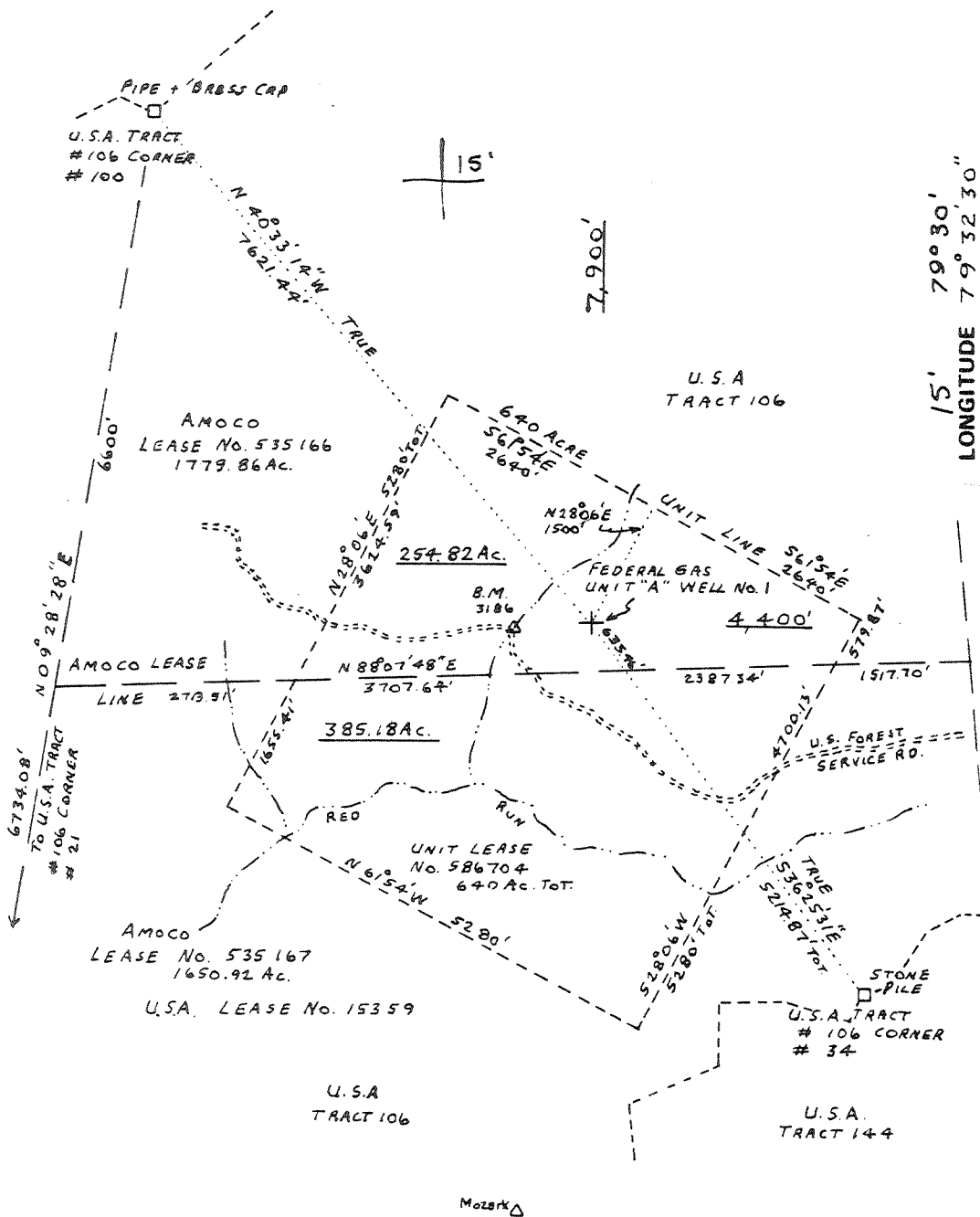


NORTH



LONGITUDE 79°30' 15' 79°32' 30"

FILE NO. \_\_\_\_\_  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY 1:2800  
 PROVEN SOURCE OF ELEVATION BENCH MARK  
3186

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) Curtis E. Keplinger  
 R.P.E. \_\_\_\_\_ L.L.S. 518

