District I
PO Box 1980, Hobbs, NM 88241-1980
District II
PO Drawer DD, Artesia, NM 88211-0719
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Form C-101
Revised February 10, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 6 Copies
Fee Lease - 5 Copies

☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

[1] Operator Name and Address	[2] OGRID Number
Bonneville Fuels Corporation 1660 Lincoln/ Suite 2200 Denver, Colorado 80264 Phone : (303) 376-2564 Fax: (303) 863-1558 **Notify N.M.O.C.C. in sufficient time to witness cementing the 8 5/8" casing**	2678
	[3] API Number 30 - 015-30525

[4] Property Code	[5] Property Name	[6] Well No.
23964	Soapberry Draw State Com. ~~I~~ 7	#1

[7] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
"N"	7	21S.	26E.		720'	South	2,479'	West	Eddy

[8] Proposed Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

[9] Proposed Pool 1	[10] Proposed Pool 2
Morrow: Avalon 70920 or	Strawn: Avalon

Post ID-1 12-18-98 API + Loc

[11] Work Type Code	[12] Well Type Code	[13] Cable/Rotary	[14] Lease Type Code	[15] Ground Level Elevation
"N"	"G"	"R"	"S"	3,277'
[16] Multiple	**[17] Proposed Depth**	**[18] Formation**	**[19] Contractor**	**[20] Spud Date**
No	10,950'	Barnett Shale Fm	Norton Drlg. Co Rig #8	1/1/99 or2/15/99

[21] Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
26"	20"	94# H-40 PE	40' optional	5 Yds.Redi Mix	Surface
17½"	13 3/8"	54.5# J-55 STC	750'/350	380sx.+250sxTail	Surface
~~1~~ 12¼"	8 5/8"	32# J-55 LTC	2100'	300sx.+250sxTail	Surface
7-7/8"	5 1/2"	17#k-55/N-80/L-80	10,950'	1st Stg. 540sx	1800'
		LTC	DV@7,500'	2nd Stg. 610sx+150sx.Tail	

[22] Describe the proposed program. If this application is to DEEPEN or PLUG BACK give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary. Please see Attached:

1. 8 Point Drilling Plan w/ BOP Schematics/Procedures & H2S Safety Plan & Schematic.
2. Form C-102 w/ Location Verification Map and Vicinity Map.
3. Copy of NSL-4130.
4. Copy of Request to Amend NSL-4130 for Topographic/Safety/Geologic reasons.
5. Copy of State Highway Dept. Access Request onto US 285.
6. Copy of FULLY EXECUTED Surface Damage Settlement with Grazing Lessee (State Land).
7. Copy of Site Layout Diagram, Cut-and-Fill Diagram & Construction Plan.
8. Copy of proposed Pipeline ROW on adjacent Fee Surface (on-lease).

[23] I hereby certify that the information given above is true and complete to the best of my knowledge and belief.	OIL CONSERVATION DIVISION
Signature: [signature]	Approved by: [signature] BGX
Printed name: R. A. Schwering, P. E.	Title: District Supervisor
Title: Operations Manager SE NM	Approval Date: 12-7-98 Expiration Date: 12-7-99
Date: 12/4/98 Phone: (303) 376-2564	Conditions of Approval: Attached ☑ Refer to pg. 10

NSL: 4130 -

C-101 Instructions

Measurements and dimensions are to be in feet/inches. Well locations will refer to the New Mexico Principal Meridian.

IF THIS IS AN AMENDED REPORT CHECK THE BOX LABLED "AMENDED REPORT" AT THE TOP OF THIS DOCUMENT.

1 Operator's OGRID number. If you do not have one it will be assigned and filled in by the District office.

2 Operator's name and address

3 API number of this well. If this is a new drill the OCD will assign the number and fill this in.

4 Property code. If this is a new property the OCD will assign the number and fill it in.

5 Property name that used to be called "well name"

6 The number of this well on the property.

7 The surveyed location of this well New Mexico Principal Meridian NOTE: If the United States government survey designates a Lot Number for this location use that number in the "UL or lot no." box. Otherwise use the OCD Unit Letter.

8 The proposed bottom hole location of this well at TD

9 and 10 The proposed pool(s) to which this well is beeing drilled.

11 Work type code from the following table:
- N New well
- E Re-entry
- D Drill deeper
- P Plugback
- A Add a zone

12 Well type code from the following table:
- O Single oil completion
- G Single gas completion
- M Mutiple completion
- I Injection well
- S SWD well
- W Water supply well
- C Carbon dioxide well

13 Cable or rotary drilling code
- C Propose to cable tool drill
- R Propose to rotary drill

14 Lease type code from the following table:
- F Federal
- S State
- P Private
- N Navajo
- J Jicarilla
- U Ute
- I Other Indian tribe

15 Ground level elevation above sea level

16 Intend to mutiple complete? Yes or No

17 Proposed total depth of this well

18 Geologic formation at TD

19 Name of the intended drilling company if known.

20 Anticipated spud date.

21 Proposed hole size ID inches, proposed casing OD inches, casing weight in pounds per foot, setting depth of the casing or depth and top of liner, proposed cementing volume, and estimated top of cement

22 Brief description of the proposed drilling program and BOP program. Attach additional sheets if necessary.

23 The signature, printed name, and title of the person authorized to make this report. The date this report was signed and the telephone number to call for questions about this report.

EIGHT POINT DRILLING PLAN

Attached to Application For Permit To Drill: Form C-101:
Operator: Bonneville Fuels Corporation

Scapberry Draw State Com. 7-#1
720' FSL & 2479' FWL
Section 7, T.21S., R.26E. N.M.P.M.
Eddy County, New Mexico

1. **ESTIMATED TOPS: IMPORTANT GEOLOGIC MARKERS**
ALL DEPTHS REF. Est. KB @ 17' above GL:

Permian:	
Seven Rivers Fm.:	Surface
Capitan Reef Fm.:	310'
Goat Seep Reef Fm.:	1995'
Cherry Canyon Fm.:	2140'
Bone Springs Ls. Fm.:	3940'
3rd Bone Springs Fm.:	7605'
Wolfcamp Group:	7970'
Wolfcamp Detrital:	8260'
Pennsylvanian:	
Cisco Fm.:	8860'
Canyon Fm.:	9020'
Strawn Fm.:	9380'
Atoka Fm.:	9650'
Morrow Fm.:	10330'
Morrow 'B' Fm.:	10400'
Barnett Fm.:	10730'

2. **ESTIMATED DEPTHS OF ANTICIPATED WATER, OIL, GAS OR MINERALS:**

Fresh Water: Capitan Reef: 310' to 650'.

