

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

30-015-25907
5. LEASE DESIGNATION AND SERIAL NO.
LC-059365

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

BASS ENTERPRISES PRODUCTION CO.

3. ADDRESS OF OPERATOR

P.O. BOX 2760 MIDLAND, TEXAS 79702

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

At surface

1980' FSL & 1980' FWL SEC 30 T21S R28E (Unit letter K)
Eddy Co. NM

At proposed prod. zone Same as above

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

Two miles East of Carlsbad New Mexico

15. DISTANCE FROM PROPOSED*

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

1980

16. NO. OF ACRES IN LEASE

2553.61

17. NO. OF ACRES ASSIGNED
TO THIS WELL

316.44

18. DISTANCE FROM PROPOSED LOCATION*

TO NEAREST WELL, DRILLING, COMPLETED,
OR APPLIED FOR, ON THIS LEASE, FT.

± 4,620

19. PROPOSED DEPTH

12,100

20. ROTARY OR CABLE TOOLS

Rotary

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

Ungraded GR 3166.4'

22. APPROX. DATE WORK WILL START*

Undetermined

23.

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
5"	11 3/4	42	540	340 SX CEMENT
5 5/8"	8 5/8	24&28	2835	850 SX CEMENT
7 7/8"	5 1/2	17&20	12100	700 SX

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

Tracy L. Bowers

TITLE

Engineering Assistant

DATE

March 22, 1988

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

APPROVED BY

TITLE

DATE

CONDITIONS OF APPROVAL, IF ANY:

POST 10-1
NL&API
4-29-88

**NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT**

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section.

REVISED EXHIBIT A

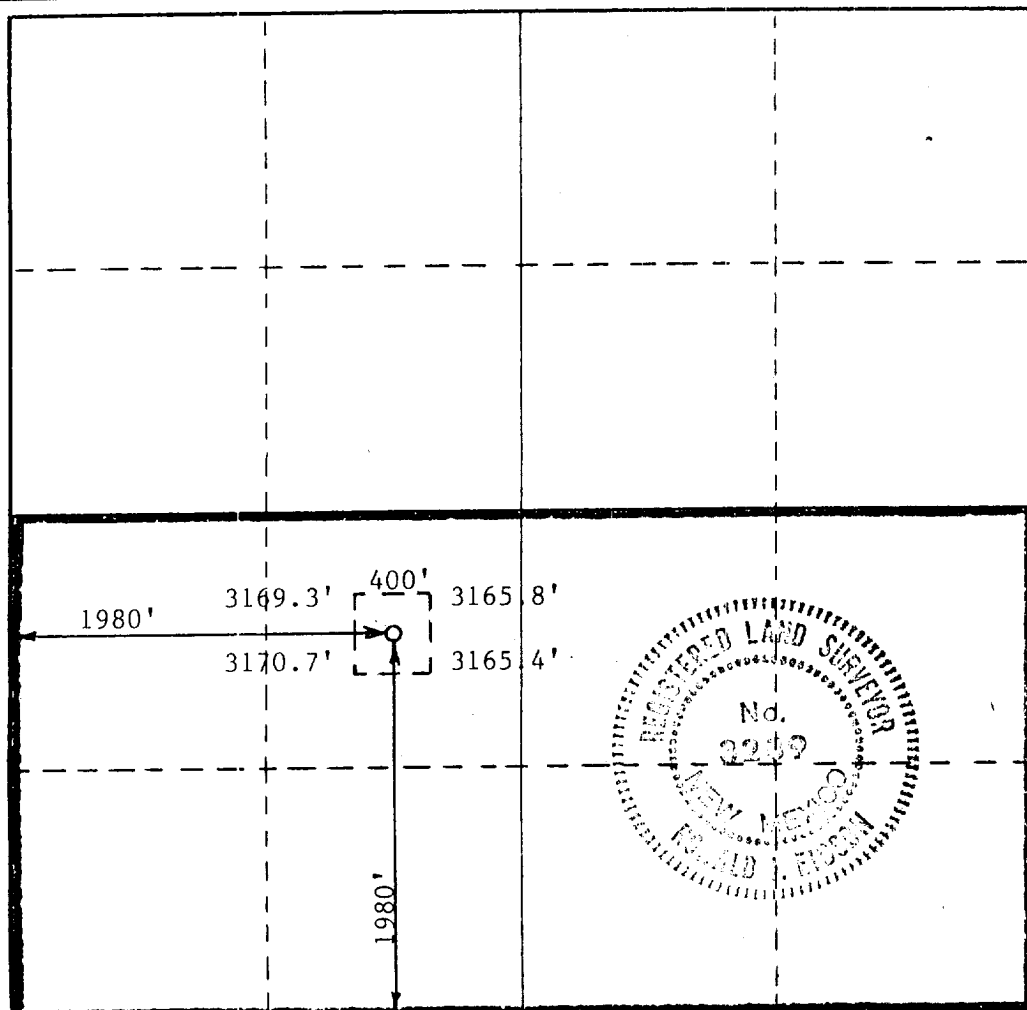
Operator BASS ENTERPRISES PRODUCTION CO.			Lease BIG EDDY UNIT		Well No. 102
Unit Letter K	Section 30	Township 21 SOUTH	Range 28 EAST	County EDDY	
Actual Footage Location of Well:					
1980 feet from the SOUTH line and		1980 feet from the WEST line			
Ground Level Elev. 3166.4'	Producing Formation MORROW	Pool EAST CARLSBAD GAS	Dedicated Acreage: 316.44 Acres		

