

MN 8-15-85

7350'

CODE WELL REFERENCE TIES

CARD

PLOT



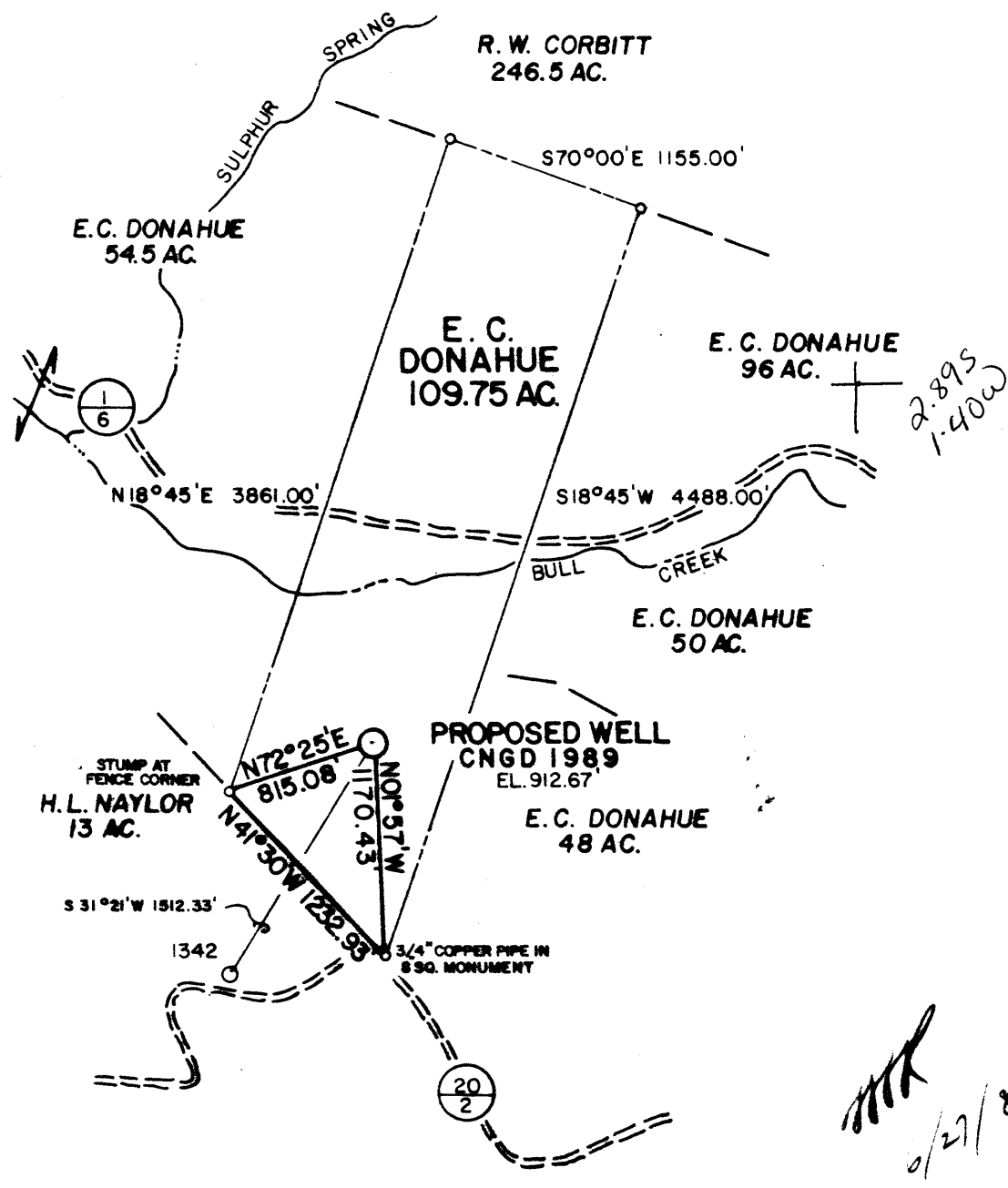
LATITUDE 39°17'30"
39° 20'

0.015
1.40W

CNGD 1989 TO A 4" BLACK WALNUT S67°31'W 211.36'
CNGD 1989 TO A 7" WHITE ASH S63°25'W 208.25'