PLACE SEAL HERE

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



DATE \_\_\_\_\_, 19\_\_\_\_  
 OPERATOR'S WELL NO. ONE  
 API WELL NO. \_\_\_\_\_  
47 - 093 - 0051 - P  
 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA  
 DEPARTMENT OF MINES  
 OIL AND GAS DIVISION

WELL TYPE: OIL \_\_\_ GAS \_\_\_ LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
 (IF "GAS,") PRODUCTION \_\_\_ STORAGE \_\_\_ DEEP \_\_\_ SHALLOW \_\_\_  
 LOCATION: ELEVATION 3463 WATER SHED RED RUN OF DRY FORK  
 DISTRICT DRY FORK COUNTY TUCKER  
 QUADRANGLE MOZARK MOUNTAIN, W.VA. 7.5' PARSONS 15'  
 SURFACE OWNER U.S. GOVERNMENT ACREAGE 640  
 OIL & GAS ROYALTY OWNER U.S. GOVERNMENT LEASE ACREAGE 640  
 LEASE NO. 586704  
 PROPOSED WORK: DRILL  CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE \_\_\_ PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION \_\_\_ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) Plugged 7/6/81

PLUG AND ABANDON \_\_\_ CLEAN OUT AND REPLUG \_\_\_  
 TARGET FORMATION ORISKANY SANDSTONE ESTIMATED DEPTH 9500'  
 WELL OPERATOR Amoco Production Co. DESIGNATED AGENT GILBERT S. JAMIESON  
 ADDRESS P.O. Box 1350 TRAVERSE CITY, Mich. 49684 ADDRESS Rte. 2, Box 525 PARKERSBURG, W. Va. 26101