Oil and Gas Targets:	Cisco Fm.:	8860'.
	Canyon Fm.:	9020'.
	Strawn Fm.:	9380'.
	Morrow 'B' Fm.:	10400'.
Possible Gas and Oil:	Cherry Canyon Fm.:	2140'.
	Brushy Canyon Fm.:	3450'.
	Bone Springs Ls. Fm.:	3940'.
	3rd Bone Springs Fm.:	7605'.
	Wolfcamp Fm.:	7970'.
	Atoka Fm.:	9650'.

Projected Maximum Total Depth @ 10,950' in the Barnett Shale Fm.

3. MINIMUM SPECS FOR PRESSURE CONTROL:

a. A diagram of the Blowout Preventer Stack and Wellhead Equipment is presented in Exhibit #1. The wellhead equipment for the intermediate hole (11" @ 2,100') is altered only by the replacement of the 13-5/8" 3000 psi WP x 11" 5000 psi WP cross-over spool with the 13-5/8" 3000 psi WP x 11" 5000 psi WP casing spool during the drilling of the 7-7/8" production hole. A diagram of the Choke Manifold is presented in Exhibit #2. All BOP and Choke Manifold equipment will be rated to 5000 psi Working Pressure (WP) minimum (min).

b. Surface Casing Wellhead Equipment will consist of:

i. A 13-5/8" slip-on weld-on 3000 psi WP(min) braiden head w/ 2: 2" SE outlets with 2:2" SE XXHVY nipples and 2:2" SE FO 3000 psi WP(min) ball valves. This braiden head will be welded-on & nippled-up after the 750'+ of 13-3/8" Surface Casing is set and cemented.

ii. A 13-5/8" 3000 psi WP(min) x 11" 5000 psi WP(min)cross-over spool will be installed upon the braiden head. This spool will be removed AFTER the 8-5/8" Protective Casing has been set and cemented.

iii. All wellhead and BOP equipment and the 13-3/8" Surface Casing will be pressure tested to 1000 psi with the rig pumps prior to drilling out.

c. Protective Casing Wellhead Equipment will consist of:

i. A 13-5/8" slip-on weld-on 3000 psi WP(min) braiden head w/ 2: 2" SE outlets with 2: 2" SE XXHVY Nipples and 2: 2" SE FO 3000 psi WP(min) ball valves.

ii. A 13-5/8" 3000 psi WP x 11" 5000 psi WP casing spool w/ 2: 2" FO FE outlets w/ 2: 2" FO FE 5000 psi WP gate valves. This casing spool will be nippled-up after the 2,100' of 8-5/8" protective casing is set and cemented. The secondary seal will be tested to 1000 psi.

iii. All wellhead and BOP equipment and the 8-5/8" Protective Casing will be pressure tested to 2500 psi prior to drilling-out the 7-7/8" Production Hole.

iv. A wear ring will be installed in the 13-5/8" 3000 psi WP x 11" 5000 psi WP casing spool for the drilling of the 7-7/8" production hole, and removed PRIOR TO running the 5-1/2" Production Casing.

3. MINIMUM SPECS FOR PRESSURE CONTROL (CONTINUED):

d. The BOP Equipment, nipped-up on the 13-5/8" 3000 psi x 11" 5000 psi cross-over spool for the 11" intermediate hole, and the 13-5/8" 3000 psi x 11" 5000 psi casing spools for the 7-7/8" production hole, will be as follows:

i. An 11" Nom. 5000 psi WP(min) mud cross with a 2" 5000 psi WP(min)FO FE kill-side inlet and a 4" 5000 psi WP(min) FO FE choke-side outlet.

ii. An 11" Nom. 5000 psi WP(min) double gate (or dual equivalent single gate) hydraulic ram-type preventer with Pipe Rams over Blind Rams. Pipe rams are anticipated to be 4-1/2".

iii. An 11" Nom. 5000 psi WP(min) hydraulic annular preventer.

iv. An 11" Nom. rotating head with fill-up and flow-line connections. The flow-line will tie-in to a gas buster.

v. A choke manifold consisting of an inside 4" 5000 psi WP(min) FO FE master gate valve run in the CLOSED position (at the wellhead) with an outside mounted 4" 5000 psi WP(min) Hydraulic FO FE Master Valve run in the OPEN position, a 4"(min nom) x 5,000 psi WP(min) FE welded choke line between the master valves and the choke manifold - consisting of a 2 x 4" and 2 x 2" 5000 psi WP[min] FE cross with a 4" 5000 psi WP(min) FO FE gate valve immediately upstream, and a 4" 5000 psi WP(min) ball/gate valve immediately downstream, of the manifold cross. Between the downstream 4" 5000 psi WP(min) FO FE ball/gate valve and the manifold cross will be a 4" x 4" x 2" 5000 psi WP(min) FO FE tee with a 2" 5000 psi WP(min) FO FE ball/gate valve with a 2" 5000 psi WP(min) Gauge Assembly for monitoring pressure at the choke manifold. The choke manifold will have 2: 2" 5000 psi FO FE ball/gate valves between the manifold cross and the 2: 2" FO FE 5000 psi(min) adjustable chokes (a total of 4: 2" 5000 psi ball/gate valves - 2 on each wing). One of these adjustable chokes will be hydraulically operated. Provision will be made to tie in DST surface lines to the choke manifold thru an optional 2" 5000 psi WP(min) FO FE tee above the 2" 5000 psi WP(min) ball/gate valve down stream of the choke manifold cross. The 4" blooey line downstream of the choke manifold will be staked down and targeted in the flare pit. The 2: 2" lines downstream of the chokes will be appropriately staked down to return mud to the mud tanks via a gas buster, fluids to a test tank, and gas to a flare pit.

