

FILE NO. _____
 DRAWING NO. _____
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY 1:200
 PROVEN SOURCE OF ELEVATION Jct S45 32 & 37
 FL. 3235

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF MINES.
 (SIGNED) Burl J. Smith
 R.P.E. 6988 L.L.S. _____

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 FORM IV-6 (8-78)



DATE 26 MAY, 1982
 OPERATOR'S WELL NO. COOPER STATE UNIT # 2
 API WELL NO. 47 - 093 - 0058
 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION

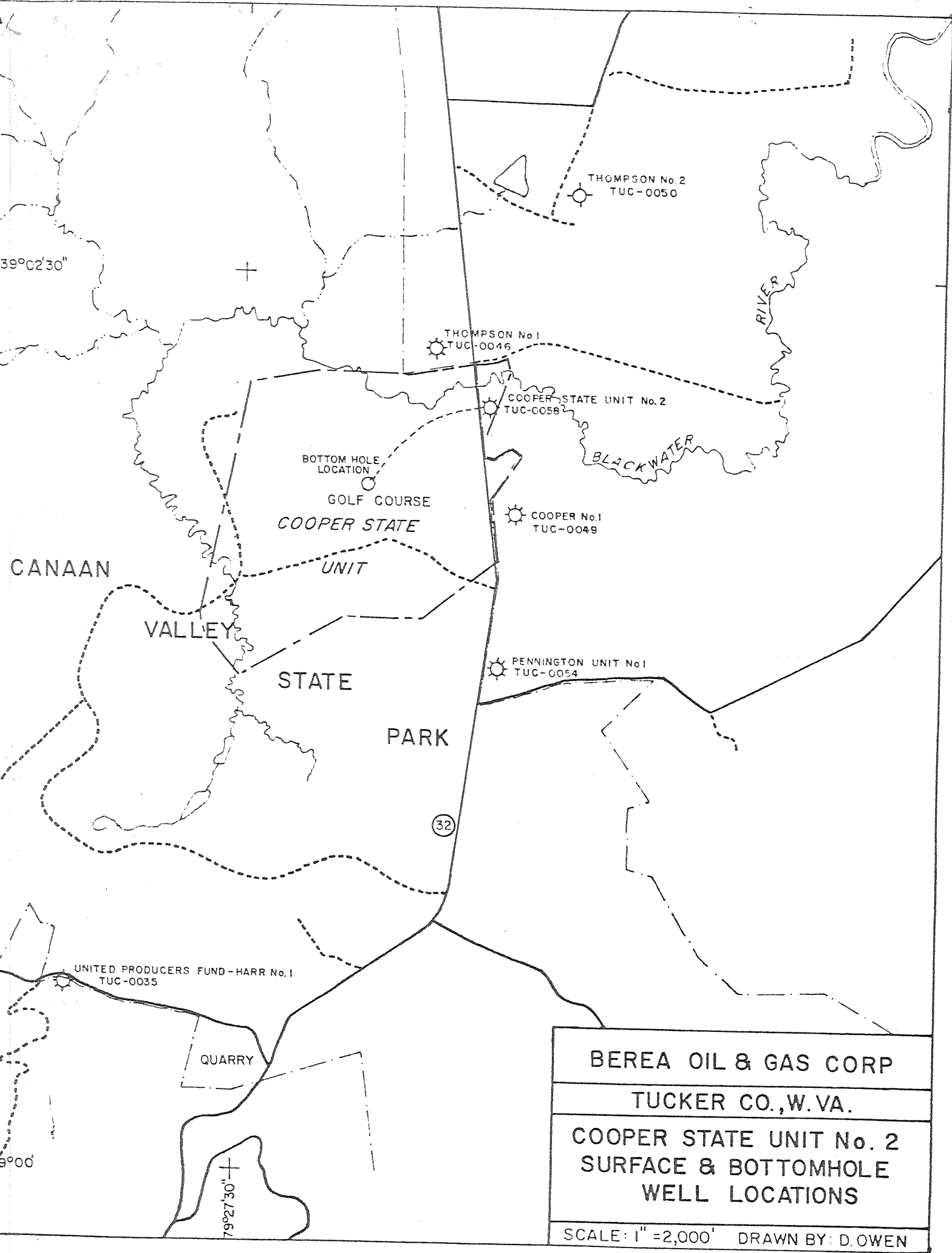
Deviated Hole

WELL TYPE: OIL ___ GAS ___ LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS,") PRODUCTION ___ STORAGE ___ DEEP ___ SHALLOW ___
 LOCATION: ELEVATION 3216 WATER SHED BLACKWATER RIVER
 DISTRICT DRY FORK COUNTY TUCKER
 QUADRANGLE BLACKWATER FALLS 7.5' Davis 15' SW
 SURFACE OWNER MERLIN B. PROPST ACREAGE 8
 OIL & GAS ROYALTY OWNER SEE ABOVE LEASE ACREAGE 410.05
 LEASE NO. _____