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☒ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) SE/4, E $\frac{1}{2}$ SW $\frac{1}{4}$, and NW/4 of SW/4; Bass Companies

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name
Troy L. Bevers

Position
Engineering Assistant

Company
Bass Enterprises Prod. Co.

Date
April 16, 1988

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed
3-19-88

Registered Professional Engineer and/or Land Surveyor
Ronald J. Eidson

Certificate No. **JOHN W. WEST, 676**
RONALD J. EIDSON, 3239

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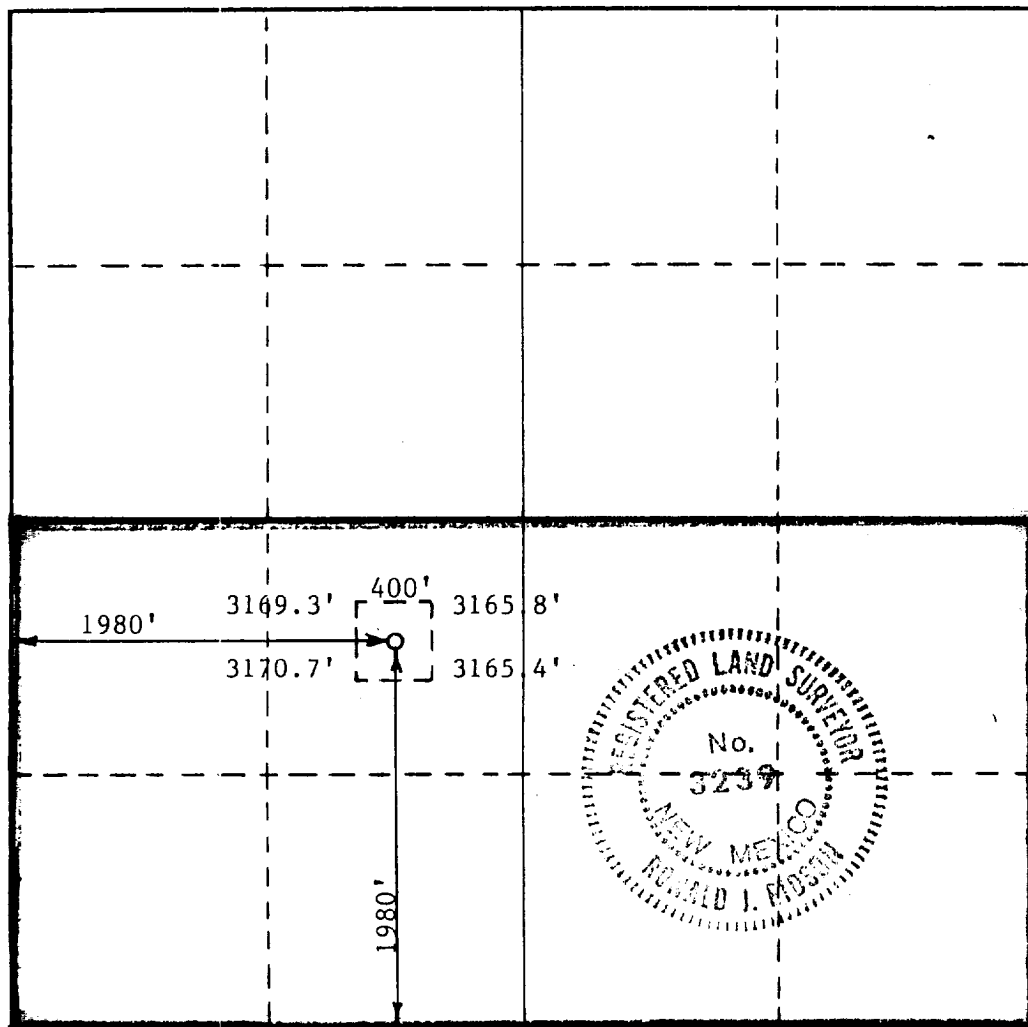
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☒ Yes ☐ No If answer is "yes," type of consolidation UNITIZATION