3. MINIMUM SPECS FOR PRESSURE CONTROL (CONTINUED):

d. The BOP Equipment (Continued):

vi. A gas buster will be installed to de-gas fluid returns during drilling/well control operations and to return de-gassed fluid to the mud pits and to convey gas to a flare pit.

vii. A 5000 psi WP(min) FO safety valve and a 5000 psi WP(min) dart valve, with drill pipe threads and subs to meet other drill string threads, will be kept on the drill floor after the 13-3/8" surface casing is set. A 5000 psi(min) WP Upper Kelly valve and a 5000 psi WP(min) Lower Kelly valve will be kept on the kelly throughout drilling operations. All valves, and the wrenches to operate these valves, will be maintained on the floor in good order throughout drilling operations.

viii. An accumulator with sufficient capacity to operate the BOPE against a 3500 psi well pressure(min) will be used to operate the BOP system. It shall contain the fluid capacity calculated to open and close the Hydraulic inside master valve, pipe rams, and annular preventer 1 time each, and then to close the pipe rams and annular preventer 1 additional time(min) and retain accumulator pressure at 200 psig over the pre-charge pressure **OR THE MINIMUM CAPACITY OF WORKING FLUID REQUIRED BY ON-SHORE ORDER NO. 2** - whichever is the lesser. The accumulator working pressure shall be 1,500 psi(minimum) with a pre-charge pressure between 900 - 1,200 psi(minimum). A Nitrogen bottle system shall provide independent (reserve) power to operate the system in the event rig motors must be shut down.

ix. The kill-side manifold will consist of 2:2" 5000 psi WP(min) FO FE master valves with an outside 2" 5000 psi(min) FO FE check valve. The inside valve will be kept in the closed position. The outside 2" master valve will be kept in the open position. The kill line will be connected to the stand-pipe by a 2" 5000 psi WP(min) welded or co-flexip type kill line. THE KILL LINE WILL IN NO CASE BE USED FOR THE FILL-UP LINE.

3. MINIMUM SPECS FOR PRESSURE CONTROL (CONTINUED):

e. BOPE Stack Testing Procedures and Operational Test Frequency:
NOTE: ALL pressure tests and operational/function tests and drills will be recorded/described on the IADC tour sheets.

i. Stack Test for the 11" Intermediate Hole:
ALL of the pressure side BOP Equipment specified in Part d. above will be nippled-up on the 13-3/8" surface casing and each component will be hydraulically tested for ten(10) minutes(min) to 1000 psi and five(5) minutes(min) to 300 psi prior to drilling out cement. The 13-3/8" casing will then be tested against the Pipe Rams or Blind Rams to 1,000 psi for thirty(30) minutes(min). After the float collar is drilled out of the intermediate casing, and prior to drilling out the shoe, the intermediate casing will again be pressure tested to 500 psi for ten(10) minutes(min) against the Pipe Rams.

ii. Operational checks while drilling the 11" intermediate hole:
Pipe rams will be operationally checked each 24 hour period, and the Blind rams operationally checked each time that pipe is pulled from the hole. BOP drills will be run and recorded for each tour at least once every seven(7) days.

iii. Stack Test for the 7-7/8" Production Hole:
A test plug will be set and the Pipe rams, Blind rams and all choke manifold lines and valves to the chokes and panic line, all kill side valves and the kill line will be nippled-up on the casing spool and each component will be hydraulically tested for ten(10) minutes(min) to 5000 psi and five(5) minutes(min) to 300 psi. The Upper and Lower Kelly Valves will be hydraulically tested on the kelly for ten(10) minutes(min) each to 5000 psi and for five(5) minutes(min) to 300 psi. The Annular Preventer will be tested to 2500 psi (50% of the 5000 psi(min) rated WP). The test plug will then be removed. The 8-5/8" casing will then be tested against the Pipe Rams or Blind Rams to 2,500 psi for thirty(30) minutes(min). After the float collar is drilled out of the intermediate casing, and prior to drilling out the shoe, the intermediate casing will again be pressure tested to 2,500 psi for ten(10) minutes(min) against the Pipe Rams.

iv. Operational checks while drilling the 7-7/8" Production Hole:
Pipe rams will be checked each day. Blind rams will be checked each time that drill pipe is pulled from the hole. A test plug will be installed and the surface BOP equipment will be pressure tested every 30 operating days after the initial stack pressure test. BOP drills will be run and recorded for each tour at least once every seven(7)days.

3. MINIMUM SPECS FOR PRESSURE CONTROL (CONTINUED):

f. Tripping procedures for well control:

i. For the 11" intermediate hole:
A mud weight of 8.4 PPG to 9.5 PPG is anticipated at a depth of 2100'. The well will be drilled by a triple-derrick rig (92' avg. length per stand). The well will be monitored each 5 stands to insure that the BHA is not swabbing the well in. The well will be filled after each 20 stands of drill pipe, 3 stands of 7" drill collars, and as each stand of large outside diameter drill collars (8" O.D. or larger) are pulled from the hole. Pits will be monitored in order to insure that the well is taking fluid on trips if the well will stand full of fluid. **In the event that the bit is plugged on a trip the well will be filled after each 7 stands of drill pipe are pulled from the well and as each stand of drill collars are pulled from the well. Swabbing will be checked each 3 stands.** NOTE: If returns are lost completely while drilling this interval (AS IS LIKELY) then 25 Bbl. of mud containing at least 10 PPB of Lost Circulation Material will be pumped in the well each 30 minutes(min) on trips out of the hole.

ii. For the 7-7/8" production hole:
The anticipated maximum bottom-hole formation pressures are 4000 psig @ 7,970' (Wolfcamp), 3700 psig @ 8,860' (Cisco), 3800 psig @ 9,020' (Canyon), 3800 psig @ 9,380' (Strawn), 4900 to 5100 psig @ 9,650' (Atoka), and 4700 psig @ 10,400' (Morrow). The anticipated mud weight in this Production Hole Interval is 8.4 to 10.2 PPG. A mud weight sufficient to provide a 200 psig overbalance against the Wolfcamp, Cisco, Canyon, Strawn, Atoka and Morrow Fms. will be maintained in the well. The well will be drilled by a triple-derrick rig (92' avg. length per stand). The well will be monitored each 5 stands on trips to insure that the BHA is not swabbing the well in. The well will be filled after each 14 stands of drill pipe and as each stand of drill collars are pulled from the hole. Pits will be monitored in order to insure that the well is taking fluid on the trip. **In the event that the bit is plugged on a trip the well will be filled after each 5 stands of drill pipe are pulled from the well and as each stand of drill collars are pulled from the well. Swabbing will be checked each 3 stands.**

g. Procedures for running production casing:
Prior to running production casing the hole will be filled. The blind rams will be closed and the well will be monitored for flow while a set of 5-1/2" casing rams will be installed in the BOP to replace the pipe rams. Casing will then be run and cemented. The BOPE will remain nippled up UNTIL the well is cemented.