NORTH

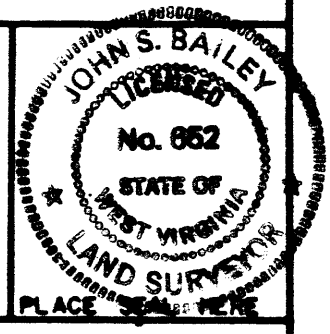
LONGITUDE 81°15'00"



2.895
1.40W
6/27/85

FILE NO. MSES 85-661
DRAWN BY RVS/JSB
SCALE 1"=1000'
MINIMUM DEGREE OF ACCURACY 1/1N 200
PROVEN SOURCE OF ELEVATION EL. 731' JCT. OF CO. RT 20/2 & RT. 20

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) John S. Bailey
C. P. E. _____ L. L. S. 652



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



DATE JUNE 11, 19 85
OPERATOR'S WELL NO. CNGD 1989
API WELL NO. 47-107-1374
STATE COUNTY PERMIT

Department of Mines
Oil & Gas Division

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS", PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X)
LOCATION: ELEVATION 912.67' WATER SHED BULL CREEK
DISTRICT WALKER 9 COUNTY WOOD
QUADRANGLE WILLOW ISLAND 7.5' 686 073 SE 9 Marietta
SURFACE OWNER ERNIE C. DONAHUE ET. UX. ACRES 109.75
OIL & GAS ROYALTY OWNER ERNIE C. DONAHUE ET. AL. LEASE ACRES 109.75
LEASE NO. DV-486
PROPOSED WORK: DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___ PLUS OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) ___

PLUS AND ABANDON ___ CLEAN' OUT AND REPLUG ___
TARGET FORMATION DEVONIAN SHALE ESTIMATED DEPTH 4500' AUG 26 1985
WELL OPERATOR CNG DEVELOPMENT COMPANY DESIGNATED AGENT GARY A. NICHOLAS
ADDRESS ONE PARK RIDGE CENTER ADDRESS CROSSWIND CORPORATE PARK
142 P.O. BOX 15746 ROUTE 2 BOX 698
PITTSBURGH, PA. 15244 BRIDGEPORT, W.V. 26330

IV-35
(Rev 8-81)

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NOV 4 1985

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY



State of West Virginia
Department of Mines
Oil and Gas Division

Date October 21, 1985

Operator's Well No. CNGD WN 1989

Farm E. Donahue, et al

API No. 47 - 107 - 1374

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

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

LOCATION: Elevation: 912 Watershed Bull Creek
District: Walker County Wood Quadrangle Willow Island

COMPANY CNG Development Company

ADDRESS P. O. Box 15746
Pittsburgh, PA 15244

DESIGNATED AGENT Gary A. Nicholas

ADDRESS Rt. 2 Box 698
Bridgeport, WV 26330

SURFACE OWNER Ernie C. Donahue, et ux

ADDRESS #2 Donahue Circle
Culloden, WV 25510

MINERAL RIGHTS OWNER Ernie C. Donahue, et al

ADDRESS #2 Donahue Circle
Culloden, WV 25510

OIL AND GAS INSPECTOR FOR THIS WORK

Glen Robinson ADDRESS

PERMIT ISSUED August 20, 1985

DRILLING COMMENCED Sept. 11, 1985

DRILLING COMPLETED Sept. 18, 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"	286	286	
9 5/8			
8 5/8	1346	1346	
7			
5 1/2			
4 1/2	3778	3778	432 sks.
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Dev. Shale Depth 4500 feet

Depth of completed well 3808 feet Rotary x / Cable Tools

Water strata depth: Fresh 700 feet; Salt feet

Coal seam depths: 1098 - 1103 Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation Dev. Shale Pay zone depth 3185-3470 feet

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

Final open flow 292 Mcf/d Final open flow 8 - 10 Bbl/d

Time of open flow between initial and final tests 4 hours

Static rock pressure 400 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

DEC 2 1985

(Continue on reverse side)

