



RECEIVED

NOV 9 1984

- 1) Date: November 8, 1984
 2) Operator's Well No. Keeley #987
 3) API Well No. 47 - MMM 013 - 3850
 State County Permit

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

- OIL & GAS DIVISION
 DEPT. OF MINES
- 4) WELL TYPE: A - Oil / B (If "Gas", Production / Underground storage _____ / Deep _____ / Shallow /)
- 5) LOCATION: Elevation: 941.20' Watershed: Cook Run of Beech Fork
 District: Washington County: Calhoun Quadrangle: 7.5' Arnoldsburg
- 6) WELL OPERATOR Sterling Drilling & Prod. Co., Inc. DESIGNATED AGENT Harry L. Berger, Jr.
 Address 220 E. 42nd St. 33rd Floor Address 710 Virginia St., E.
New York, New York 10017 Charleston, W.V. 25301
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED Name Deo Mace Address Rt. 1 Box 5
Sandridge, W.V. 25274
- 9) DRILLING CONTRACTOR: Name UNKNOWN AT THIS TIME Address _____
- 10) PROPOSED WELL WORK: Drill / Drill deeper _____ / Redrill _____ / Stimulate /
 Plug off old formation _____ / Perforate new formation _____ /
 Other physical change in well (specify) _____
- 11) GEOLOGICAL TARGET FORMATION, BROWN SHALE
- 12) Estimated depth of completed well, 4900 feet
- 13) Approximate strata depths: Fresh, _____ feet; salt, _____ feet.
- 14) Approximate coal seam depths: 0 Is coal being mined in the area? Yes _____ / No /
- 15) 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									
Fresh water	9 5/8	LS	33#	X		300'	300'	To Surface	Kinds <u>NEAT</u>
Coal									Sizes
Intermediate	7"	J-55	20#	X		2200'	2200'	100 sks	Depths set
Production	4 1/2	ERW	10.5#	X			4900'	250 sks	Perforation <u>as required by rule 15.01</u>
Tubing									Top Bottom
Liners									

OFFICE USE ONLY
DRILLING PERMIT

Permit number 47-013-3850 Date December 7, 1984

This permit covering the well operator and well location shown below is evidence of permission granted to drill in accordance with the pertinent legal requirements subject to the conditions contained herein and on the reverse hereof. **Notification must be given to the District Oil and Gas Inspector, (Refer to No. 8) Prior to the construction of roads, locations and pits for any permitted work.** In addition, the well operator or his contractor shall notify the proper district oil and gas inspector 24 hours before actual permitted work has commenced.)

The permitted work is as described in the Notice and Application, plat, and reclamation plan, subject to any modifications and conditions specified on the reverse hereof.

Permit expires December 7, 1986 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <u>148</u>	Agent: <u>sc</u>	Plat: <u>MU</u>	Casing <u>bx</u>	Fee <u>8142</u>
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Margaret J. Hesse
 Administrator, Office of Oil and Gas

NOTE: Keep one copy of this permit posted at the drilling location.



RECEIVED

OFFICE USE ONLY

PERMIT MODIFICATIONS AND CONDITIONS (IF ANY) TO THE PROPOSED WELL WORK

Also

X

OFFICE USE ONLY

This part of Form IV-2(b) is to record the dates of certain occurrences and any follow-up inspections.

Date

Date(s)

Application received

Follow-up inspection(s)

Well work started

Completion of the drilling process

Well Record received

Reclamation completed

OTHER INSPECTIONS

Reason:

Reason:

148	8/17	Case	Plot	8/17
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IV-9
(Rev 8-81)

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NOV 9 1984

State of West Virginia
Department of Mines
Oil and Gas Division

DATE 6-8-84
WELL NO. Keeley # 987
API NO. 47 - 013 - 3850

OIL & GAS DIVISION
DEPT. OF MINES
CONSTRUCTION AND RECLAMATION PLAN

COMPANY NAME Sterling Drilling & Prod. CODESIGNATED AGENT Sterling Drilling & Prod.

Address 360 Madison Ave.-NY, NY 10017 Address c/o H.L. Berger - Chas., WV
Telephone (212) 682-0204 Telephone (304) 342-0121

LANDOWNER Thos. Murphy & Robin Carlson SOIL CONS. DISTRICT Little Kanawha SCD
Revegetation to be carried out by Sterling Drilling & Prod. Co.-H.L. Berger (Agent)

This plan has been reviewed by Little Kanawha SCD. All corrections and additions become a part of this plan: 6-18-84
(Date)

Garrett Newton
(SCD Agent)

ACCESS ROAD	LOCATION
Structure <u>Culvert</u> (A) Size <u>36"</u> Page Ref. Manual <u>2-8 Table 3</u>	Structure <u>Diversion Ditch</u> (1) Material <u>Earthen</u> Page Ref. Manual <u>2-12</u>
Structure <u>Drainage Ditches</u> (B) Location <u>Roadside</u> Page Ref. Manual <u>2-12</u>	Structure <u>Rip-Rap</u> (2) Material <u>Rock</u> Page Ref. Manual <u>2-9</u>
Structure <u>Cross Drains - pipe</u> (C) Spacing <u>11-15' - 200', 16-20' - 100'</u> Page Ref. Manual <u>2-8 Table 4</u>	Structure _____ (3) Material _____ Page Ref. Manual _____

All structures should be inspected regularly and repaired if necessary. All commercial timber is to be cut and stacked and all brush and small timber to be cut and removed from the site before dirt work begins.

REVEGETATION

Treatment Area I

Lime	<u>2</u>	Tons/acre
or correct to pH	<u>6.5</u>	
Fertilizer	<u>500</u>	lbs/acre
	<u>(10-20-20 or equivalent)</u>	
Mulch	<u>Hay or Straw</u>	<u>2</u> Tons/acre
Seed*	<u>Ky-31</u>	<u>40</u> lbs/acre
	<u>Ladino Clover</u>	<u>4</u> lbs/acre
		lbs/acre