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

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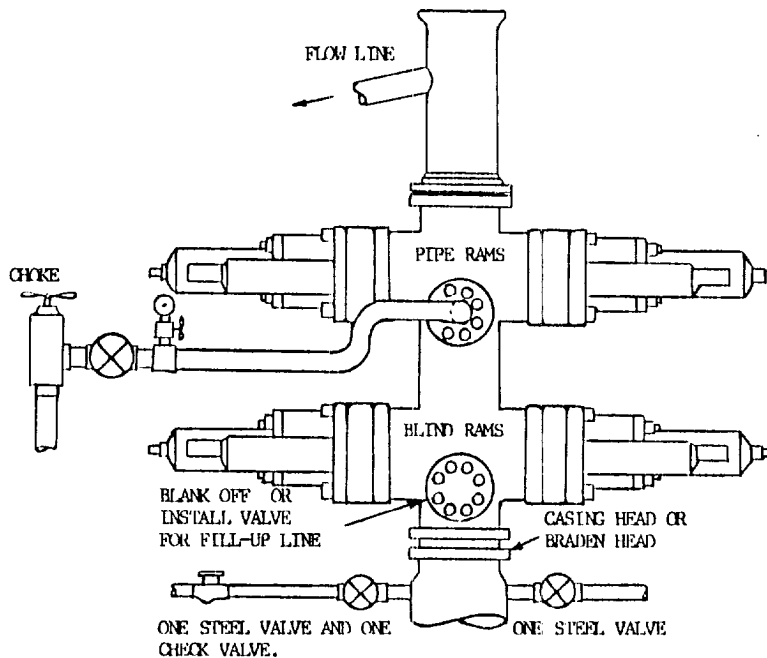
CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Troy L. Bevers
 Name **Troy L. Bevers**
 Position **Engineering Assistant**
 Company **Bass Enterprises Prod. Co.**
 Date **March 22, 1988**

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed **3-19-88**
 Registered Professional Engineer and/or Land Surveyor
Ronald J. Eidson
 Certificate No. **JOHN W. WEST, 676**
RONALD J. EIDSON, 3239