4. CASING AND CEMENTING PROGRAM:

a. The Propcsed Casing Program:

i. OPTIONAL Conductor Casing: Pre-Set: 40':
20" O.D. 94# H-40 PE Casing: Surface to 40'.

ii. Surface Casing:
13-3/8" O.D. 54.5#/ft. J-55 8rd. ST&C: Surface to 550'.

iii. Intermediate Casing:
8-5/8" O.D. 32#/ft. J-55 8rd. LT&C: Surface to 2,100'.

iv. Production Casing:
5-1/2" O.D. 17#/ft. N-80 8rd. LT&C: T.D. to 8,000'.
5-1/2" O.D. 17#/ft. L-80 8rd. LT&C: 8,000' to 7,000'.
5-1/2" O.D. 17#/ft. K-55 8rd. LT&C: 7,000' to 2,500'.
5-1/2" O.D. 17#/ft. L-80 8rd. LT&C: 2,500' to Surface.

4. CASING AND CEMENTING PROGRAM (CONTINUED):

b. The Proposed Cementing Program:

i. OPTIONAL Conductor Casing: Grouted:
Est. 70 F. @ 8.34 PPG water to 40':
Grout w/ Redi-Mix to Surface: Est. 4 Yds. of Redi-Mix.

ii. Surface Casing: Single Stage:
Est. 75 F. @ 9.5 PPG mud @ 750'.
Circ. Cement to Surface:
Top Jobs if needed to bring cement to Surface.
Lead Slurry: Est. Surface to 550'.
100 % excess over calculated open-hole volume: Est. @
380 sx. Lite (65% Class 'C' + 35% Pozzalan + 6% Gel)
w/ 5#/sx. Gilsonite + 0.25#/sx. cello-flakes
+ 2% CaCl2:
1.99 cu.ft./sx. @ 12.4 PPG.
Tail Slurry: Est. 550' to 750'.
100 % excess over calculated open-hole volume: Est. @
250 sx. Class 'C' w/ 2% CaCl2 + 0.25#/sx. cello-flakes:
Additives: 1.33 cu.ft./sx. @ 14.8 PPG.

iii. Intermediate Casing: Single Stage:
Est. 100 F. @ 8.6 to 12.5 PPG mud @ 2,100'.
Circ. Cement to Surface:
Top jobs if needed to bring cement to Surface.
Lead Slurry: Est. Surface to 1,500'.
100 % excess over calculated open-hole volume: Est. @
300 sx. Interfill 'C' (50% Class 'C'+50% Pozzalan+10%Gel)
w/ 10#/sx. Gilsonite + 0.5#/sx. cello-flakes:
2.47 cu.ft./sx. @ 11.9 PPG.
Tail Slurry: Est. 1,500' to 2,100'.
100 % excess over calculated volume: Est. @
250 sx. Class 'C' w/ 2% CaCl2 + 0.25 #/sx. cellophane:
1.33 cu.ft./sx. @ 14.8 PPG.

4. CASING AND CEMENTING PROGRAM (CONTINUED):

iii. Production Casing: Two Stage: Stage Tool @ 7,500':
ALL VOLUMES TO BE BASED ON CALIPER LOG VOLUMES.

First Stage: Est. 185 F. @ 9.8 to 10.2 PPG mud @ 10,950'.
Plan Circ. Cement to 7,500':
Lead Slurry: Est. 7,800' to 7,500'.
100 % excess over calculated volume: Est. @
60 sx. Super 'H' cement consisting of 70% Class 'H'
+ 17% Pozzalan + 13% Silica Flour
w/ 2#/sx. KCl + Additives.
1.67 cu.ft./sx. @ 13.0 PPG.
Tail Slurry: Est. 10,950' to 7,800':
30 % excess over calculated volume: Est. @
480 sx. Super 'H' cement consisting of 70% Class 'H'
+ 17% Pozzalan + 13% Silica Flour
w/ 2#/sx. KCl + Additives.
1.50 cu.ft./sx. @ 13.5 PPG.

Second Stage: Est. 135 F. @ 9.8 to 10.2 PPG mud @ 7,500':
Lead Slurry: Est. 6,850' to 1,800':
100 % excess over calculated volume: Est. @
610 sx. Interfill 'H' cement consisting of
50% Class 'H' + 50% Pozzalan + 10% Gel
w/ 2#/sx. KCl + 0.5#/sx. cello-flakes + Additives:
2.80 cu.ft./sx. @ 11.5 PPG.
Tail Slurry: Est. 7,500' to 6,850':
100 % excess over calculated volume: Est. @
150 sx. Super 'H' cement consisting of 70% Class 'H'
+ 17% Pozzalan + 13% Silica Flour
w/ 2#/sx. KCl + Additives.
1.50 cu.ft./sx. @ 13.5 PPG.

5. PROPOSED DRILLING FLUIDS:

The reserve pit will be constructed in two segments & will be properly bedded and fully lined with a minimum 12 mil thickness plastic liner to protect the surface environment and fresh water resources.

a. 26" Conductor Hole: Surface to 40': Auger dry.

b. 17-1/2" Surface Hole: Surface to 750': Fresh Water Spud Mud:
Additives: Gel, Lime & LCM as needed to maintain circulation.
POSSIBLE COMPLETE LOSS OF RETURNS FROM 130' TO TOTAL DEPTH OF SURFACE HOLE WITH DRY DRILLING AND LCM SWEEPS TO KEEP HOLE OPEN. Est. 8.6 to 9.0 PPG @ VIS 40 to 120 sec./qt.

c. 11" Intermediate Hole: Circulate brine in reserve pit.
750' to 2,100': Native Mud: Fresh Water & Native Solids:
Additives: Possible Gel sweeps & LCM as needed to maintain circulation and clean the hole, with ~~field crude oil~~ to reduce shale sloughing/swelling.
POSSIBLE COMPLETE LOSS OF RETURNS FROM 1,300' TO TOTAL DEPTH OF INTERMEDIATE HOLE WITH DRY DRILLING AND LCM SWEEPS TO KEEP HOLE OPEN. Est. 8.4 to 10.5 PPG @ VIS 30 to 34 sec./qt.

d. 7-7/8" Production Hole: Refer to Rule 106.B.