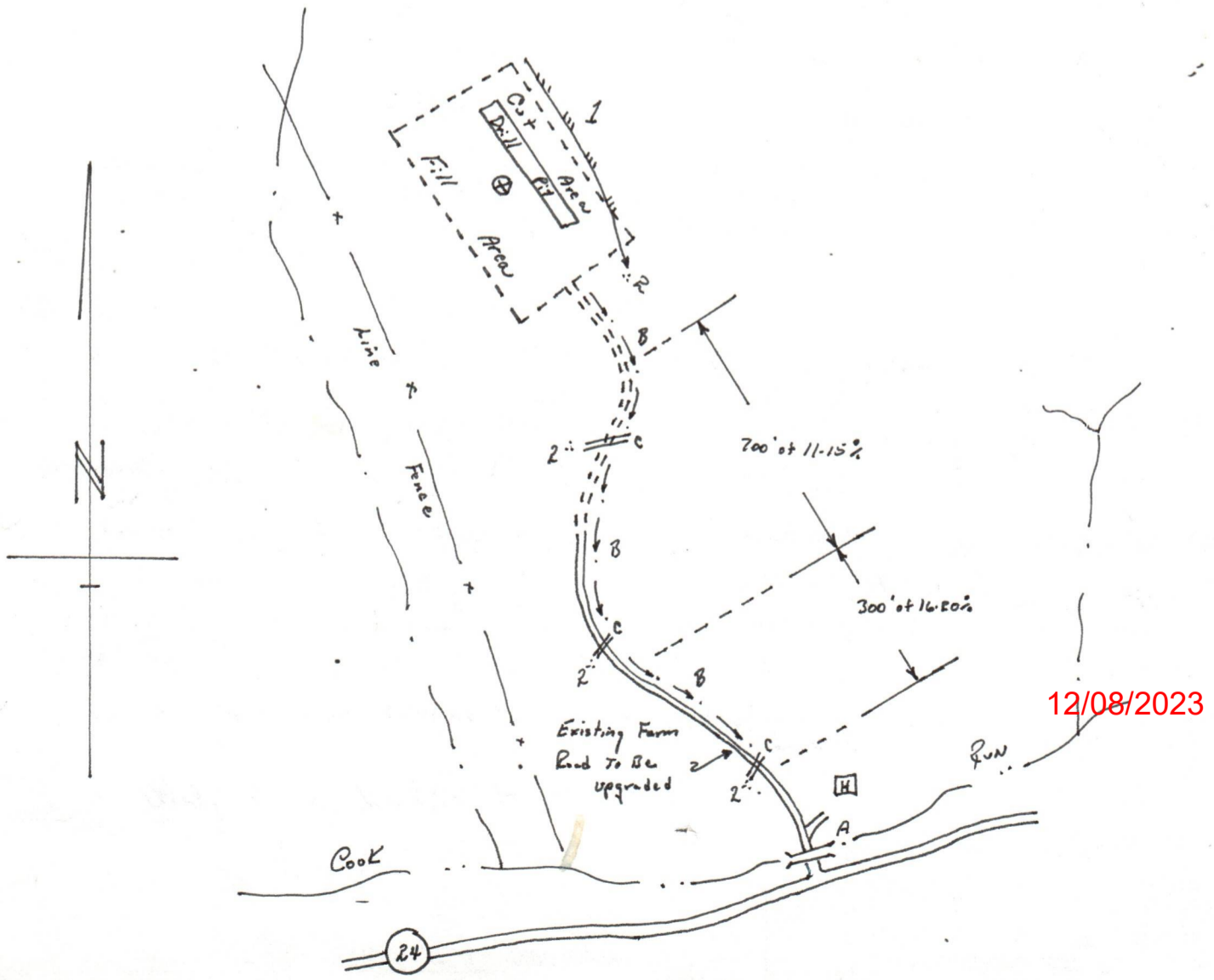
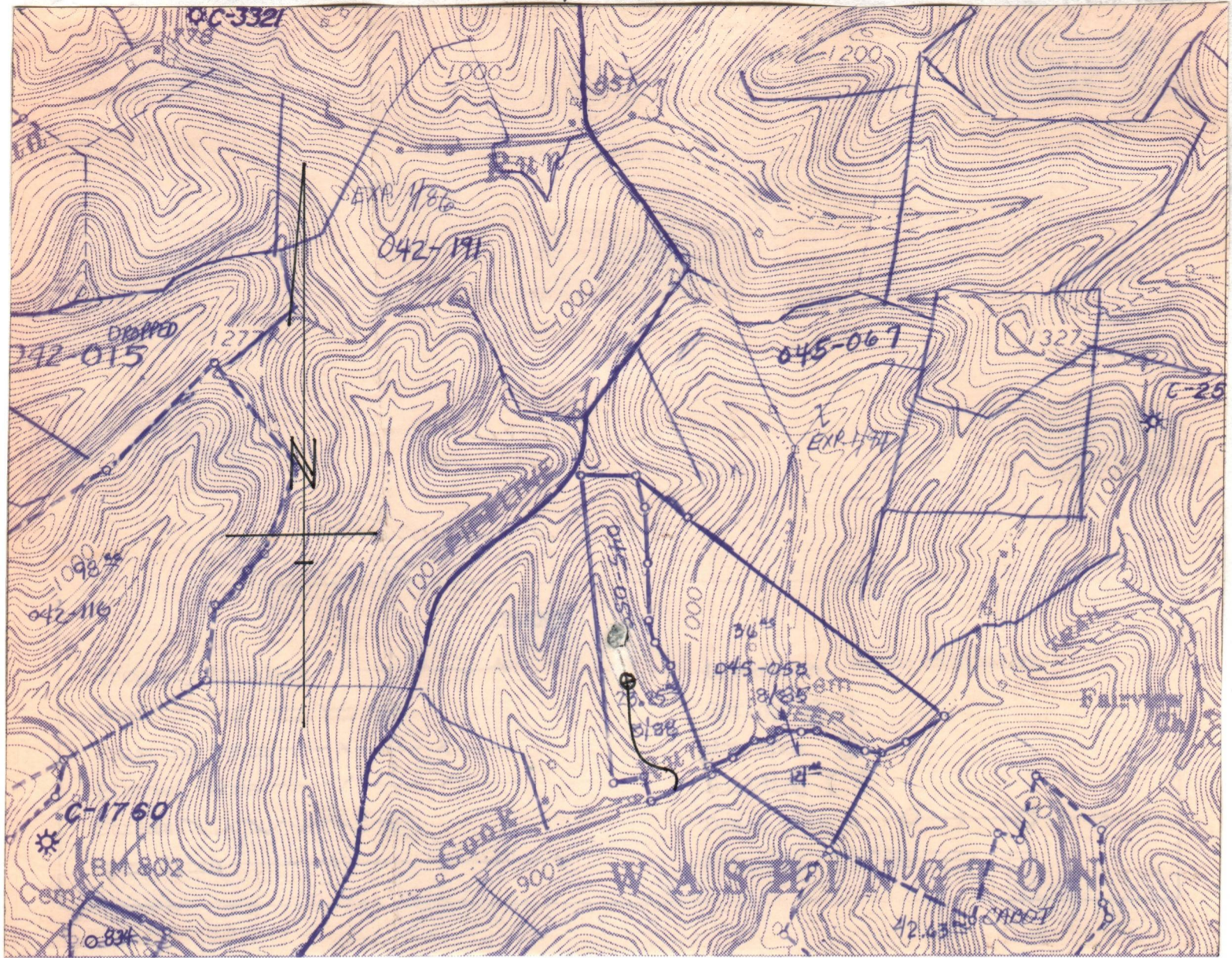
Treatment Area II

Lime	<u>2</u>	Tons/acre
or correct to pH	<u>6.5</u>	
Fertilizer	<u>500</u>	lbs/acre
	<u>(10-20-20 or equivalent)</u>	
Mulch	<u>Hay or Straw</u>	<u>2</u> Tons/acre
Seed*	<u>Ky-31</u>	<u>40</u> lbs/acre
	<u>Ladino Clover</u>	<u>4</u> lbs/acre
		lbs/acre