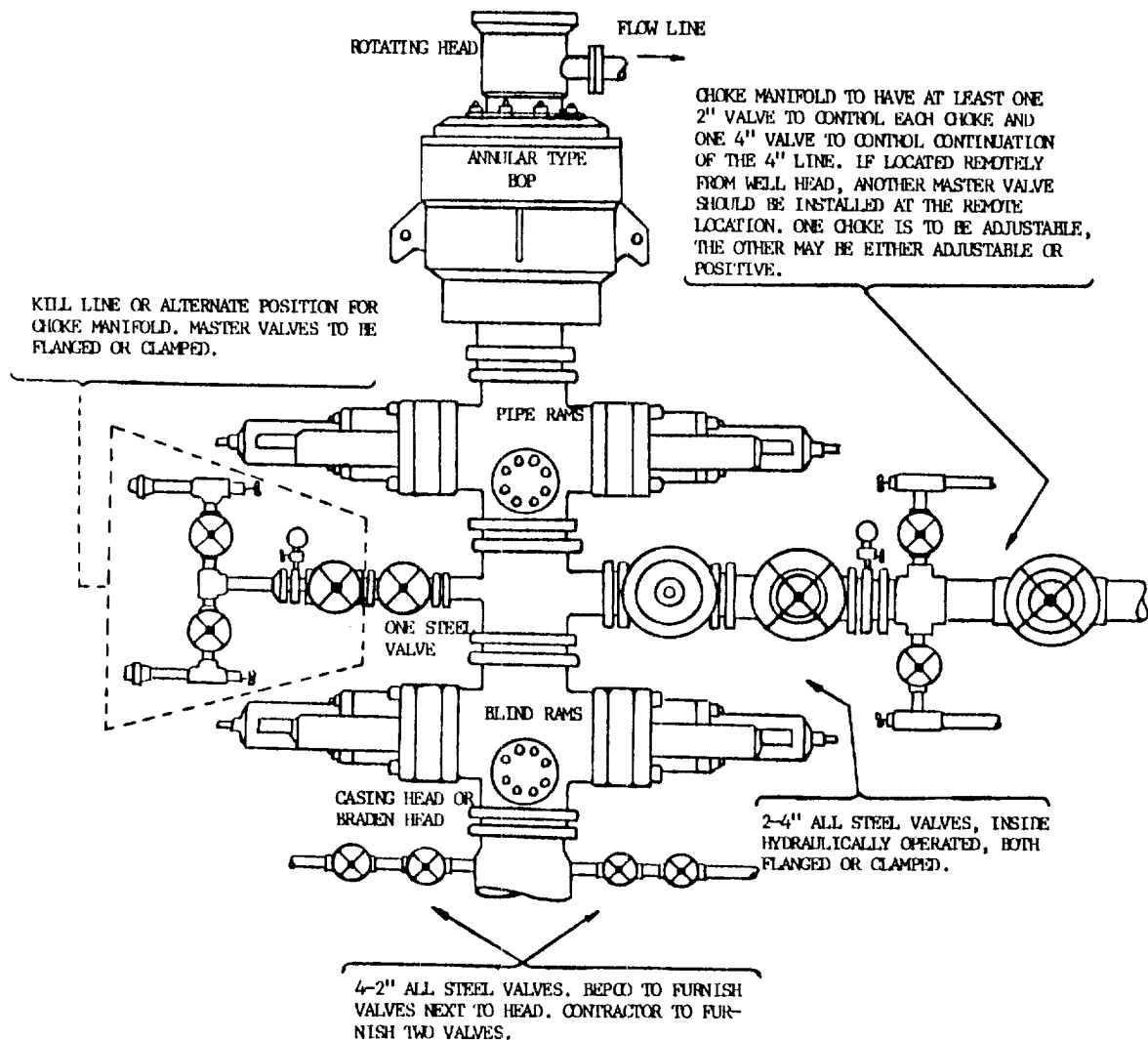


THE FOLLOWING CONSTITUTE MINIMUM BLOWOUT PREVENTER REQUIREMENTS

- A. One double gate blowout preventer with lower rams blind and upper rams for pipe, all hydraulically controlled.
- B. Opening on preventers between rams to be flanged, studded or clamped and at least two inches diameter.
- C. All connections from operating manifold to preventers to be all steel hose or tube a minimum of one inch in diameter.
- D. The available closing pressure shall be at least 15% in excess of that required with sufficient volume to operate (close, open, and re-close) the preventers.
- E. All connections to and from preventers to have a pressure rating equivalent to that of the BOP's.
- F. Manual controls to be installed before drilling cement plug.
- G. Valve to control flow through drill pipe to be located on rig floor.
- H. Choke may be either positive or adjustable. Choke spool may be used between rams.