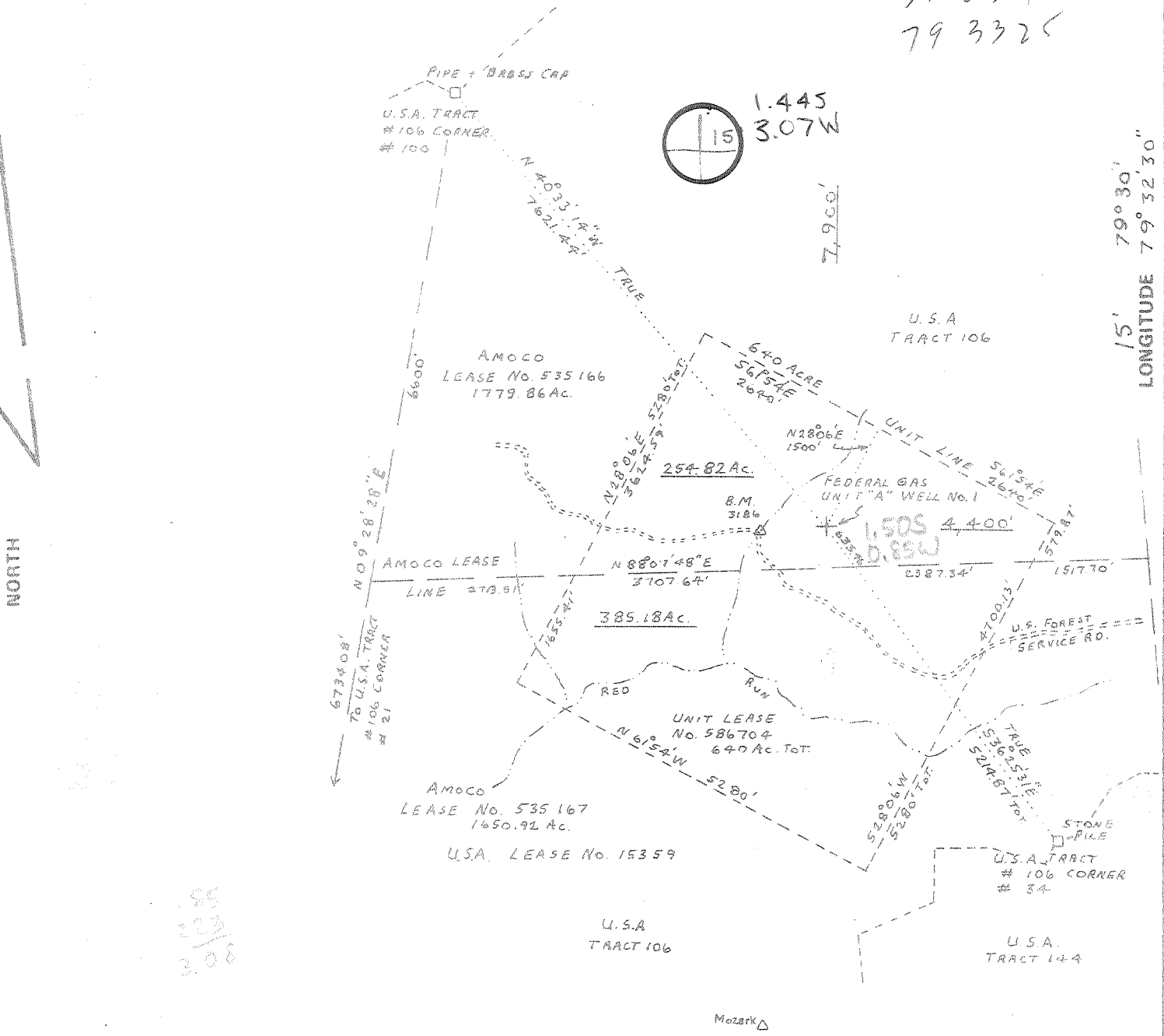
AUG 3 1981

LATITUDE 39°05'00"

39 03 45  
79 33 25

15' 79°30'  
LONGITUDE 79°32'30"

NORTH



35  
303  
300

FILE NO. \_\_\_\_\_  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY 1:2800  
 PROVEN SOURCE OF ELEVATION BENCH MARK  
 3186

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)  Curtis E. Kessler   
 R.P.E. \_\_\_\_\_ L.L.S. 518

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS  
 FORM IV-6  
 (8-73)



DATE \_\_\_\_\_, 19\_\_\_\_  
 OPERATOR'S WELL NO. \_\_\_\_\_  
 API WELL NO.  47 - 093 - 0051   
 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA  
 DEPARTMENT OF MINES  
 OIL AND GAS DIVISION

WELL TYPE: OIL \_\_\_ GAS \_\_\_ LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
 (IF "GAS,") PRODUCTION \_\_\_ STORAGE \_\_\_ DEEP \_\_\_ SHALLOW \_\_\_  
 LOCATION: ELEVATION  3463  WATER SHED  RED RUN OF DRY FORK   
 DISTRICT  DRY FORK  COUNTY  TUCKER   
 QUADRANGLE  MOZARK MOUNTAIN, WVA 7.5' PARSONS 15' SE   
 SURFACE OWNER  U.S. GOVERNMENT  ACREAGE  640   
 OIL & GAS ROYALTY OWNER  U.S. GOVERNMENT  LEASE ACREAGE  640   
 LEASE NO.  586704   
 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 SANDSTONE  ESTIMATED DEPTH  9500'   
 WELL OPERATOR  Amoco Production Co.  DESIGNATED AGENT  Gilbert S. Jamieson   
 ADDRESS  P.O. Box 1350  ADDRESS  Rte. 2, Box 525   
 TRAVERSE CITY, MICH. 49684   PARKERSBURG, W. VA. 26101

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

Date AUGUST 10, 1981

FORM IV-35  
(Obverse)

Operator's  
Well No. 1

[08-78]

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

API Well No. 47 - 093 - 0051  
State County Permit

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

LOCATION: Elevation: 3463' Watershed: Red Run of Dry Fork  
District: Dry Fork County: Tucker Quadrangle: Mozark Mountain, W. VA

WELL OPERATOR AMOCO PRODUCTION CO. DESIGNATED AGENT Mr. Martin Root  
Address P. O. Box 1350 Address 128 S. 2nd Street  
Traverse City, MI 49684 Clarksburg, W VA 26301

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

PERMIT ISSUED ON AUGUST 18, 1980 OIL & GAS INSPECTOR FOR THIS WORK:  
(IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSION OBTAINED JUNE 10, 1981 Completion in Oriskany 804-363-9105  
Name William Blosser  
Address PO Box 1028/Colfax, W VA 76566