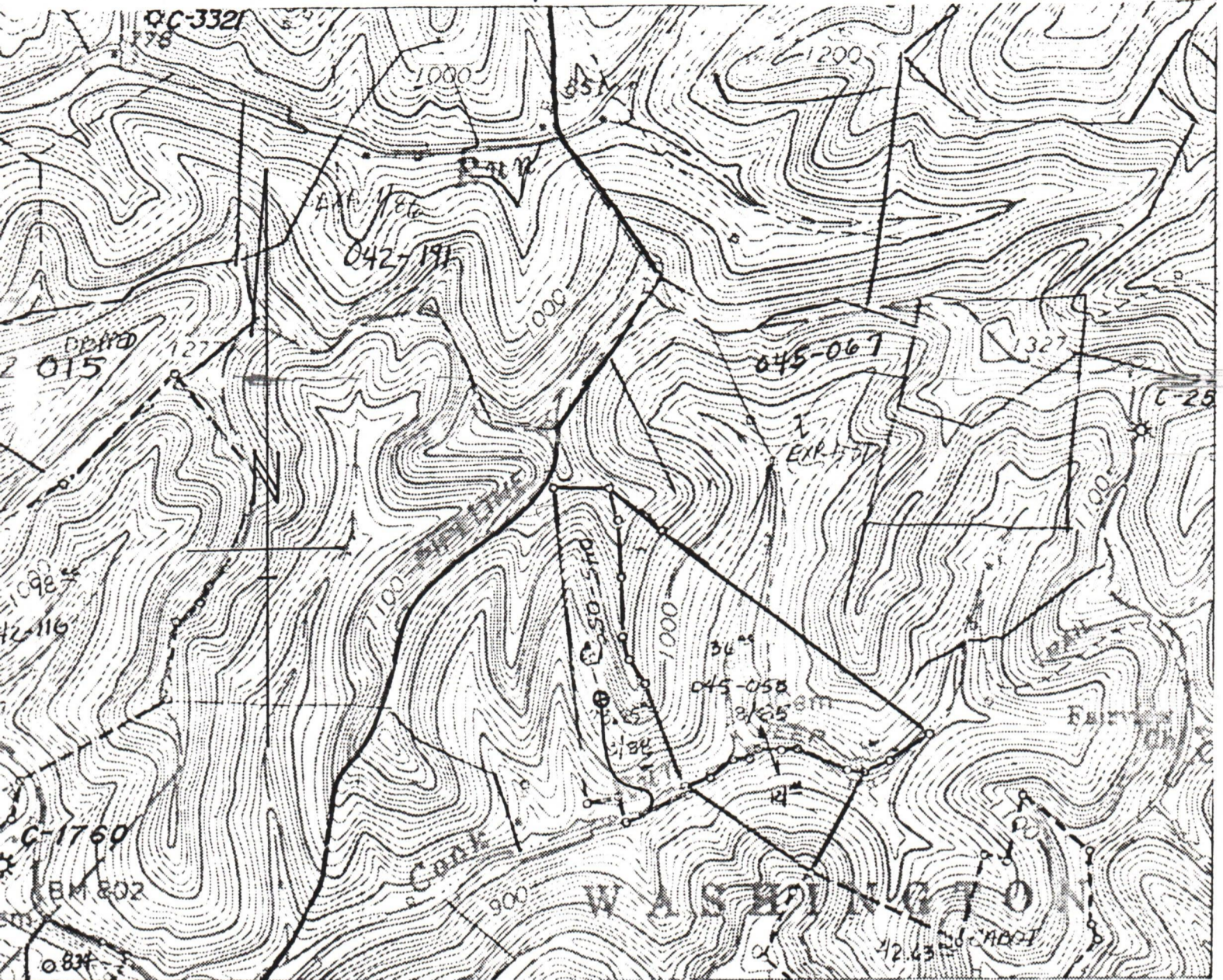
*Inoculate all legumes such as vetch, trefoil and clovers with the proper bacterium. Inoculate with 3X recommended amount. 12/08/2023

PLAN PREPARED BY Richard A. Campbell
ADDRESS Route 1, Box 30
Duck, WV 25063
PHONE NO. (304) 364-5780

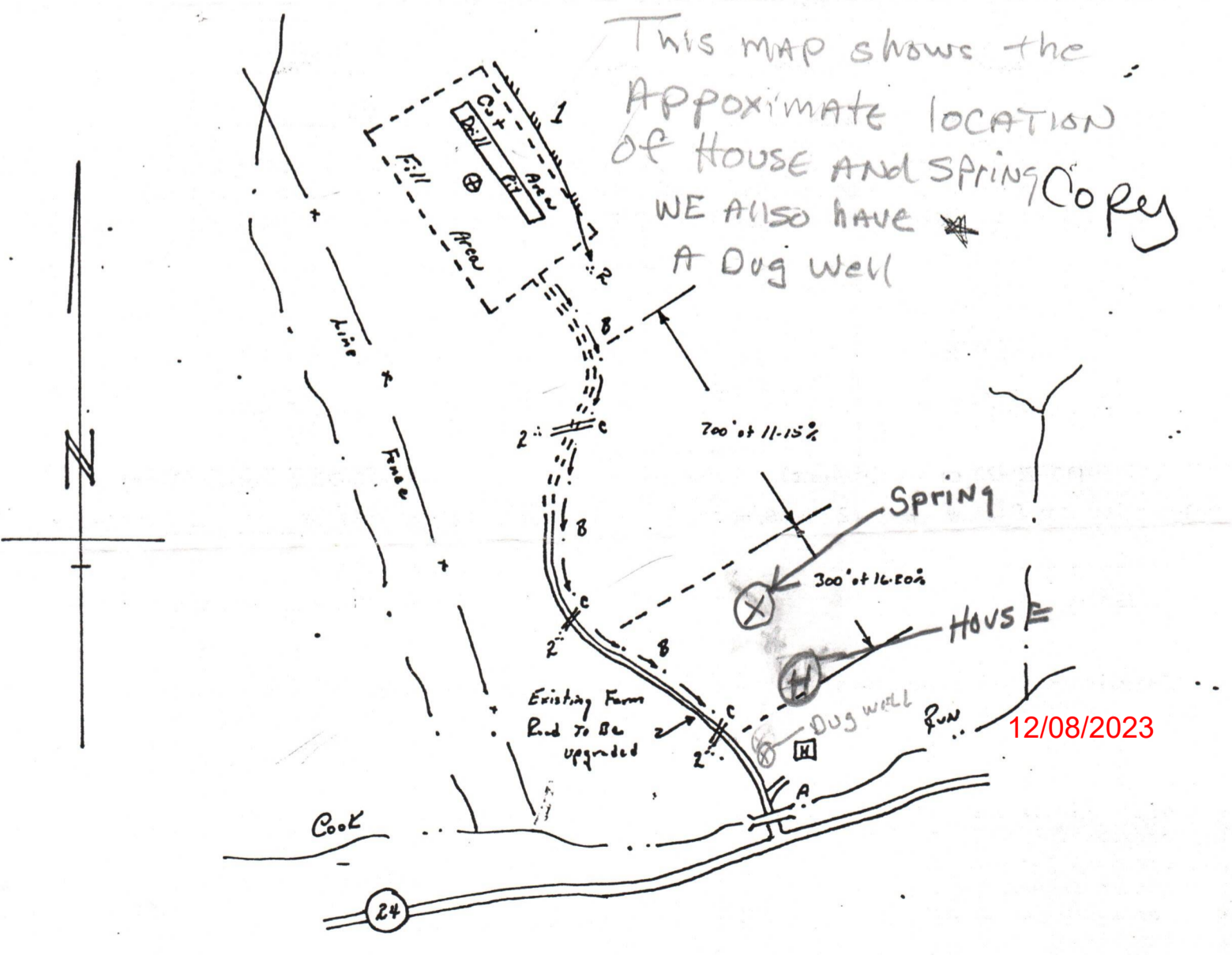
NOTES: Please request landowners' cooperation to protect new seedling for one growing season. Attach separate sheets as necessary for comments.