i. 2,100' to 7,800': Native Mud: Fresh Water & Native Solids:
Circulate the reserve pit.
Additives: Possible Fresh Water Gels to sweep and clean the hole, field crude oil and/or diesel to reduce mud weight, shale sloughing and differential sticking, and LCM as needed to maintain circulation.
Est. 8.34 to 8.5 PPG @ VIS 28 - 30 sec./qt.

ii. 7,800' to 10,950': Low Solids Slightly Dispersed:
Circulate in Mud Tanks.
Additives: Fresh Water Gel, Salt Water Gel, Drispac, Soda Ash, Ben-Ex, Starch, KCl/NaCl/CaCl2 w/ LCM as necessary to maintain circulation and stabilize shales with soltex and/or diesel if required for differential sticking. Use cut-brine or CaCO3/NaCl for weight control - maintain adequate viscosity to add barite if required for well control.
Est. 8.8 to 9.8 to 10.2 PPG @ PV 5-22 cp., YP 5-21 pphsf., and VIS @ 34 - 45 sec./qt.
MAX. WGT. f/ WELL CONTROL ESTIMATED @ 12.5 PPG.

6. LOGGING, TESTING, AND CORING PROGRAM:

a. The logging program will consist of:

i. DLL/SFL - GR/SP (Induction Logs):
T.D. to Intermediate Casing.
GR to Surface.

ii. LDT/CNL - ML/PE/GR/CAL (Density/Neutron Porosity Logs):
T.D. to Intermediate Casing.

b. No cores are planned.

c. Drill stem tests are planned for the following formations IF SAMPLE/GAS/OIL shows are sufficient to merit testing:

Cherry Canyon Fm.:	2,140'.
Brushy Canyon Fm.:	3,450'.
Bone Springs Ls. Fm.:	3,940'.
3rd Bone Springs Fm.:	7,605'.
Wolfcamp Fm.:	7,970'.
Cisco Fm.:	8,860'.
Canyon Fm.:	9,020'.
Strawn Fm.:	9,380'.
Atoka Fm.:	9,650'.
Morrow 'B' Fm.:	10,400'.

d. Samples will be analyzed on-site by a geologist in order to determine total depth (T.D.) of the well. 10' samples (wet) from the base of the intermediate casing (2,100') to T.D.

7. **ABNORMAL CONDITIONS - PRESSURE - TEMPERATURE - POTENTIAL HAZARDS:**

a. 17-1/2" Surface Hole to 750':
Normal pressures (fresh water gradient or less) and temperatures (70 F. to 75 F.) are anticipated for this hole segment.
A COMPLETE LOSS OF RETURNS IS POSSIBLE FROM 130' TO T.D.

b. 11" Intermediate Hole from 750' to 2,100':
Fresh water gradient (8.34 ppg.: 0.433 psi./ft.) to saturated brine gradient (saturated salt water gradient @ 10.4 ppg.: 0.54 psi./ft.) pressures and normal temperatures (75 F. to 95 F.) are anticipated for this hole segment.
No H2S is anticipated in this hole interval.
A COMPLETE LOSS OF RETURNS IS POSSIBLE FROM 1300' TO T.D.

c. 7-7/8" Production Hole from 2,100' to 10,950':

i. Well/Pressure Control Considerations:

FORMATION TARGET:	DEPTH:	EST. BHP:	GRADIENT:	RATING:
	Feet:	PSIG	PSI/FT	
Cherry Canyon Fm.:	2140'	1550	0.724	Abnormal
Brushy Canyon Fm.:	3450'	1550	0.450	Normal
Bone Springs Ls. Fm.:	3940'	1750	0.442	Normal
3rd Bone Springs Fm.:	7605'	2500	0.323	Subnormal
Wolfcamp Fm.:	7970'	4000	0.502	Abnormal
Cisco Fm.:	8860'	3700	0.418	Normal
Canyon Fm.:	9020'	3800	0.421	Normal
Strawn Fm.:	9380'	3800	0.405	Normal
Atoka Fm.:	9650'	4900	0.508	Abnormal
Morrow Fm.:	10400'	4700	0.452	Normal

KICKS AND WELL CONTROL HAZARDS ARE COMMON IN THIS AREA:
AN ADEQUATE SUPPLY OF BRINE WATER, SALTS, FRESH & SALT-WATER GEL, AND/OR BARITE WILL BE MAINTAINED ON LOCATION AT ALL TIMES, THROUGHOUT DRILLING OPERATIONS BELOW THE SURFACE CASING SHOE @ 750', TO RAISE THE MUD WEIGHT OF THE HOLE & STEEL PIT CIRCULATING SYSTEM A MINIMUM OF 2 PPG.

A PVT system with a gas buster and rotating head will be installed immediately after the surface casing is set (prior to drilling out the surface casing shoe @ 750'), this equipment will permit the safe handling of minor gas volumes at the surface and the monitoring of well flow and trip volumes while the well is being drilled.

ii. Normal temperatures (95 F. to 185 F.) are anticipated for this hole segment.

7. ABNORMAL CONDITIONS - PRESSURE - TEMPERATURE - POTENTIAL HAZARDS: CONTINUED:

c. 7-7/8" Production Hole from 2,100' to 10,950':

H2S is anticipated in the Cherry Canyon Fm. and Bone Springs Fm. intervals from 2,140' to 7,970' if these intervals are productive. An H2S Safety Plan is prepared as Exhibit #3 and will be posted at the well-site. An H2S monitoring system will be rigged-up and functional after the Surface Casing is set at 750', and PRIOR TO DRILLING OUT OF THE SURFACE CASING SHOE. ALL RIG-SITE AND SUPERVISORY PERSONNEL WILL BE TRAINED AND CERTIFIED TO WORK IN AN H2S ENVIRONMENT PRIOR TO ENTRY ONTO THIS JOB SITE.

8. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:

Location construction will be commenced in December after APD approval is received. Upon granting of this APD request, and as soon as the rig completes the Lake Shore Fed. S.C. 10-#3 well and/or the Witt Fed. S.C. 30-#1 well in Sec.10-21S.-26E., this well will be spud and drilled to a projected T.D. @ 11,950' or +100' into the Barnett Shale Fm. Anticipated spud date is January 1, 1999 OR February 15, 1999. Est. 35 drilling days. Est. 10 completion days. Est. 1st production on or after February 15, 1999 OR April 1, 1999.