PROPOSED WORK: DRILL CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___ PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____

PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___
 TARGET FORMATION ORISKANY ESTIMATED DEPTH 8500'
 WELL OPERATOR BEREA OIL & GAS CORP DESIGNATED AGENT MARK SCHUMACHER
 ADDRESS 901 CHEMICAL BANK BLDG, 69 DELAWARE AVE ADDRESS ONE BEREA PLAZA
BUFFALO, NY 14202 BRIDGEPORT, WV 26330

JUN 14 1982



BEREA OIL & GAS CORP
TUCKER CO., W. VA.
COOPER STATE UNIT No. 2 SURFACE & BOTTOMHOLE WELL LOCATIONS
SCALE: 1" = 2,000' DRAWN BY: D. OWEN

NOV 3 1982



Date October 29, 1982
Operator's
Well No. Cooper State Unit #2
Farm Cooper State Unit
API No. 47 - 093 - 0058

CONFIDENTIAL

OIL & GAS DIVISION
DEPT. OF MINES
State of West Virginia
Department of Mines
Oil and Gas Division

WELL OPERATOR'S REPORT
OF
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil - / Gas X / Liquid Injection - / Waste Disposal - /
(If "Gas," Production X / Underground Storage - / Deep X / Shallow - /)

LOCATION: Elevation: 3227' K 3216' Watershed Blackwater River
District: Dry Fork County Tucker Quadrangle Blackwater Falls 7 1/2'

COMPANY Berea Oil & Gas Corp.
ADDRESS PO Box 299, Bridgeport, WV 26330
DESIGNATED AGENT Mark V. Schumacher
ADDRESS PO Box 299, Bridgeport, WV 26330
SURFACE OWNER Merlin Propst
ADDRESS Box 23, Rt. 1, Davis, WV 26260
MINERAL RIGHTS OWNER same
ADDRESS _____
OIL AND GAS INSPECTOR FOR THIS WORK Robert Stewart
ADDRESS Box 345, Jane Lew WV
PERMIT ISSUED 6/3/82
DRILLING COMMENCED 6/19/82
DRILLING COMPLETED 9/21/82

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20" 20-16		20'	
Cond. 16"		51'	230 sks
13 3/8"	246'	235.85'	200 sks
9 5/8	3099'	3068'	310 sks
8 5/8			
7			
5 1/2			
4 1/2	8888'	8870'	430 sks
3			
2 3/8"		8623'	
Liners used			

IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSION OBTAINED ON _____

GEOLOGICAL TARGET FORMATION Oriskany Depth 8500 feet
Depth of completed well 8888 feet Rotary X / Cable Tools _____
Water strata depth: Fresh 106, 215 feet; Salt 2925 feet
Coal seam depths: None Is coal being mined in the area? No

OPEN FLOW DATA
Producing formation Oriskany Pay zone depth 8672-8756 feet
Gas: Initial open flow None Mcf/d Oil: Initial open flow -- Bbl/d
Final open flow 900 Mcf/d Final open flow -- Bbl/d
Time of open flow between initial and final tests 4 hours
Static rock pressure 2250 psig (surface measurement) after 72 hours shut in
(If applicable due to multiple completion--)
Second producing formation _____ Pay zone depth _____ feet
Gas: Initial open flow _____ Mcf/d Oil: Initial open flow _____ Bbl/d
Final open flow _____ Mcf/d Oil: Final open flow _____ Bbl/d
Time of open flow between initial and final tests _____ hours
Static rock pressure _____ psig (surface measurement) after _____ hours shut in

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

10/9/82: Perf ORISKANY: 8672-8678' (8 shots)
8713-8718' (4 shots)
8750-8756' (4 shots)

10/14/82: Frac ORISKANY with 6500 gals
5% acid @ 35 BPM @ 5000#.
ISIP 3200#, 5 min 2800#.
240 bbls. flush.
Total water 1245 bbls.