12/08/2023



This map shows the
 Approximate location
 of house and spring
 Corey
 We also have
 A Dug well



12/08/2023

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES, OFFICE OF OIL & GAS
NOTICE OF APPLICATION FOR A WELL WORK PERMIT

SURFACE OWNER(S) OF RECORD TO BE SERVED

5(i) COAL OPERATOR UNOPERATED
Address _____

(i) Name Thomas Murphy
Address Rt. 2
Minnora, W.V. 25263

5(ii) COAL OWNER(S) WITH DECLARATION ON RECORD:
Name _____
Address _____

ii) Name Robin Carlson
Address Same

Name _____
Address _____

ii) Name _____
Address _____

Name _____
Address _____

5(iii) COAL LESSEE WITH DECLARATION ON RECORD:
Name _____
Address _____

TO THE PERSON(S) NAMED ABOVE: You should have received this Form and the following documents:

- (1) The Application for a Well Work Permit on Form IV-2(B) (or Form IV-4 if the well is to be plugged, which sets out the parties involved in the drilling or other work, and describes the well and its location and, if applicable, the proposed casing and cementing program;
- (2) The plat (surveyor's map) showing the well location on Form IV-6; and
- (3) The Construction and Reclamation Plan on Form IV-9 (unless the well work is only to plug a well), which sets out the plan for erosion and sediment control and for reclamation for the site and access road.

THE REASON YOU RECEIVED THESE DOCUMENTS IS THAT YOU HAVE RIGHTS REGARDING THE APPLICATION WHICH ARE SUMMARIZED IN THE "INSTRUCTIONS" ON THE REVERSE SIDE OF THE COPY OF THE APPLICATION (FORM IV-2(B) OR FORM 4, DESIGNATED FOR YOU. HOWEVER, YOU ARE NOT REQUIRED TO TAKE ANY ACTION AT ALL.

Take notice that under Chapter 22 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a Well Work Permit with the Administrator of the Office of Oil and Gas, West Virginia Department of Mines, with respect to a well at the location described on attached Application and depicted on attached Form IV-6. Copies of this Notice, the Application, the plat, and the Construction and Reclamation Plan have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Administrator.

6) EXTRACTION RIGHTS

Check and provide one of the following:
 Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil or gas.
 The requirement of Code 22-4-1-(c) (1) through (4). (See reverse side for specifics.)

7) ROYALTY PROVISIONS

Is the right to extract, produce or market the oil or gas based upon a lease or leases or other contract or contracts providing for flat well royalty or any similar provision for compensation to the owner of the oil or gas in place which is not inherently related to the volume of oil or gas so extracted, produced or marketed? Yes No

If the answer above is No, nothing additional is needed. If the answer is Yes, you may use Affidavit Form IV-60.

See the reverse side for line item instructions, and for instructions concerning the required copies of the Notice and Application, plat, and Construction and Reclamation Plan.

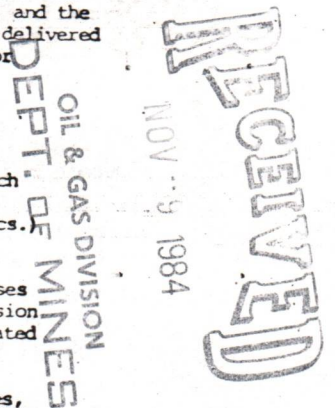
The truth of the information on the Notice and Application is verified and sworn to and the Notice is signed on behalf of the Well Operator in my County and State by
Harry L. Berger, Jr.

WELL OPERATOR Sterling Drilling & Prod. Co., Inc.

By Harry J. Berger
Its Designated Agent
Address 710 Virginia St., E.
Charleston, W.V. 25301
Telephone 342 - 0121

this 8 day of November, 1984.
My commission expires May 10, 1989.

Dawn M. Gillespie
Notary Public, Kanawha County,
State of West Virginia



12/08/2023

I N S T R U C T I O N S T O A P P L I C A N T

CONCERNING THE LINE ITEMS:

- 1) Date of Notice..
- 2) Your well name and number.
- 3) To be filled out by the Office of Oil & Gas.
- 4) & 5) Use separate sheet if necessary.
- 4) Surface owner(s) of record to be served with Notice and Application. However, see also Code § 22-4-1b(b) if "more than three tenants in common or other co-owners of interest described in subsection (a) of this section hold interests in such lands".
- 5(i) "Coal Operator" means any person, firm, partnership, partnership association or corporation that proposes to or does operate a coal mine.
- 5(ii, iii) See Code § 22-4-20.
- 6) See Code § 22-4-11(c). However, in lieu of filing the lease(s) or other continuing contract(s), the Applicant may fill out the information in the space provided below.
- 7) See Code § § 22-4-11(d, e).

CONCERNING THE REQUIRED COPIES FOR FILING AND SERVICE:

Filing. Code § 22-4-1k and Regulation 7.02 provide that the original and required copies of the Notice and Application must be filed with the Administrator, 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 § 22-4-1k(d) and the reclamation required by Code § 22-4-12b and Regulation 23, (iv) unless previously paid on the same well, the fees required by Code § 22-4-1a(c) and 22-3-12a, and (v) if applicable, the consent required by Code § 22-4-8a from the owner of any water well on dwelling within 200 feet of the proposed well.

Service. In addition, service must be made on the surface owner(s) and the person(s) with an interest in the coal. See Code § § 22-4-1m, 22-4-2, 22-4-2a, and 22-4-2b.

INFORMATION SUPPLIED UNDER CODE § 22-4-11(d)

IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)

Under the oath required to make the verification on the obverse side of this Notice, I depose and say that I am the person who signed the Notice for the Applicant, and that--

- (1) the tract of land is the same tract described in the Application to which this Notice applies, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

<u>Grantor, lessor, etc.</u>	<u>Grantee, lessee, etc.</u>	<u>Royalty</u>	<u>Book Page</u>
Martin A. Keeley 854 Mathias Ave. Massillon, Ohio 44646	Sterling Drilling and Production Co., Inc.	1/8	087/189

12/08/2023

PAGE 1

Thomas E. Murphy
Robin L. Carlson
RT. 2 Box 67
Minnora, WVa. 25263
SURFACE OWNERS

ADMINISTRATOR of the office of Oil & Gas
~~WEST~~ VIRGINIA DEPARTMENT OF MINES
1615 WASHINGTON STREET EAST
CHARLSTON, WVa 25311

RECEIVED
DEC 3 - 1984
OIL & GAS DIVISION
DEPT. OF MINES

DEAR SIRs

This letter is in regards to the
Application for A well work permit, THAT
STERLING DRILLING & PRO. CO. 220 E 42nd ST
33rd FLOOR, New York, N.Y. 10017 HAS FILED
with you ON Nov. 8, 1984., OPERATOR'S Well NO.
Keeley #987, WASHINGTON DISTRICT, CALHOUN CO
WVa. which we RECEIVED NOV. 13, 1984.