REPCO II

ONE HYDRAULIC DUAL BLOWOUT PREVENTER



THE FOLLOWING CONSTITUTE MINIMUM BLOWOUT PREVENTER REQUIREMENTS

- A. Conditions may be met with an annular type blowout preventer and pipe ram type blowout preventer above a choke spool, and a blind ram below the choke spool.
- B. Opening on choke spool to be flanged, studded or clamped.
- C. All connections from operating manifolds to preventers to be all steel hose or tube a minimum of one inch in diameter.
- D. The available closing pressure shall be at least 15% in excess of that required with sufficient volume to operate (close, open, and re-close) the preventers.
- E. All connections to and from preventer to have a pressure rating equivalent to that of the BOP's.
- F. Manual controls to be installed before drilling cement plug.
- G. Kelly cock to be installed on kelly.
- H. Inside blowout preventer to be available on rig floor.
- I. Dual operating controls: one located by drillers position and the other located a safe distance from the rig floor.

BEPOD IV

THREE CLOSURE HYDRAULIC BLOWOUT PREVENTERS

EIGHT POINT PROGRAM

NAME OF WELL: Big Eddy Unit No. 102

LOCATION: 1980' FSL & 1980' FWL, Sec 30, T21S, R28E, Eddy County, NM

POINT 1: ESTIMATED FORMATION TOPS (SEE NO. 2 BELOW)

(See No. 2 below)

POINT 2: WATER, OIL, GAS AND/OR MINERAL BEARING FORMATIONS

Anticipated formation tops: Estimated KB 3185'
Estimated Graded GL 3165'

<u>FORMATION</u>	<u>ESTIMATED TOP FROM KB</u>	<u>ESTIMATED SUBSEA TOP</u>	<u>BEARING</u>
B/Rustler	540'	+2645	Water
T/Capitan Reef	935'	+2250	Water
B/Capitan Reef and			
T/Delaware Mtn Group	2835'	+350	Oil/Gas/Wtr
T/Bone Spring Formation	5660'	-2475	Oil/Gas
T/Wolfcamp Formation	9160'	-5975	Oil/Gas
T/Strawn Formation	10356'	-7171	Oil/Gas
T/Strawn "C" Reservoir	10618'	-7433	Oil/Gas
T/Atoka Formation	10748'	-7563	Oil/Gas
T/Morrow Formation	11328'	-8143	Oil/Gas
T/Me Morrow	11597'	-8412	Oil/Gas
T/Lr Morrow	11828'	-8643	Oil/Gas
TD Morrow Formation	12100'	-8915	Oil/Gas

POINT 3: CASING PROGRAM

<u>TYPE</u>	<u>INTERVALS</u>	<u>PURPOSE</u>	<u>CONDITION</u>
20"	0' - 40'	Conductor	Contr Discretion
11-3/4" 42#/ft H-40 ST&C	0' - 540'	Surface	New and/or Used
8-5/8" 24#/ft K-55 ST&C	0' - 2500'	Intermediate	New and/or Used
8-5/8" 28#/ft S-80 ST&C	2500' - 2835'	Intermediate	New and/or Used
5-1/2" 17#/ft N-80	0' - 6000'	Production	New
5-1/2" 20#/ft N-80	6000' - 12100'	Production	New

POINT 4: PRESSURE CONTROL EQUIPMENT (SEE ATTACHED EXHIBIT A)

A BOP equivalent to a BEPCo II (copy attached), furnished by the contractor will be nipped up on the surface casinghead. A BOP equivalent to a BEPCo IV, furnished by the contractor will be nipped up on the intermediate casinghead. Each entire BOP stack, choke, kill lines, kelly cock, kelly safety valve, inside blowout preventer, etc. will be tested to the rated working pressure of the preventer or casinghead, whichever is less. Both a low pressure (200 psi) and a working pressure test will be required:

- a) Upon initial installation
- b) After any component changes

A function test to insure that the preventers are operating correctly will be performed on each trip, but not more than once per day.

POINT 5: MUD PROGRAM

<u>DEPTH</u>	<u>WT</u>	<u>FUNNEL SEC</u> <u>VISCOSITY</u>	<u>PV</u>	<u>YP</u>	<u>API</u> <u>FLUID LOSS</u>	<u>Ph</u>
0'-540'	8.4-8.8	34-38	NC	NC	NC	NC

Drill the surface hole with a 15" bit using FW spud mud. Maintain a funnel viscosity of 34-38 sec. for adequate hole cleaning. Use ground paper to prevent seepage and filter cake buildup through FW sands. If circulation is lost, well can be drilled blind to casing point.