GEOLOGICAL TARGET FORMATION: Helderberg Lms. (T.D.) Depth 9425 Feet  
Depth of completed well, Plugged feet Rotary X / Cable Tools       
Water strata depth: Fresh,      feet; salt,      feet.  
Coal seam depths: None Is coal being mined in the area? No  
Work was commenced NOVEMBER 11, 1980, and completed JULY 8, 1981

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		
Conductor	20"	VFW PE-	78#	X		45'	35 sx	Kinds
Fresh water	13-3/8	K-55	54.5#	X		2045'	1750 sx	
Coal								Sizes
Intermediate								
Production Tubing	4-1/2	N-80	11.6#	X		9425'	1160 sx	Depths set
Liners								Perforations: Top Bottom 4240' - 4254'

RECEIVED  
AUG 17 1981

OPEN FLOW DATA N/A OIL & GAS DIVISION DEPT. OF MINES  
Producing formation      Pay zone depth      feet  
Gas: Initial open flow,      Mcf/d Oil: Initial open flow,      Bbl/d  
Final open flow,      Mcf/d 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  
[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 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

AUG 31 1981

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

Perforate and stimulate the interval 4240'-4350'. 4,000 Gal 15% HCL and 500 scf N<sub>2</sub>/BBL Ave inj. - 1.9 BPM

WELL LOG

FORMATION	Color	Hard or Soft	Top Feet	Bottom Feet	Remarks
					Including indication of all fresh and salt water, coal, oil and gas
Topsoil			0	120	
Shale, dk gray			120	180	
Shale, light gray			180	260	P
Sandstone, Med-Dk Gray			260	300	
Shale, Dk Gray			300	420	
Sandstone-White			420	480	
Shale, Gray-Green			480	560	
Shale, Red			560	680	
Shale, Green			680	700	
Shale, Red			700	760	Mmc
Sandstone			760	780	800'
Shale, Red-Brown			780	940	
Shale, Gray-Brown			940	980	
Sandstone, Lt Gray-Red			980	1060	
Shale, Red & Green			1060	1120	
Sandstone, White			1120	1145	
Shale			1145	1280	
Limestone, Lt Brn-Gry			1280	1325	
Sandstone, Gray			1325	1350	
Limestone, Lt Brown-White			1350	1480	360' Mg
Shale, Red, Red-Brown			1480	1570	
Limestone, Gray-Brown			1570	1640	
Sandstone, Gray-White			1640	1710	
Shale, Gray			1710	1740	Mp
Sandstone, Gray			1740	1800	
Shale, Red-Gray			1800	1980	
Sandstone, White-Gray			1980	2260	DHS
Shale, Red-Brown			2260	2320	
Sandstone, Gray			2320	2340	
Shale, Gray-Red			2340	2400	
Sandstone, Red			2400	2430	
Siltstone-Red-Brown			2430	2520	
Sandstone			2520	2560	
Shale, Gray-Green			2560	2710	
Sandstone, Gray-White			2710	2900	
Sandy Shale, Red-Brown			2900	3000	DF

(Attach separate sheets to complete as necessary)

Well Operator \_\_\_\_\_  
By \_\_\_\_\_  
Its \_\_\_\_\_

**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."

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

LOG

FORMATION	Color	Hard or Soft	Top Feet	Bottom Feet	Remarks
					Including indication of all fresh and salt water, coal, oil and gas
Ltstone			3000	3050	
ndstone, Gray			3050	3160	
ale, Gray-Red			3160	3210	
ndstone, Gray-White			3210	3320	
ale, Gray-White			3320	3460	
ndstone, Gray			3460	3540	
ale, Gray			3540	3820	
ndy Shale			3820	3960	
ale, Gray			3960	4250	
ltstone			4250	4270	
ndstone, Gray			4270	4380	
ltstone, Dk Gray			4380	4400	
ndstone, Gray			4400	4420	
le, Gray			4420	4450	
ndstone			4450	4470	
ltstone			4470	4530	
ndstone & Shale			4530	4660	
ltstone, Gray			4660	4730	
ndstone, Gray			4730	4780	
le, Gray w/Trace Sandstone			4780	4920	
le, Gray w/Trace Sandstone			4920	5400	
ndstone, Lt Gray			5400	5420	
le, Lt Med. Gray			5420	5600	
le, Black			5600	5700	
le, Lt Gray, Tr Sandstone			5700	5840	Horrell (?)
le, Lt Gray, White			5840	5980	
le w/trace Sandstone			5980	6060	
ty Shale, Med-Dk Gray			6060	6300	
le, Dark Gray			6300	6360	
ndstone & Shale, White Lt Gray			6360	6550	
le, Silty, Lt Gray-Black			6550	6760	
le, Lt Gray-Brown			6760	6820	
le, Dk Gray-Black			6820	6930	
le, Med-Dark Gray, Silty			6930	7060	
dy Shale			7060	7100	