After REVIEWING THE APPLICATION
CAREFULLY, WE WISH TO GIVE OUR COMMENTS
AND CONCERNS ON THE CASING AND Tubing
Program. WE FEEL THAT THE $9\frac{5}{8}$ CASING
AT ONLY 300' FT. FAILS TO PROTECT THE
FRESH WATER SOURCES AND SUPPLIES ON
OUR LAND. WE DEPEND ON THE SPRING
APPROX. 150' FT. BEHIND OUR HOUSE WHICH

12/08/2023

RECEIVED

NOV 23 1923

DEPT. OF MINES

DEPT. OF MINES

GRAVITY FEEDS OUR HOME. WE HAVE NO ELECTRIC UP COOKS RUN, WHICH MAKES IT IMPOSSIBLE TO PUMP WATER INTO THE HOUSE. WE FEEL THAT STERLING SHOULD HAVE AT LEAST 400' FT. TO 500' FT OF 9⁵/₈" CASING, CEMENT FILL TO SURFACE WITH A GUARANTEE THAT DURING THE TIME THE CEMENT IS SETTING THAT THE DRILLERS WILL NOT BE RUNNING THEIR EQUIPMENT BACK DOWN THUS RISKING, CRACKING THE CEMENT AND CAUSING IT TO INADEQUATELY SET UP AND THUS FAIL TO PROTECT OUR FRESH WATER SUPPLY.

WE ARE ALSO CONCERNED ABOUT THE DAMAGE THE HEAVY EQUIPMENT WILL CAUSE STATE RT. (24) WHICH RUNS UP COOKS RUN, IT'S CONSIDERED A PRIMITIVE RD. HAS FEW IF ANY COLVERTS. STAYS WET MOST OF THE YEAR. THE RESIDENTS OF COOKS RUN HAVE WORKED HARD TO UP GRADE AND MAINTAIN THE ROAD. WE FEAR THE HEAVY EQUIPMENT WILL DAMAGE THE ROAD CONSIDERABLY, THUS CAUSING DAMAGE TO OUR VEHICLES AND ENDANGERING OUR LIVES, AND PROPERTY IN CASE OF FIRE AND MEDICAL EMERGENCIES.

The ROAD IS VERY NARROW AND SOFT IN MANY PLACES WHICH COULD CAUSE THE ROAD TO SLIP AND FAIL AWAY. WE WOULD LIKE ASSURANCE THAT THE ROAD WILL BE MAINTAINED AND PASSABLE. YOUR COOPERATION IN THIS MATTER WILL BE MUCH APPRECIATED.

YOURS TRULY
Thomas E. Pugh
Robin L. Carlson
SURFACE OWNER

P.S. WE WOULD LIKE A COPY OF THE SURFACE OWNERS MANUAL OUT LINEING OUR RIGHTS. WE DO HAVE A COPY OF THE WEST VIRGINIA DEPARTMENT OF MINES OIL AND GAS REGULATIONS AND LAWS

THANK YOU AGAIN

1027
 P 522 056 736
 RECEIPT FOR CERTIFIED MAIL
 NO INSURANCE COVERAGE PROVIDED—
 NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to	THOMAS MURPHY & RAIN CARLSON
Street and No.	RT 2
P.O., State and ZIP Code	MUNORA, W.V. 25263
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date	

PS Form 3800, Feb. 1982

1027
 P 522 056 739
 RECEIPT FOR CERTIFIED MAIL
 NO INSURANCE COVERAGE PROVIDED—
 NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to	DOROTHY C. TUFTS
Street and No.	775 LOST CREEK DR.
P.O., State and ZIP Code	KALISPELL, MONTANA 59901
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date	

PS Form 3800, Feb. 1982

1027
 P 522 056 737
 RECEIPT FOR CERTIFIED MAIL
 NO INSURANCE COVERAGE PROVIDED—
 NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to	F. F. McINTOSH
Street and No.	c/o ITT AVONICS
P.O., State and ZIP Code	500 WASHINGTON AVE. MUTKEY, N.J. 07110
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date	

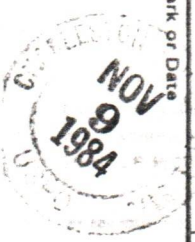
PS Form 3800, Feb. 1982

1027
 RECEIPT FOR CERTIFIED MAIL
 NO INSURANCE COVERAGE PROVIDED—
 NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to	DOROTHY C. TUFTS
Street and No.	775 LOST CREEK DR
P.O., State and ZIP Code	KALISPELL, MONTANA 59901
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date	

DEPT. OF MINES
 OIL & GAS DIVISION
 NOV 9 1984
 RECEIVED



2/08/2023

FERC



WR-35

Date October 17, 1985
Operator's
Well No. 987
Farm Keeley
API No. 47 - 013 - 3850

State of West Virginia
DEPARTMENT OF ENERGY
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 ___ / Shallow X /)

LOCATION: Elevation: 941.20' Watershed Cook Run of Beech Fork
District: Washington County Calhoun Quadrangle Arnoldsburg 7 1/2'

COMPANY Sterling Drilling & Production Co., Inc.

ADDRESS 710 Va. St. E., Charleston, WV 25301

DESIGNATED AGENT William E. Stover

ADDRESS 710 Va. St. E., Charleston, WV 25301

SURFACE OWNER Thomas Murphy

ADDRESS Rt. 2, Minnora, W.V. 25263

MINERAL RIGHTS OWNER Martin A. Keeley

ADDRESS 854 Mathias Ave., Massillon, Ohio 44646

OIL AND GAS INSPECTOR FOR THIS WORK Deo
Mace ADDRESS Rt. 1 Box 5
Sandridge, WV 25274

PERMIT ISSUED December 7, 1984

DRILLING COMMENCED February 12, 1985

DRILLING COMPLETED February 19, 1985

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

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.			
13-10"			
9 5/8	316'	316'	130 sks.
8 5/8			
7	2435'	2435'	180 sks.
5 1/2			
4 1/2		5085'	260 sks.
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Devonian Shale Depth 4900' feet

Depth of completed well 5127'KB feet Rotary X / Cable Tools _____

Water strata depth: Fresh 170-175 feet; Salt ^{not} reported _____ feet

Coal seam depths: None Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation Devonian Shale Pay zone depth 3872'-4440' feet

Gas: Initial open flow show Mcf/d Oil: Initial open flow _____ Bbl/d

Final open flow 202 Mcf/d Final open flow _____ Bbl/d

Time of open flow between initial and final tests 19 hours

Static rock pressure 720 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

(Continue on reverse side)

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

PERFORATIONS

1st Stage: 7/8/85 23 holes 3974'-4440'

2nd Stage: 7/10/85 21 holes 3490'-3872'

TREATMENT

1st Stage: 7/4/85 750 gals. 15% HCl; 1,440 MSCF N₂

2nd Stage: 7/12/85 750 gals. 15% HCl; 1,440 MSCF N₂

WELL LOG

Keeley # 987

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
Siltstone and Shale			0	871	All depths from 10' KB Fresh water @ 170'-175'
Sandstone			871	953	
Shale			953	1013	
Sandstone			1013	1204	
Siltstone and Shale			1204	1600	
Sandstone			1600	1630	
Shale			1630	1710	
Salt Sand			1710	1761	
Shale			1761	1782	
Salt Sand			1782	1856	
Shale			1856	1863	
Little Lime			1863	1886	
Pencil Cave			1886	1892	
Big Lime			1892	2056	
Big Injun			2056	2070	
Shale			2070	2074	
Squaw			2074	2081	
Silty Shale			2081	2391	
Sunbury Shale			2391	2406	
Siltstone and Shale			2406	2721	
Gordon			2721	2751	
Shale			2751	4755	Top of Java Formation @ 4585'
Benson			4755	4790	
Shale			4790	4934	Top of Angola Shale @ 4806'
Alexander			4934	5003	
Shale			5003	5127	
Total Depth				5127	

(Attach separate sheets as necessary)

Sterling Drilling & Production Co., Inc.