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
Formations from Driller's Daily Report:					
Fill			0	17	3" wtr @ 15'
Lime			17	62	6" str wtr @ 23'
Shale			62	85	2" str wtr @ 70'
Lime			85	120	5" str wtr @ 106'
Sand & Shale			120	170	
Lime			170	195	
Sand			195	515	7" wtr @ 215'
Sand & Shale			515	797	
Red Rock & Shale			797	951	
Sand			951	1209	
Sand & Shale			1209	1710	
Red Rock & Shale			1710	1827	
Sand & Shale			1827	3099	Hole damp @ 2925'
Formations from Compensated Density Log:					
Sand			1800	1875	
Shale			1875	1904	
Sand			1904	1934	
Shale			1934	2090	
Sand			2090	2130	
Sand & Shale			2130	2160	
Shale			2160	2174	
Sand			2174	2192	
Shale			2192	2460	
Sand			2460	2515	
Sand & Shale			2515	2600	
Shale			2600	2615	
Sand			2615	2630	
Shale & Siltstone			2630	2825	
Sand			2825	2950	
Shale & Siltstone			2950	3100	
Shale			3100	3125	
Shale & Siltstone			3125	3205	
Shale			3205	3230	
Shale & Siltstone			3230	3570	
Shale			3570	3685	
Siltstone			3685	3710	

Deviated hole -
see attached sheet

- continued on P. 2 -
(Attach separate sheets as necessary)

BEREA OIL & GAS CORP.

Well Operator

By: M. V. Schwacher

Date: October 29, 1982

Note: Regulation 2.02(i) provides as follows:
"The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including coal, encountered in the drilling of a well."

berea oil & gas corp.

69 Delaware Avenue • 711 Chemical Bank Building • Buffalo, New York 14202-3878
(716) 842-0711

DIRECTIONAL SURVEY

COOPER STATE UNIT #2

<u>DEPTH(ft.)</u>	<u>DEVIATION ANGLE</u>	<u>TRUE BEARING</u>
3160	2°00'	South
3180	2°30'	S 39 W
3211	4°00'	S 65 W
3243	5°15'	N 89 W
3275	7°30'	N 85 W
3306	9°30'	N 79 W
3337	10°00'	N 61 W
3400	12°30'	N 59 W
3433	13°30'	N 66 W
3497	14°45'	N 86 W
3528	15°15'	N 81 W
3560	17°15'	N 83 W
3592	19°00'	West
3625	20°15'	S 84 W
3695	22°45'	S 72 W
3727	22°00'	S 79 W
3766	23°00'	S 81 W
3790	25°15'	S 82 W
3821	27°00'	S 82 W
3853	27°45'	S 87 W
3885	28°15'	West
3918	30°15'	N 86 W
3998	29°00'	S 77 W
4061	29°15'	S 77 W
4124	29°15'	S 77 W
4595	30°00'	S 72 W
5877	30°15'	S 67 W
6195	32°00'	S 76 W
6354	33°00'	S 66 W
6810	28°15'	S 37 W
7479	26°00'	S 30 W
8010	24°00'	S 30 W
8384	10°00'	S 35 W
8575	1°30'	S 04 W

• Branch Offices •

Gundy Building
2nd Street & West High Ave. SW
New Philadelphia, Ohio 44663
216 - 364-8847

One Berea Plaza
Routes 50/76
Bridgeport, West Virginia 26330
304 - 842-6931

jc
10/26/82

208 South LaSalle Street
Suite 821
Chicago, Illinois 60604
312 - 346-8318



Date: May 28, 1982

Operator's Well No. Cooper State Unit #2

API Well No. 47 093 0058

State County Permit

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES, OIL AND GAS DIVISION
OIL AND GAS WELL PERMIT APPLICATION

WELL TYPE: Oil X / Gas X /
(If "Gas", Production _____ / Underground storage _____ / Deep X / Shallow _____ /)

LOCATION: Elevation: 3216' Watershed: Blackwater Falls
District: Dry Fork County: Tucker Quadrangle: Blackwater Falls

WELL OPERATOR Berea Oil & Gas Corp. DESIGNATED AGENT Mark Schumacher
Address 170 W. High Avenue Address P.O. Box 299
New Philadelphia, OH 44663 Bridgeport, WV 26330

OIL & GAS ROYALTY OWNER See attached

COAL OPERATOR _____

Address _____

Address _____

Acreage 410.05

COAL OWNER(S) WITH DECLARATION ON RECORD:

SURFACE OWNER Merlin Propst

Name N/A

Address Box 23, Rt. #1
Davis, WV 26260

Address JUN - 3 1982

Acreage 8

Name _____

FIELD SALE (IF MADE) TO:

Address _____

Address _____

OIL & GAS INSPECTOR TO BE NOTIFIED

COAL LESSEE WITH DECLARATION ON RECORD:

Name Robert Stewart

Name _____

Address Box 345, Jane Lew, WV

Address _____

Phone: (304)884-7782

The undersigned well operator is entitled to operate for oil or gas purposes at the above location under a deed _____ / lease See attached
other contract _____ / dated _____, 19____, to the undersigned well operator from _____

(If said deed, lease, or other contract has been recorded:)

Recorded on See attached, 19____, in the office of the Clerk of the County Commission of _____ County, West
Va., in _____ Book _____ at page _____. A permit is requested as follows:

PROPOSED WORK: Drill X / Drill deeper _____ / Redrill _____ / Fracture or stimulate _____ /
Plug off old formation _____ / Perforate new formation _____ /
Other physical change in well (specify) _____

—planned as shown on the work order on the reverse side hereof.