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

Perforated 1st Stage Dev. Shale ^{Huron} 3185-3470, 22 holes (.39) HSC Select Fire
 N2 Frac Dev. Shale 1st stage - Break 3550, Avg TPSI 3800, Ave Rate 50,000 SCF N2/min,
 ISI 2800, 5 min 2250, used 800,000 SCFN2 & 500 gals 15% MOD 202.
 Perforated 2nd stage Dev. Shale ^{Huron} 2953-3060, 19 holes (.39) HSC Select Fire
 Set Baker Retrievable Plug @ 3110. N2 Frac Dev. Shale - Break 3800, Avg TPSI 3000,
 Avg. Rate 70,000 SCFN2/min, ISI 1900, 5 min 1500. Used 800,000 SCFN2 & 500 gals 15%
 MOD 202. Perfco Retrieved Baker Plug @ 3110 and Perforated 1636-2154, 20 holes(.39) HSC
 Select Fire, Set Baker Plug @ 2210. 3rd Stage N2 Frac Dev. Shale - Break 3300, Ave TPSI
 2600, Avg Rate 70,000 SCFN2/min, ISI 1600, 5 min 1480, used 800,000 SCFN2 & 500 gals
 15% MOD 202. Retrieved Baker Plug @ 2210'.

↳ Weir 1636-1650
 Berea @ 1732-1738
 Up Dev → 2154

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
					Including indication of all fresh and salt water, coal, oil and gas
Clay			0	5	Hole Damp @ 85'
Sand, Shale & RR			5	584	700'
Coal			584	589	1" stream--720'
Sand, Shale & RR			589	1098	
Coal			1098	1103	Coal @ 584 - 589
Sand & Shale			1103	1108	1098 - 1103
Lime			1108	1188	
Sand & Shale			1188	3808	TP. Log @ TD Low Huron
<u>LOG TOPS</u>					
Big Lime			1116	1206	
Big Injun ^{tree & po}			1216	1363	
Weir			1594	1650	
Sunbury			1722	1732	
Berea			1732	1738	
Devonian Shale			1738		

From top of log
 Up Dev 1732
 Low Huron 2953 900

(Attach separate sheets as necessary)

CNG DEVELOPMENT COMPANY
 Well Operator
 By: [Signature]
 Date: October 22, 1985

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 ~~any~~ encountered in the drilling of a well."



RECEIVED
AUG 1 1985

1) Date: _____, 19____
2) Operator's Well No. 1989
3) API Well No. 47 -107-1374
State _____ County _____ Permit _____

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

- 4) WELL TYPE: A Oil / Gas _____
B (If "Gas", Production _____ / Underground storage _____ / Deep _____ / Shallow _____)
- 5) LOCATION: Elevation: 912 Watershed: Bull Creek
District: Walker County: Ritchie Wood Quadrangle: Willow Island
- 6) WELL OPERATOR CNG Development Company 142 7) DESIGNATED AGENT Gary Nicholas
Address c/o Paul W. Garrett, P.O. Box 15746 Address Crosswind Corporate Park
Pittsburgh, PA 15244 10110 Rt. 2, Box 698, Bridgeport, WV 26330
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED 9) DRILLING CONTRACTOR:
Name Samuel Harmon GLEN ROBINSON Name Sam Jack Drilling Co.
Address ~~Walker~~ 489-9162 Address P.O. Box 48
~~Walker~~ 26338 Buckhannon, WV 26201
- 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, Devonian Shale 40
- 12) Estimated depth of completed well, 3850 feet
- 13) Approximate strata depths: Fresh, _____ feet; salt, _____ feet.
- 14) Approximate coal seam depths: _____ 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	16					20-30	-		Kinds
Fresh water	1-3/4	H-40	42	x		250	250	To Surface	By Rule 15.05
Coal									Sizes
Intermediate	8-5/8	X-42	23	x		1450	1450	To Surface	By Rule 15.05
Production	4-1/2	J-55	10.5	x		3850	3850	200-400	Depths set
Tubing	1-1/2	CN-55	2.75	x					By Rule 15.01
Liners									Perforations:
									Top Bottom

OFFICE USE ONLY
DRILLING PERMIT

Permit number 47-107-1374 Date August 20 19 85

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 August 20, 1987 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <u>C</u>	Agent: <u>ALB</u>	Plat: <u>MU MU</u>	Casing	Fee
				<u>1989</u>

[Signature]
Administrator, Office of Oil and Gas
DIRECTOR, DIVISION

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

See the reverse side of the APPLICANT'S COPY for instructions to the well operator.

File