540'-2835'	8.4-9.0	28-30	NC	NC	NC	9.5
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Drill out surface casing with FW. Maintain a funnel viscosity of 28-30 sec. for adequate hole cleaning. Circulation problems are possible in the Capitan Reef. Circulation problems should be combatted by mixing a viscous mud pill of 200-250 bbls with 18-25 ppb of ground paper, cedar fiber and cellophane (kwik-seal) fiber. The paper and cedar fiber should provide a fibrous matrix and the kwik-seal should fill in the gaps and re-establish returns. If returns cannot be re-established after two or three mud pills, dry drill to casing depth with FW.

2835'-12100'	9.2-11.5	34-44	5-11	3-8	NC-10	10
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After intermediate pipe is set, jet & clean the working pits and drill out with cut BW while circulating the steel pits. This cut brine system should be used to drill to +200' above the T/Wolfcamp @ +9160'. At +8860', the drilling mud should be a 10# brine system with 2% KCl and a Ph of 10. Before drilling the T/Wolfcamp, the mud-gas separator and rotating head should be fully operational. Mud density should gradually be brought up to at least a 10.5 ppg before drilling the Strawn. Bring the API fluid loss down to 10 cc before drilling the T/Strawn (1st objective) at 10356'. This water loss control should be maintained to TD. Additional objectives are the Atoka (T/Atoka 10748') and Morrow formations (T/Morrow 11328'). Mud wt should be steadily increased to +10.8 ppg system for the Atoka and a +11.5 ppg system for the Morrow. A small gas flare could be possible from the Atoka to TD. Lost circulation in the Delaware Mtn Group is not expected, but should be anticipated. From 5550' to TD, sack and mark drill cuttings. The FV PV and YP should be varied to provide good formation samples for the company geologist and/or mud logger.

POINT 6: TECHNICAL STAGES OF OPERATION

A: Testing

As drilling shows merit within the Strawn and Atoka

B: Logging

<u>Run No.</u>	<u>Tool</u>	<u>Interval</u>	<u>Status</u>
1 @ 12100'	GR-DLL-MSFL (Caliper & Tension)	TD to intermediate csg	Definite
2 @ 12100'	GR-Neu-Lithodensity (Cal & Tension)	TD to intermediate csg	Definite

C: Coring

No cores are anticipated on this well

D: Cement

<u>Interval</u>	<u>Amount</u> <u>sxs</u>	<u>Ft of</u> <u>Fill</u>	<u>Type</u>	<u>Gal/sx</u>	<u>ppg</u>	<u>Ft³/sx</u>
Surface	*340 (75% excess)	540	Class "C" Neat w/ 2% CaCl ₂ & 1/4 ppg flocele	6.3	14.8	1.32
Intermediate						
Stage 1						
Lead	150	1085	Lite cmt w/ 1/4 #/sx LCM	9.9	12.7	1.84
Tail	100	520	Class "C" Neat w/ 1/4 sx LCM	6.3	14.8	1.32
DV Tool set @ 1100'						
Stage 2						
Lead	**200 (100% excess)	725	Lite cmt w/ 1/4 #/sx LCM	9.9	12.7	1.84
Tail	**150 (100% excess)	390	Class "C" Neat w/ 1/4 sx LCM	6.3	14.8	1.32
Production						
Lead	***200 (20% excess)	1700	Lite w/ 3% KCl & additives	9.9	12.7	1.84
Tail	***500 (20% excess)	3050	Class "H" w/ 3% KCl & additives	5.18	15.7	1.19

* Cmt must circulate or be topped off. If circulation is lost before cmt job, use 200% excess.

** Cmt must circulate on second stage or be topped off.

*** Volume should be verified from caliper log TOC (Class "H") should be brought back to above T/Wolfcamp @ 9160'.

POINT 7: ANTICIPATED RESERVOIR CONDITIONS

No abnormal pressures or temperatures are anticipated.