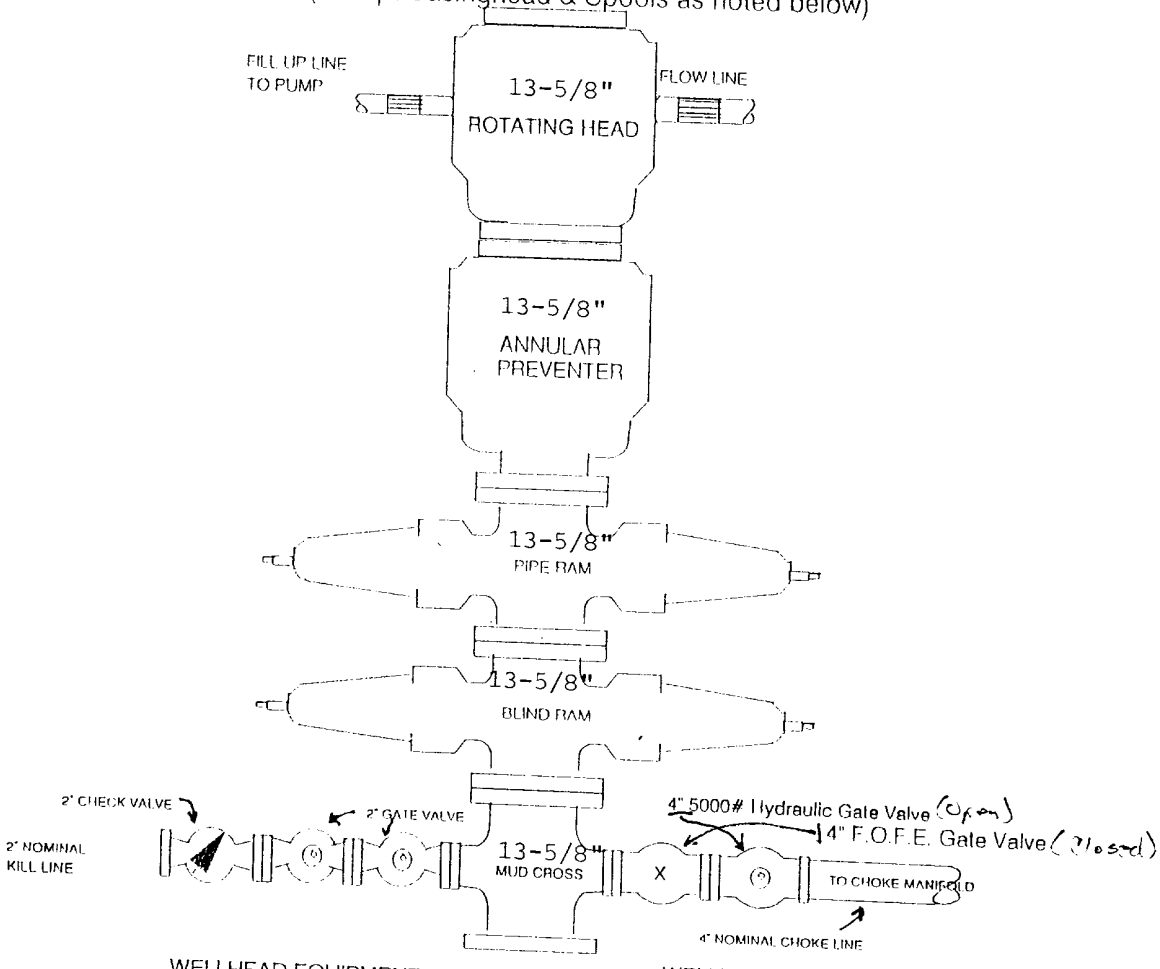
Date: 12/5/98 Signature: _____

Robert A. Schwering, P.E.
Operations Manager: SE New Mexico
Bonneville Fuels Corporation

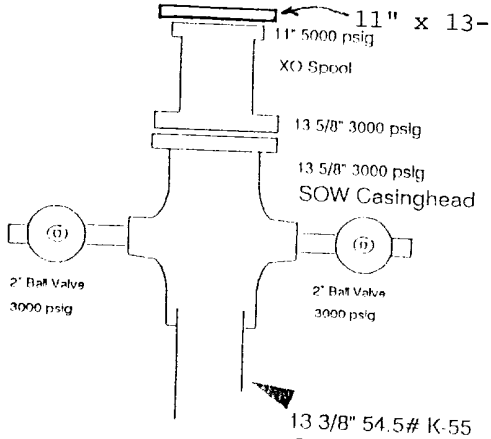
SOAPBERRY DRAW STATE COM. 7-#1

Exhibit #1

MINIMUM BLOW-OUT PREVENTER REQUIREMENTS
ALL 5000 PSI WP EQUIPMENT
(Except Casinghead & Spools as noted below)



WELLHEAD EQUIPMENT:
Surface Profile: 750' to 2100'.



WELLHEAD EQUIPMENT:
Intermediate Profile: 2100' to 10,950'.