(Attach separate sheets to complete as necessary)

Well Operator \_\_\_\_\_

By \_\_\_\_\_

Its \_\_\_\_\_

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."

AUG 31 1981

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
Shale, Gray w/Trace Sandstone			7100	7410	
Sandstone, White-Gray, Trace Shale			7410	7660	
Sandy Shale			7660	7690	
Shale, Silty, Gray-Black			7690	7880	
Shale, Gray-Black, Trace Sandstone			7880	8040	
Shale, Gray, Some Sandstone			8040	8220	
Shale, Gray			8220	8440	
Shale, Lt-Med Gray			8440	8760	
Shale, Gray-Black			8760	8860	
Sandstone			8860	8880	
Chert			8880	8960	thru ft. — Hunterville Chert
Shale, Gray-Black			8960	9000	
Sandstone, Gray-White			9000	9300	Dsr. — Oriskany
Sandstone, Dk Gray, Trace Shale			9300	9425	HDBE

(Attach separate sheets to complete as necessary)

Amoco Production Company

Well Operator

By J. F. Trickett

J. F. Trickett

Its District Superintendent

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."

[08-78]

OIL AND GAS WELL PERMIT APPLICATION

Operator's Well No. 1  
API Well No. 47 - 093 - 0051  
State County Permit

WELL TYPE: Oil      / Gas x /  
(If "Gas", Production x / Underground storage      / Deep x / Shallow      /)  
LOCATION: Elevation: 3463 Watershed: Red Run of Dry Fork  
District: Dry Fork County: Tucker Quadrangle: Mozark Mountain, W. VA.

WELL OPERATOR Amoco Production Company  
Address P. O. Box 1350  
Traverse City, MI 49684

DESIGNATED AGENT Gilbert S. Jamison  
Address Rt. 2, Box 525  
Parkersburg, W. VA 26101

OIL & GAS ROYALTY OWNER Bureau of Land Management  
U. S. Department of Interior  
Address 1725 K Street, N. W., Suite 204  
Washington, D.C. 22206  
Acreage 640

COAL OPERATOR None  
Address     

SURFACE OWNER same as royalty  
Address       
Acreage     

COAL OWNER(S) WITH DECLARATION ON RECORD:  
Name U. S. Dept. of Interior/Bureau of Land Mng.  
Address 1725 K Street, N.W., Suite 204  
Washington, D.C. 22206

FIELD SALE (IF MADE) TO:  
Name N/A  
Address     

Name       
Address     

OIL & GAS INSPECTOR TO BE NOTIFIED  
Name William Blosser  
Address P. O. Box 1028 Colfax, W. VA 26566  
(804) 363-9105

COAL LESSEE WITH DECLARATION ON RECORD:  
Name None  
Address     

**RECEIVED**  
AUG 14 1980

OIL & GAS DIVISION  
DEPT. OF MINES

The undersigned well operator is entitled to operate for oil or gas purposes at the above location under a deed      / lease X / other contract      / dated April 1, 19 79, to the undersigned well operator from U. S. Department of Interior/Bureau of Land Management.  
[If said deed, lease, or other contract has been recorded:] lease is in the process of being recorded and such recording information will be furnished as soon as it is available.  
Recorded on     , 19     , in the office of the Clerk of the County Commission of      County, West Virginia, 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.

**BLANKET BOND**

Amoco Production Company  
Well Operator  
BY J. F. Trickett  
J. F. Trickett  
District Superintendent

**RECEIVED**  
AUG 11 1979  
OIL & GAS DIVISION  
DEPT. OF MINES

PLEASE SUBMIT COPIES OF ALL GEOPHYSICAL LOGS DIRECTLY TO:  
WEST VIRGINIA OIL AND GAS CONSERVATION COMMISSION  
615 WASHINGTON STREET EAST  
CHARLESTON, WV 25311  
PHONE: (304) 264-2200

[08-78]

PROPOSED WORK ORDER

THIS IS AN ESTIMATE ONLY.  
ACTUAL INFORMATION MUST BE SUBMITTED ON FORM IV-2 UPON COMPLETION.