Well Operator

By: William E. Stover

12/08/2023

Date: _____

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."

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

RECEIVED
FEB 21 1985

OIL & GAS DIVISION

INSPECTOR'S WELL REPORT

DEPT. OF MINES

Permit No. 13-3850

Oil or Gas Well _____
(KIND)

Company Sterling

Address _____

Farm Keeley

Well No. 987

District Wash. County Cal

Drilling commenced 2-12-85

Drilling completed _____ Total depth _____

Date shot _____ Depth of shot _____

Initial open flow _____ /10ths Water in _____ Inch

Open flow after tubing _____ /10ths Merc. in _____ Inch

Volume _____ Cu. Ft.

Rock pressure _____ lbs. _____ hrs.

Oil _____ bbls., 1st 24 hrs.

Fresh water _____ feet _____ feet

Salt water _____ feet _____ feet

CASING AND TUBING	USED IN DRILLING	LEFT IN WELL	PACKERS
Size			
16			Kind of Packer _____
13			
10			Size of _____
8 1/4			
6 3/8			Depth set _____
5 3/16			
3			Perf. top _____
2			Perf. bottom _____
Liners Used			Perf. top _____
			Perf. bottom _____

CASING CEMENTED _____ SIZE _____ No. FT. _____ Date _____

NAME OF SERVICE COMPANY _____

COAL WAS ENCOUNTERED AT _____ FEET _____ INCHES

_____ FEET _____ INCHES _____ FEET _____ INCHES

_____ FEET _____ INCHES _____ FEET _____ INCHES

Drillers' Names C. Moore 2

Remarks:
316' of 9 5/8" casing, 130 S&S cement, Dow, 2-13-85
Cement circulated

2-13-85
DATE

W.W. Moore 12/08/2023
DISTRICT WELL INSPECTOR

Form 26
2/16/82

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

INSPECTOR'S PLUGGING REPORT

Permit No. _____

Well No. _____

COMPANY _____ ADDRESS _____

FARM _____ DISTRICT _____ COUNTY _____

Filling Material Used _____

Liner		Location		Amount	Packer	Location		
PLUGS USED AND DEPTH PLACED				BRIDGES		CASING AND TUBING		
CEMENT-THICKNESS	WOOD-SIZE	LEAD	CONSTRUCTION-LOCATION		RECOVERED	SIZE	LOST	

Drillers' Names _____

Remarks: _____

DATE I hereby certify I visited the above well on this date.

12/08/2023
DISTRICT WELL INSPECTOR

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

RECORDED
DEPARTMENT OF ENERGY
OIL AND GAS

INSPECTOR'S WELL REPORT

APR 15 1986

Permit No. 13-3850

12-7-84

Oil or Gas Well _____
(KIND)

Company <u>Sterling O & P</u>	CASING AND TUBING	USED IN DRILLING	LEFT IN WELL	PACKERS
Address _____	Size			
Farm <u>J. Murphy</u>	16			Kind of Packer _____
Well No. <u>Kesley 987</u>	13			
District <u>Wash.</u> County <u>Cal.</u>	10			Size of _____
Drilling commenced _____	8 1/4			
Drilling completed _____ Total depth _____	6 1/2			Depth set _____
Date shot _____ Depth of shot _____	5 3/16			
Initial open flow _____ /10ths Water in _____ Inch	3			Perf. top _____
Open flow after tubing _____ /10ths Merc. in _____ Inch	2			Perf. bottom _____
Volume _____ Cu. Ft.	Liners Used			Perf. top _____
Rock pressure _____ lbs. _____ hrs.				Perf. bottom _____
Oil _____ bbls., 1st 24 hrs.	CASING CEMENTED _____ SIZE _____ No. FT. _____ Date _____			
Fresh water _____ feet _____ feet	NAME OF SERVICE COMPANY _____			
Salt water _____ feet _____ feet	COAL WAS ENCOUNTERED AT _____ FEET _____ INCHES			
	_____ FEET _____ INCHES _____ FEET _____ INCHES			
	_____ FEET _____ INCHES _____ FEET _____ INCHES			

Drillers' Names _____

Remarks:

Release Reclamation

4-12-86

4-12-86

DATE

W. S. M. [Signature]

DISTRICT WELL INSPECTOR

12/08/2023

FORM 26
2/16/82

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS WELLS DIVISION
INSPECTOR'S PLUGGING REPORT

Permit No. _____

Well No. _____

COMPANY _____ ADDRESS _____

FARM _____ DISTRICT _____ COUNTY _____

Filling Material Used _____

Liner		Location		Amount	Packer	Location		
PLUGS USED AND DEPTH PLACED			BRIDGES			CASING AND TUBING		
CEMENT-THICKNESS	WOOD-SIZE	LEAD	CONSTRUCTION-LOCATION		RECOVERED	SIZE	LOST	

Drillers' Names _____

Remarks: _____

DATE I hereby certify I visited the above well on this date.

12/08/2023
DISTRICT WELL INSPECTOR

**APPLICATION FOR DETERMINATION OF THE MAXIMUM LAWFUL
PRICE UNDER THE NATURAL GAS POLICY ACT (NGPA)**

RECEIVED
OCT 22 1985
DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

1.0 API well number:
(If not assigned, leave blank. 14 digits.)

47 - 013 - 3850

2.0 Type of determination being sought:
(Use the code found on the front
of this form.)

107
Section of NGPA

3.0 Depth of the deepest completion
location: (Only needed if sections 103
or 107 in 2.0 above.)

5127

4.0 Name, address and code number of
applicant: (25 letters per line
maximum. If code number not
available, leave blank.)

Sterling Drilling and Production Co. Inc. 018084
Name Seller Code
710 Virginia St. East, Arcade Building
Street
Charleston, WV 25301
City State Zip Code

5.0 Location of this well: (Complete (a)
or (b).)
(a) For onshore wells
(25 letters maximum for field
name.)

Washington
Field Name
Calhoun
County State WV

(b) For OCS wells:

Area Name Block Number

Date of Lease:
Mo. Day Yr. OCS Lease Number

(c) Name and identification number
of this well: (25 letters and digits
maximum.)

* Keely #987

(d) If code 4 or 5 in 2.0 above, name
of the reservoir: (25 letters
maximum.)

6.0 (a) Name and code number of the
purchaser: (25 letters and digits
maximum. If code number not
available, leave blank.)

Brooklyn Union Gas
Name Buyer Code

(b) Date of the contract:

Mo. Day Yr.