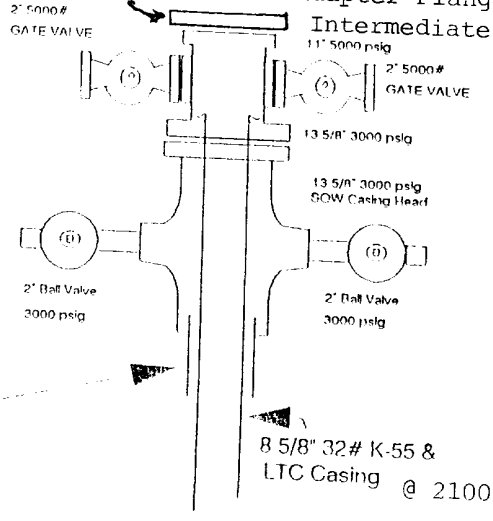


EXHIBIT #2

SOAPBERRY DRAW STATE COM. 7-#1

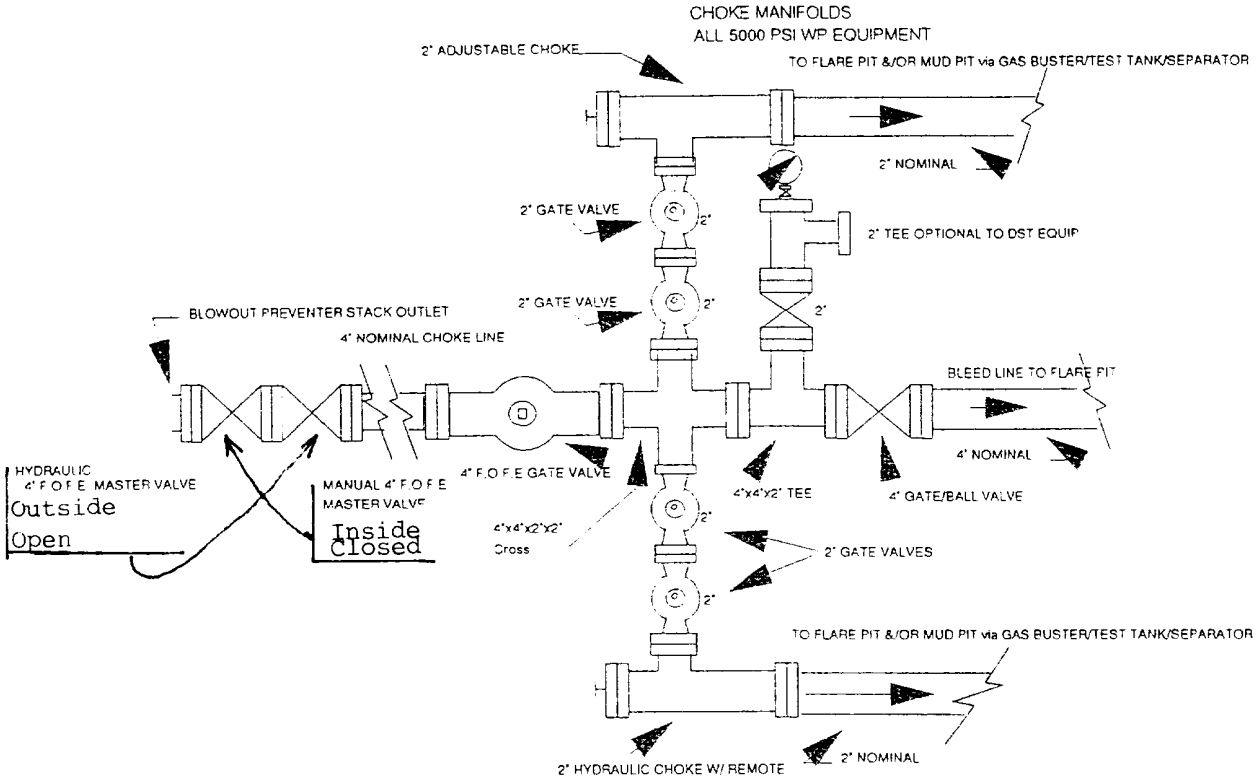


Exhibit #3
H2S SAFETY PLAN
8-Point Drilling Plan

Soapberry Draw State Com. 7-#1 Well

WELL-SITE SCHEMATIC:
A well-site schematic (Exhibit #3a) is attached. This schematic indicates:

1. The prevailing winds at this site are out of the NW and SW.

2. Briefing Area #1 (the principle briefing area) is located at the west edge of location at the permanent access entrance. Briefing Area #1 will have a sign indicating the condition of the site (**Green- OK:** no H2S; **Yellow-Caution:** H2S encountered previously at levels greater than 10 PPM and/or currently at levels less than 10 PPM; **Red- Hazard:** H2S encountered or present on site at levels greater than 10 PPM - Cascade system required for work).

3. Briefing Area #2 (the secondary briefing area) will be uphill at the NE corner of the location/reserve pit.

4. Three (3) windsocks will be placed on location with one at Briefing Area #1, one at Briefing Area #2, and one at the SE corner of the location. This should allow anyone at any position on the location to determine wind direction and move upwind and uphill in the event of an H2S release.

5. A 4-channel alarm system will be installed to detect H2S concentrations greater than 10 PPM with individual monitors at the shaker pit, in the substructure of the rig, on the drilling floor and on the mud tanks.

TRAINING AND EQUIPMENT FAMILIARITY REQUIRED:
All of the rig crew, mud loggers, geologists, company supervisors, and the mud engineer and all other regular on-site personnel will be required to undergo H2S training and pass a certification test. All of these personnel will be aware of H2S release procedures and MUST BE familiar and comfortable with donning 5-minute escape masks/packs and donning 30-minute self-contained rescue units.

All personnel MUST understand the fundamentals of rescue in an H2S environment - **you cannot help anyone UNLESS you have a rescue unit ON.**

The importance of visual contact between on-site personnel (the "buddy" system) will be emphasized. **ALL REGULAR ON-SITE PERSONNEL WILL HAVE AT LEAST ONE "BUDDY".**

LOCATION OF RESCUE AND ESCAPE AIR MASKS/UNITS and Other H2S Equipment:

1. Rescue units will be located as follows on the location:
   - 2: 30-minute rescue units will be kept at Briefing Area #1.
   - 1: 30-minute rescue unit will be kept at Briefing Area #2.

2. 5-minute escape units will be kept at the following locations:
   - 5 at the drill floor or in the dog house.
   - 1 in each trailer on location.
   - 2 at the shale pit.
   - 1 at the base of the gas buster.
   - 1 at the choke manifold.
   - 2 at the pill pit.
   - 1 at the pump shed.
   - 1 at the generator house.
   - 1 at the accumulator.

3. A hand-held portable H2S detector kit and a flare gun will be kept at Briefing Area #1 or in the Site Supervisor's Trailer for emergency

PERIOD OF OPERATION UNDER H2S PLAN AT THIS WELL SITE:
All of the H2S equipment identified above will be installed and operational, and all of the site personnel H2S Training and Certification will be completed, PRIOR TO the drilling out of the Surface Casing at 750'. All new site personnel, after this time, will be H2S Trained and Certified PRIOR TO entering location. This H2S plan will be adhered to until this well is either successfully drilled to Total Depth, Cased and Cemented or Plugged and Abandoned.

H2S SAFETY DRILLS REQUIRED:
Each crew will be required to conduct an H2S Release safety drill at least once a week. Each of these drills and the time/quality of each drill will be recorded on the appropriate IADC Tour Sheet. Each of these drills will require all location personnel to pick up their nearest upwind 5-minute escape pack and assemble at either Briefing Area #1 or Briefing Area #2, whichever is upwind. Personnel will then be tallied and a rescue party assembled (with 30-minute rescue packs) to recover any "missing" personnel.