The above named coal operator, coal owner(s), and coal lessee are hereby notified that any objection they wish to make or are required to
make by Code §22-4.3 must be filed with the Department of Mines within fifteen (15) days after the receipt of this Application by the
Department.

Copies of this Permit Application and the enclosed plat and reclamation plan have been mailed by registered mail or delivered by hand to
the above named coal operator, coal owner(s), and coal lessee on or before the day of the mailing or delivery of this Permit Application to
the Department of Mines at Charleston, West Virginia.

Berea Oil & Gas Corp.
170 W. High Avenue
New Philadelphia, OH 44663

PLEASE SUBMIT COPIES OF ALL
GEOPHYSICAL LOGS DIRECTLY
TO:

WEST VIRGINIA OIL AND GAS
CONSERVATION COMMIS-
SION
1615 WASHINGTON STREET EAST
CHARLESTON, WV 25311

TELEPHONE: (304) 348-3092

Well Operator
By Mary Grewell
Its Vice President, Land

PROPOSED WORK ORDER

(12-81)

THIS IS AN ESTIMATE ONLY:
ACTUAL INFORMATION MUST BE SUBMITTED ON FORM IV-35 UPON COMPLETION

DRILLING CONTRACTOR (IF KNOWN) _____
Address _____

GEOLOGICAL TARGET FORMATION, Oriskany

Estimated depth of completed well, 8500' feet Rotary X / Cable tools _____ /

Approximate water strata depths: Fresh, 40 feet; salt, 2900 feet.

Approximate coal seam depths: N/A Is coal being mined in the area? Yes _____ / No X /

CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS
	Size	Grade	Weight per ft	New	Used	For drilling	Left in well		
Conductor	13 3/8	H40	48	X		250'	250'	to surface	Kinds
Fresh Water									
Coal	N/A								Sizes
Intermediate	9 5/8	J55	36	X		3100'	3100'	1000' Fillup	
Production	4 1/2	N80	11.6	X		9100'	9100'	1000' Fillup	Depths set
Tubing	2 3/8	J55	4.7	X		9000'			
Liners									Perforations:
									Top Bottom

NOTE: Regulation 7.02 of the Department of Mines provides that the original and four copies of Form IV-2 must be filed with the Department, accompanied by (i) a plat in the form prescribed by Regulation 11, (ii) a bond in one of the forms prescribed by Regulation 12, or in lieu thereof the other security allowed by Code § 22-4-2, (iii) Form IV-9, "Reclamation Plan", applicable to the reclamation required by Code § 22-4-12b and Regulation 23, (iv) unless previously paid on the same well, the fee required by Code § 22-4-12a, and (v) if applicable, the consent required by Code § 22-4-8a from the owner of any water well or dwelling within 200 feet of the proposed well.

A separate Form Iv-2 shall not be required for fracturing or stimulating a well where fracturing or stimulating is to be part of the work for which a permit is sought and is noted as such on the Form IV-2 filed in connection therewith.

THIS PERMIT MUST BE POSTED AT THE WELL SITE.
ALL PROVISIONS BEING IN ACCORDANCE WITH CHAPTER 22,
ARTICLE 4 OF THE W. VA. CODE, THE LOCATION IS HEREBY
APPROVED FOR drilling. THIS PERMIT SHALL EXPIRE
IF OPERATIONS HAVE NOT COMMENCED BY 2-4-83.
BY [Signature]

The following waiver must be completed by the coal operator and by any coal owner or coal lessee who has recorded a declaration under Code 22-4-20, if the permit is to be issued within fifteen (15) days of receipt thereof.

WAIVER

The undersigned coal operator _____ / owner _____ / lessee _____ / of the coal under this well location has examined this proposed well location. If a mine map exists which covers the area of the well location, the well location has been added to the mine map. The undersigned has no objection to the work proposed to be done at this location, provided, the well operator has complied with all applicable requirements of the West Virginia Code and the governing regulations.