(c) Estimated total annual production
from the well:

6.06 Million Cubic Feet

	(a) Base Price	(b) Tax	(c) All Other Prices (Indicate (+) or (-))	(d) Total of (a), (b) and (c)
7.0 Contract price: (As of filing date. Complete to 3 decimal places.)	S/MMBTU 6.076	-----	-----	-----
8.0 Maximum lawful rate: (As of filing date. Complete to 3 decimal places.)	S/MMBTU 6.076	-----	-----	-----

9.0 Person responsible for this application:

Agency Use Only

Date Received by DHEC **OCT 22 1985**

Date Received by FERC

William E. Stover Designated Agent
Name Title
William E. Stover
Signature
October 18, 1985
Date Application is Completed 304-342-0121
Phone Number

12/08/2023

DEPARTMENT OF ENERGY, OIL AND GAS DIVISION

COVER SHEET, STATE APPLICATION FOR WELL CLASSIFICATION

NOV 15 1985

Date: October 18, 19 85

AGENCY USE ONLY

47550

Applicant's Name: Sterling Drilling & Production Co.

Inc. WELL DETERMINATION FILE NUMBER

Address: 710 Virginia St., E., Arcade Bldg.
Charleston, WV 25301

851022-1073-013-3850

Gas Purchaser Contract No. _____

Use Above File Number on all
Communications Relating to This Well

Date of Contract _____
(Month, day and year)

SDP # 987

First Purchaser: Brooklyn Union Gas

P630

Designated Agent: William E. Stover

Address: 195 Montague Street
(Street or P.O. Box)
Brooklyn, NY 11201
(City) (State) (Zip Code)

Address: 710 Virginia St., E, Arcade Bldg.
Charleston, WV 25301

FERC Seller Code _____

FERC Buyer Code _____

NAME AND TITLE OF PERSON TO WHOM QUESTIONS CONCERNING THIS APPLICATION SHALL BE ADDRESSED:

Name: William E. Stover
(Print)

Vice President/Drilling Supervi
(Title)

Signature: *William E. Stover*

Address: 710 Virginia St., E., Arcade Bldg.
(Street or P.O. box)
Charleston, WV 25301
(City) (State) (Zip Code)

Telephone: (304) 342-0121
(Area Code) (Phone Number)

(Certificate of Proof of Service to Purchaser)

NGPA Category Applied For

NGPA SECTION/SUBSECTION

- 102 New Natural Gas
- 102-2 2.5 Mile Test
- 102-3 1000 Foot Deeper Test
- 102-4 New Onshore Reservoir

- 108 Stripper Well Natural Gas
- 108- Stripper Well
- 108-1 Seasonally Affected
- 108-2 Enhanced Recovery
- 108-3 Temporary Pressure Buildu

- 103 New Onshore Production Well
- 103 New Onshore Production Well

- 107 High Cost Natural Gas
- 107-0 Deep (more than 15,000 feet)
- 107-1 Geopressured Brine
- 107-2 Coal Seams
- x 107-3 Devonian Shale
- 107-5 Production enhancement
- 107-6 New Tight Formation
- 107-7 Recompletion Tight Formation

AGENCY USE ONLY

QUALIFIED

12/08/2023

RECEIVED
OCT 22 1985

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

Date Received

Determination Date

APPLICATION FOR DETERMINATION OF THE MAXIMUM LAWFUL
PRICE UNDER THE NATURAL GAS POLICY ACT

Operator: Sterling Drilling & Production Co. Agent: William E. Stover

Type Determination being sought - 107 (Devonian Shale)

API Well No.: 47-013-3850 Well Name: Keely (987)

West Virginia Office of Oil and Gas County: Calhoun

References: SJA File No.

Vol. Page Line

I. NOTE: A Gamma Ray Log has been marked with the (a) Shale Base Line, (b) a line representing 0.7 x (Shale Base Line), (c) intervals with Gamma Ray units less than 0.7 x (Shale Base Line) and that log is included with this analysis.

II. Gamma Ray elevation indices:

A. Shale Base Line (API Units)

1. GR Value at Base Line = 160 * API Units
2. Remarks:

Note: Behind casing and cement (2406' - 2447')
Shale Base Line shifts to 122 API Units.

B. Gamma Ray Log Value at 0.7 x Value at Base Line

1. GR Value = 112 * API Units
2. Calculation: $\frac{0.7 \text{ (GR Value at Base Line)}}{0.7 \text{ (} \underline{160} \text{ *)}} = \underline{112} API Units
 $\frac{0.7 \text{ (122*)}}{0.7 \text{ (} \underline{160} \text{ *)}} = \underline{85} API Units$$

III. Intervals with GR index less than 0.7 x (Value at Base Line):

<u>Interval</u>		<u>Thickness of Interval Feet</u>	<u>Feet of less than* 0.7 (Shale Base Line) Feet</u>
<u>From**</u>	<u>To***</u>		
2406	5100	2694	94

Total Devonian Interval 2694

Total Less Than 0.7 (Shale Base) 94

% Less Than 0.7 (Shale Base Line) = $\frac{0.0348}{1} \times 100 = \underline{\underline{3.4}}\%$

*Marked on log included with analysis.

**Top of Devonian Section Recorded on First Interval in this Column.

***Lesser of TD or Bottom of Devonian Section Recorded as last Interval in this Column.

12/08/2023

DEPARTMENT OF ENERGY, OIL AND GAS DIVISION

Operator's Well No. 987

API Well No. 47 - 013 - 3850
State County Permit

WELL CLASSIFICATION FORM

HIGH COST GAS WELL - DEVONIAN SHALE

NGPA Section 107

DESIGNATED AGENT William E. Stover

ADDRESS 710 Virginia St., E., Arcade Bldg.
Charleston, WV 25301

LOCATION Elevation 941.2'

WELL OPERATOR Sterling Drilling & Prod. Co., Inc. Watershed Cook Run of Beech Fork

ADDRESS 710 Virginia St., E., Arcade Bldg. Dist. Washington County Calhoun Quad. Arnoldsbu
Charleston, WV 25301

Gas Purchase Contract No. _____

GAS PURCHASER Brooklyn Union Gas Meter Chart Code _____

ADDRESS 195 Montague Street Date of Contract _____

Brooklyn, Ny 11201

* * * * *

Date surface drilling began: February 12, 1985

Indicate the bottom hole pressure of the well and explain how this was calculated.

Bottom Hole Pressure. PSIA -- Pf = Pwe XLGS

$$t = 60 + (0.0075 \times 5127) + 459.67 = 558.12 \text{ . } X = \frac{1}{53.34} / \frac{558.12}{0.00003359} = 0.00003359$$

$$Pf \text{ } 720 \text{ } \times 2.7183 \text{ } 0.00003359 \text{ } \times 0.690 \text{ } \times 1.08 \text{ } \times 4156 = 798.9 \text{ } \text{PSI}$$

AFFIDAVIT

I, William E. Stover, having been first sworn according to law, state that I have calculated the percentage of footage of the producing interval which is not Devonian Shale as indicated by a Gamma Ray index of less than 0.7 if a Gamma Ray log described in subparagraph (3)(i) or (3)(ii)(A) has been filed, or as indicated by the report described in subparagraph (3)(ii)(B); I have demonstrated that the percentage of potentially disqualifying non-shale footage is equal to or less than five (5) percent of the gross Devonian age interval; and I have no knowledge of any information not described in the application which is inconsistent with a conclusion that the well qualifies as a high-cost natural gas well.