H2S RELEASE DURING WELL CONTROL OPERATIONS:
Personnel will be briefed on the complications that can occur as a result of an H2S Release DURING a well control operation. Some H2S and Well Control Drills will be conducted simultaneously in order to emphasize the proper procedure to follow should an H2S Release occur during a Well Control Operation.

Should an H2S Release occur simultaneous with a kick being detected:

1. Immediately don Up-Wind and Dog House 5-minute escape packs. Keep your buddy in sight.

2. Pick-up the kelly to the slip-set position and set the slips and continue to circulate the well with strokes reduced to the preferred kill rate.

3. Open the Hydraulic Master Valve and the Hydraulic Master Choke. Put choke discharge through the gas buster with fluid returns to the mud pits.

4. Close the Annular Preventer.

5. Move Up-Wind ASAP to the Up-Wind Briefing Area.

6. Tally personnel and assemble a rescue party with 30-minute rescue packs to search for any missing personnel.

7. CALL IMMEDIATELY FOR A CASCADE SAFETY SYSTEM TO WORK UNDER.

Should an H2S release occur during a well control operation after the well control operation is underway:

1. Immediately don Up-Wind and Dog House 5-minute escape packs. Keep your buddy in sight.

2. Put choke discharge through the gas buster with fluid returns to the mud pits. DO NOT CHANGE CHOKE SETTINGS OR CIRCULATION RATE.

3. Move Up-Wind ASAP to the Up-Wind Briefing Area.

4. Tally personnel and assemble a rescue party with 30-minute rescue packs to search for any missing personnel.

5. CALL IMMEDIATELY FOR A CASCADE SAFETY SYSTEM TO WORK UNDER.

IGNITION OF THE WELL:
IN THE CASE OF AN UNCONTROLLED RELEASE OF H2S AT THE DRILL-SITE:
A FLARE PISTOL WILL BE MAINTAINED AT BRIEFING AREA #1 AND/OR IN THE BONNEVILLE FUELS CORPORATION SUPERVISORS TRAILER (ON THE DESK) AT ALL TIMES FOR THE IGNITION OF THE WELL IN THE CASE OF AN UNCONTROLLED RELEASE OF H2S AT THE SITE.

CRITICAL PERSONNEL DEFINED - LOCATION ENTRY PROSCRIBED:
Bonneville Fuels Drilling Supervisors and Rig Contractor Supervisors, Rig Crewmen, the Mud Engineer, and Safety Company Personnel are hereby defined as CRITICAL PERSONNEL. NO personnel other than CRITICAL PERSONNEL will be permitted to enter location should a Red Hazard Sign (ambient greater than 10 PPM H2S) concentration be encountered - until such release is controlled and ended, except for critical material delivery personnel as outlined below.

H2S SCAVENGER REQUIRED ON LOCATION:
An H2S scavenger for water based drilling fluids will be kept on location in sufficient quantity to provide a base concentration in the drilling fluid of 1/2 Pound Per Barrel of drilling fluid in the hole & steel tank mud system should H2S be encountered in detectable quantities in the well. Additional adequate supply will be maintained at the mud vendors nearest storage facility.

PERSONNEL ADMISSION AND SITE REGISTRATION REQUIREMENTS:

If H2S is encountered at the site and the site is functioning under a Yellow Caution Sign (H2S encountered):

1. SITE VISITATION BY NON-CRITICAL PERSONNEL WILL BE DISCOURAGED.

2. ALL ON-SITE PERSONNEL WILL BE REQUIRED TO SIGN-IN AND SIGN-OUT AT BRIEFING AREA ACCESS CONTROL STATION.

3. During Yellow Caution periods Geological and Service Company personnel will be allowed on location ONLY if properly trained and certified for H2S and ONLY to perform work. All such personnel must sign-in and sign-out as above.

If an H2S release with an ambient concentration greater than 10 PPM then the well-site will be operating under the Red Hazard Sign (H2S present):

1. SITE VISITATION BY NON-CRITICAL PERSONNEL IS PROHIBITED. No Geological or Non-Delivery Service Company Personnel will be allowed on location until a Yellow (Caution) condition has been restored to the location.

2. WORK MAY OCCUR ONLY WHEN A CASCADE AIR SYSTEM IS OPERATIONAL, IN PLACE, and IN USE - Except for necessary well control work IF well control operations are already underway. Work to control the H2S release will continue at the site until a Yellow (Caution) Condition is established/achieved.

3. ALL ON-SITE PERSONNEL WILL BE REQUIRED TO SIGN-IN AND SIGN-OUT AT BRIEFING AREA ACCESS CONTROL STATION.

4. REQUIRED MATERIAL DELIVERIES MAY ONLY BE MADE BY H2S TRAINED AND CERTIFIED SERVICE COMPANY PERSONNEL WORKING UNDER A CASCADE SYSTEM WITH THE DIRECT SUPERVISION AND ASSISTANCE OF SAFETY COMPANY PERSONNEL.

NEARBY DWELLING PLAN: ETCHEVERRY RESIDENCE:
During the period of time in which the potentially sour interval of this well is being drilled (from roughly 2140' to 7,970': Approx. 10 drilling days) the nearby Etcheverry residence may be evacuated as a precautionary measure. This evacuation may be extended if, in the opinion of the Operator, the logged presence of H2S in these intervals makes the return to residence of this family unduly hazardous to their health - this issue is addressed in the Damage settlement.

H2S PLAN MAY NOT BE REDUCED IN SCOPE:
The aforementioned is an H2S plan which takes into consideration MOST but not ALL of the training, equipment and operational planning issues associated with Potential H2S occurrence at this well-site. No well control or H2S plan can be comprehensive enough to address all possible operational outcomes. This plan may be subsequently modified or improved to fit site, wellbore or drilling equipment constraints with MORE stringent, numerous and comprehensive provision of Safety Equipment, Safety Training, and Safety Personnel requirements. This plan may not be weakened or in any way reduced in the provision of Safety Equipment, Safety Training, or Safety Personnel, however. This plan provides for the MINIMUM required provision of Safety Equipment, Safety Training and Safety Personnel for the drilling of the Soapberry Draw State Com. 7-#1 well.

12/5/98

R.A. Schwering, P.E.
Operations Manager: SE New Mexico
Bonneville Fuels Corporation

Soapberry Draw State Com. 2-#1 | EXHIBIT #3a

Site/Equip. or Layout/Diagram:

Highlighted:

Property Line: DO NOT CROSS ① Well Control Eqpt.
OR DISTURB ② H_2S Equipment