POINT 8: OTHER PERTINENT INFORMATION:

A: Auxiliary Equipment

A kelly cock will be utilized and a full opening stab in valve will be on the rig floor.

B: Anticipated Starting Date

As yet undetermined.

EXHIBIT B

1971 Map Revision

Access route

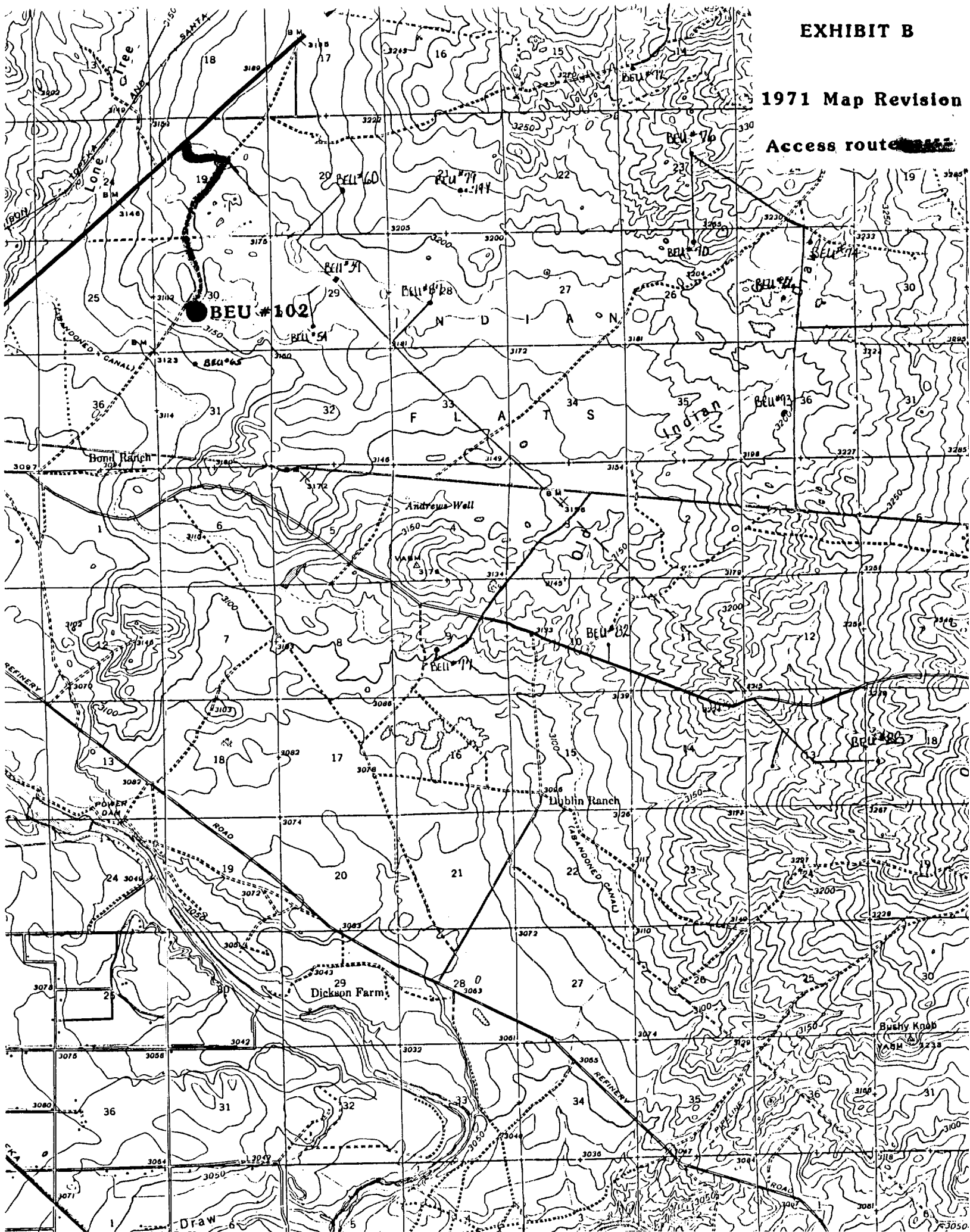


EXHIBIT D