William E. Stover

STATE OF WEST VIRGINIA

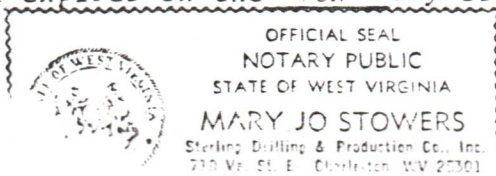
COUNTY OF Kanawha, TO-WIT:

I, Mary Jo Stowers, a Notary Public in and for the state and county aforesaid, do certify that William E. Stover, whose name is signed to the writing above, bearing date the 18th day of October, 1912/08/2023, acknowledged the same before me, in my county aforesaid.

Given under my hand and official seal this 18th day of October, 1985.

My term of office expires on the 7th day of August, 1995.

(NOTARIAL SEAL)



Mary Jo Stowers
Notary Public

Dear Thomas E. Murphy and Robin L. Carlson.

Thank you for writing in regard to Sterling Drilling and Production Company's well work application for their well number ⁹⁸⁷ ~~987~~.

After a careful review ~~of that~~ ^{of your} area we judge that Sterling's casing program with a 300' fresh water casing should be ample. If you know of water wells, ^{deeper than 250'} at comparable elevations in your immediate neighborhood please advise us.

By Administrative Regulation 15.04 (see page 130 of 2VU Dept of Mines Oil & Gas Reg's & Laws) requires that all cement be allowed to set to a minimum compressive strength of 500 psi (pounds per square inch), and that the minimum waiting time shall be eight (8). That means NO DOWNHOLE ACTIVITIES for AT LEAST 8 hours or until 500 PSI is achieved whichever is longer.

We sympathize with your concern for your road also, and I urge you to call your local Department of Highway Office as ~~we~~ they have jurisdiction over the road.

12/08/2023

I am sending ~~to~~ copying your letter to Cathryn Dally, Stirling Holdings, and to our inspectors who may, so that all these parties may be fully aware of your concerns, and can cooperate to avoid any problems.

Also, enclosed is a copy of our

Surveyor owners manual, Real Property

and a copy of the permit to Kelly #987

for you to call. You may be of further assistance

Sincerely,

msw
JES

348-0138

enc.

2 copies: Des M

Stirling

at:

Cathryn Dally, Attention: Richard Kelly

Grand Antea office located 1, D.O.H.

1334 Smith



State of West Virginia
Department of Mines
Oil and Gas Division
Charleston 25305

WALTER N. MILLER
DIRECTOR

THEODORE M. STREIT
ADMINISTRATOR

December 7, 1984

Thomas E Murphy
Robin L Carlson
Route 2, Box 67
Minnora, West Virginia 25263

Dear Thomas E Murphy & Robin L Carlson:

Thank you for writing in regard to Sterling Drilling & Production Company's well work application for their well number Keeley 987.

After a careful review of your area we judge that Sterling's casing program with a 300 foot fresh water casing should be ample. If you know of water wells deeper than 250 feet at comparable elevations in your immediate neighborhood please advise us.

Administrative Regulation 15.04 (see page 130 of WV Dept of Mines Oil & Gas Reg's & Laws) requires that all cement be allowed to set to a minimum compressive strength of 500 psi (pounds per square inch), and that the **minimum** waiting time shall be eight (8) hours. That means **no downhole activities** for at least 8 hours or until 500 psi is achieved whichever is longer.

We sympathize with your concern for your road also, and I urge you to call your local Department of Highways office as they have jurisdiction over the road.

I am sending copies of your letter to Calhoun D.O.H., Sterling Drilling, and our inspector, Deo Mace, so that all these parties may be fully aware of your concerns, and can cooperate to avoid any problems.

Also enclosed is a copy of our surface owners' manual "Real Property: Questions and Answers on West Virginia's Surface Owners Rights Bill - Oil & Gas" and a copy of the permit for Keeley #987.

If I may be of further assistance feel free to call.

Sincerely,

Margaret T Hasse
Margaret T Hasse
Petroleum Engineering Specialist
Tel: 348-0138

Encl: as stated

12/08/2023

177W 11/24/84

15' LATITUDE 38°50'

7 1/2' LATITUDE 38°47'30"

7 1/2' LONGITUDE 81°07'30"

15' LONGITUDE 81°06'

13,450'

J. L. ROCO JR. ET. AL LOG. COR.

N12°W - 231' DEED
CALL CHES.

NORTH - 374.98' DEED

CALL SARVIS

N2°E - 388.10' DEED

SM. PINE IN FEN. COR. CALL PINE

N15°00'W - 160.58' DEED @

N10°24'W - 162.72 MAG.

W.O. COR.

N24°30'W - 187.48' DEED

CALL NY.

MARTIN A. KEELEY, ET. AL.

23.25°

G. L. CABOT

S26°03'W - 509.30'

PROPOSED LOCATION

N42°54'E - 395.05'

RVA

D. GREATHOUSE

MARK KAZOR

COOK

X FORKS OF RD.
EL. 748'

MAGNETIC NORTH

REFERENCE POINTS

PROPOSED LOCATION TO:

8" NY. = S42°33'E - 123.76'

8" BCH. = N11°13'W - 181.94'

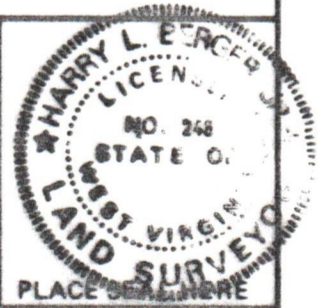


7 1/2' TOPO LOCATION

N. B. N-26, PG. 72

FILE NO. 042-059
MAP NO. 58-0
SCALE 1" = 1000'
MINIMUM DEGREE OF ACCURACY 1:200
PROVEN SOURCE OF ELEVATION U.S.G.S. DATA FKS. RD. SHOWN EL. 748'

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) Harry L. Berger, Jr.
HARRY L. BERGER, JR. L.L.S. 248



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FORM IV-6 (8-78)



DATE NOV. 2, 1984
OPERATOR'S WELL NO. 997
API WELL NO. 47-013-3850
STATE COUNTY PERMIT

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS,") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
LOCATION: ELEVATION 941.20' WATER SHED COOK RUN OF BEECH FORK
DISTRICT WASHINGTON COUNTY CALHOUN
QUADRANGLE 7 1/2' ARNOLDSBURG (ARNOLDSBURG S.W.)
SURFACE OWNER THOS. MURPHY & ROBIN CARLSON ACREAGE 23.25
OIL & GAS ROYALTY OWNER MARTIN A. KEELEY ET. AL. LEASE ACREAGE 23.25 12/08/2023
LEASE NO. 045-059

PROPOSED WORK: DRILL X 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 BROWN SHALE ESTIMATED DEPTH 4900'
OPERATOR STERLING DRILLING & PRODUCTION CO. INC. AGENT HARRY L. BERGER
ADDRESS 360 MADISON AVE. - 5TH FLOOR ADDRESS 710 VIRGINIA ST. E
NEW YORK, N.Y. 10017 CHARLESTON, WV 25301