DRILLING CONTRACTOR (IF KNOWN) not known at this time

Address \_\_\_\_\_

GEOLOGICAL TARGET FORMATION, Helderberg Lms T.D. (Completion in ORISKANY) WRR

Estimated depth of completed well, 9500 feet Rotary  / Cable tools \_\_\_\_\_

Do not anticipate water, if encountered will be fresh at 1000 ft.

Approximate water strata depths: Fresh, 1000 feet; salt, \_\_\_\_\_ feet.

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

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	20"	PE-BFW	78#	X		75'	75'	Cir to surf	Kinds
Fresh water	13 3/8	K-55	54.5#	X		250'	250'	200 sacks	
Coal									Cases
Intermediate	9 5/8	K-55	36#	X		2000'	2000'	800 sacks	
Production	4 1/2	N-80	11.6#	X		9500'	9500'	600 sacks	Deaths set
Tubing	2 3/8	J-55	4.7#	X		9500'	9500'	N/A	
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 § 22-4-3a from the owner of any water well or drilling within 200 feet of the proposed well.

**THIS PERMIT MUST BE POSTED AT THE WELL SITE**

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 all provisions being in accordance with Chapter 22, in connection therewith.

of the W. Va. Code, the location is hereby approved for drilling. This permit shall expire if operations have not commenced by 4-18-81.

Fred B. Smith  
Deputy Director - Oil & Gas Division

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:

W A I V E R

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 \_\_\_\_\_



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

AFFIDAVIT OF PLUGGING AND FILLING WELL

WELL TYPE: Oil \_\_\_ / Gas X / Liquid Injection \_\_\_ / Waste Disposal \_\_\_ /  
(If "Gas", Production \_\_\_ / Underground storage \_\_\_ / Deep \_\_\_ / Shallow \_\_\_ /  
LOCATION: Elevation: 3463' Watershed: Red Run of Dry Fork  
District: Dry Fork County: Tucker Quadrangle: Mozark Mountain, W VA

WELL OPERATOR AMOGO PRODUCTION CO.  
Address P. O. Box 1350  
Traverse City, MI 49684

DESIGNATED AGENT Mr. Martin Root  
Address 128 S 2nd Street  
Clarksburg, W VA 26301

STATE OF WEST VIRGINIA, )  
COUNTY OF TUCKER ) SS:

and BYRON MATHNER,

being first duly sworn according to law, depose and say that they are experienced in the work of plugging and filling oil and gas wells; that they were employed by AMOCO PRODUCTION CO, the well operator, and participated in the work of plugging and filling the above well; that the work was commenced on JULY 7, 19 81, and completed on JULY 8, 19 81, in the following manner:

PERMITTED WORK: Plug and abandon X / Clean out and replug \_\_\_ /

PLUGGING MATERIALS

Type of Cement	Other Materials	Depth	Thickness
Class "A"		6200'	5940'
Class "A"		4275'	3600'
Class "A"		2500'	2300'
Class "A"		150'	Surface

Bridge Plugs Used--Type and Depth  
NONE

VENT PIPE YES

MISCELLANEOUS MATERIALS -

CASING LOST NONE

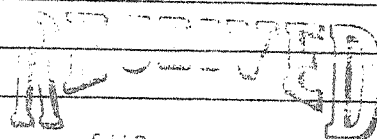
TYPE OF RIG:  
Owner: Well Op'r \_\_\_ / Contractor X /  
Rig time: 2 days plus \_\_\_ hours

COAL SEAMS (NAMES AND DEPTHS)

NONE

DESCRIPTION OF WELL MONUMENT

Pipe welded to casing with Amoco inscription.



OIL & GAS DIVISION  
DEPT. OF MINES

(SEAL)

(SEAL)

Subscribed and sworn to before me this  
12 day of August, 19 81.

My commission expires August 31, 19 81.

Mafine Underwood  
Notary Public