding area. We will restake this location and submit a revised staking plat as soon as possible.

BLACK ROCK #11 #874

The site required for a legal location falls within two forks of an existing wash. The location was moved as close as possible to the existing well bore in order to minimize surface damage. We have reviewed the suggestion to move the surface location. The reason we permitted the well is that we feel that we have sufficient established reserves in the area to justify another drainage point. However, surface pipe historically causes enough problems to deter any attempted re-entry of the old well bore. Considering both the elements and the environment, and in the interests of being a prudent operator, Chuska has elected to drill a new well rather than try to re-enter the existing well bore.

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Sincerely



Donald S. Barnes  
Operations Manager

CHUSKA ENERGY COMPANY