Date: _____, 19____ By _____
Its _____

Date: October 29, 1982

Operator's Well No. Cooper State Unit #2

API Well No. 47 - 093 - 0058
State County Permit

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES, OIL AND GAS DIVISION

WELL OPERATOR'S REPORT
OF
INITIAL GAS-OIL RATIO TEST

WELL OPERATOR Berea Oil & Gas Corp.
Address PO Box 299
Bridgeport, WV 26330

DESIGNATED AGENT Thomas E. Riley, P.E.
Address PO Box 299
Bridgeport, WV 26330

GEOLOGICAL TARGET FORMATION: Oriskany Depth 8500 feet
Perforation Interval 8672-8756 feet

GUIDELINES FOR TESTING:

- 1- A minimum of gas vented or flared
- 2- A 24 hour preflow into pipelines or tanks
- 3- Uniform producing rate during the 24 hour test per test period
- 4- Measurement standards as for Form IV-39, "Report of Annual Production" (see Regulation 51.01)
- 5- Separate Form IV-36 for each producing formation in a multiple completion

TEST DATA				
START OF TEST-DATE 10/29/82	TIME 7:00 AM	END OF TEST-DATE 10/29/82	TIME 9:00 AM	DURATION OF TEST 2 hrs.
TUBING PRESSURE 65	CASING PRESSURE 475	SEPARATOR PRESSURE N/A	SEPARATOR TEMPERATURE N/A	
OIL PRODUCTION DURING TEST 00	bbls.	GAS PRODUCTION DURING TEST 75	Mcf	WATER PRODUCTION DURING TEST & SALINITY 0 bbls. N/A ppm.
OIL GRAVITY N/A	°API	PRODUCING METHOD (Flowing, pumping, gas lift, etc.) Flowing		

GAS PRODUCTION		
MEASUREMENT METHOD: FLANGL TAP <input type="checkbox"/> PIPE TAP <input type="checkbox"/> L-10 <input type="checkbox"/> Open flow	POSITIVE CHOKE <input type="checkbox"/> CRITICAL FLOW PROVER <input checked="" type="checkbox"/>	
ORIFICE DIAMETER 2"	PIPE DIAMETER (INSIDE DIAM.) 2"	NOMINAL CHOKE SIZE - IN.
DIFFERENTIAL PRESSURE RANGE	MAX. STATIC PRESSURE RANGE	PROVER & ORIFICE DIAM. - IN.
DIFFERENTIAL	STATIC	GAS GRAVITY (Air-1.0) MEASURED ESTIMATED
GAS GRAVITY (Air-1.0) .61	FLOWING TEMPERATURE	GAS TEMPERATURE <u>51</u> °F
24 HOUR COEFFICIENT.	24 HOUR COEFFICIENT	
PRESSURE - psia		

TEST RESULTS			
DAILY OIL 0	bbls.	DAILY WATER 0	bbls.
		DAILY GAS 900	Mcf.
		GAS-OIL RATIO ∞	SCF/STB

Berea Oil & Gas Corp.
Well Operator
By: Thomas E. Riley
Its: Manager of Engineering

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
Continued from P. 1					
Shale			3710	3742	
Sand			3742	3748	
Shale			3748	3780	
Sand			3780	3788	
Shale & Siltstone			3788	3955	
Sand			3955	4000	
Siltstone			4000	4030	
Shale			4030	4060	
Siltstone			4060	4090	
Shale			4090	4230	
Siltstone			4230	4236	
Shale			4236	4398	
Siltstone			4398	4682	
Shale			4682	4708	
Siltstone			4708	4740	
Shale			4740	4908	
Siltstone			4908	5020	
Shale			5020	5270	
Siltstone			5270	5336	
Shale			5336	5360	
Siltstone			5360	5410	
Shale			5410	5174	
Siltstone			5174	5552	
Shale			5552	5580	
Siltstone			5580	5650	
Shale			5650	5675	
Siltstone			5675	5700	
Shale			5700	6060	
Siltstone			6060	6085	
Shale			6085	6332	
Shale			6332	7006	Well drilled on fluid 6550' to TD
Siltstone			7006	7038	
Shale			7038	7852	
Tully Limestone			7852	7884	
Hamilton Shale			7884	8170	
Marcellus Shale			8170	8362	
Onondaga Limestone			8362	8412	
Huntersville Chert			8412	8456	
Needmore Shale			8456	8500	LTD 8865'
Oriskany Sand			8500	8865	DTD 8888' ✓

*Deviated hole -
see attached sheet*

BEREA OIL & GAS CORP.

Well Operator

By: W. Schumacher, V.P.

Date: October 29, 1982

Note: Regulation 2.02(i) provides as follows:
"The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including ..., encountered in the drilling of a well."

APR 7 1986