

NOTES:
 THIS MAP IS FOR WELL LOCATION PURPOSES ONLY & DOES NOT REPRESENT A COMPLETE BOUNDARY SURVEY. NO WATER WELLS OR HOUSES WITHIN 200'.

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS (7 1/2)

FILE NO. _____
 DRAWING NO. 7345
 SCALE 1" = 400'
 MINIMUM DEGREE OF ACCURACY 1/2500
 PROVEN SOURCE OF ELEVATION USGS BM DISK SET IN TOP NE END OF SE HEADWALL 22' SE OF CENTERLINE OF RT. 21 STAMPED T-103

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 DIVISION OF ENVIRONMENTAL PROTECTION.
 (SIGNED) [Signature]
 P.E. _____ L.L.S. 2153

PLACE SEAL HERE

STATE OF WEST VIRGINIA
 DIVISION OF ENVIRONMENTAL PROTECTION
 SECTION OF OIL & GAS

DATE APRIL 29, 20 09
 OPERATOR'S WELL NO. 7345
 API WELL NO. 47 035 000913 D
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF "GAS,") PRODUCTION STORAGE DEEP SHALLOW
 LOCATION: ELEVATION 850.42 WATER SHED LEFT FORK OF SYCAMORE CREEK
 DISTRICT RIPLEY COUNTY JACKSON
 QUADRANGLE RIPLEY COORDINATES LAT: 38° 51' 27" LONG: 81° 42' 10"

SURFACE OWNER REVA M. & RICHARD H. FERRELL HEIRS ACREAGE 50.00
 ORIGINAL OIL & GAS ROYALTY OWNER PERRY HICKMAN, ET AL. LEASE ACREAGE 50.00
 COAL OWNER _____ LEASE NO. 1052330

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

PLUG AND ABANDON CLEAN OUT AND REPLUG

TARGET FORMATION _____ ESTIMATED DEPTH _____
 WELL OPERATOR COLUMBIA GAS TRANSMISSION CORP DESIGNATED AGENT PAUL AMICK
 ADDRESS PO BOX 1273, CHARLESTON, WV 25325-1273 ADDRESS PO BOX 1273, CHARLESTON, WV 25325-1273

10565
 6370
 LONGITUDE 81° 40' 00"
 NORTH
 JACKSON COUNTY NAME
 913
 PERMIT

192-9-0

P

Latitude 38° 50'

Longitude 81° 40'

ERMINA PUCKETT

7287

Stone in fence corner on Ridge.

N46° 40' E - 615'

S33° 20' W
500'

7345

S89° 30' E - 193'

Fence Corner

F. F. STARCHER

PERRY
HICKMAN ET. AL.

S37° 30' E
523.50'

(+)

4.08 S
~~4.13 S~~
~~1.98 W~~
1.96 W

7314

DON HALL

N35° 45' W
278.5'

Fence Corner on west side of Route No. 21

Fence Corner on west side of Route No. 21

THOMAS H. BARNHOUSE

U.S. 21
LEFT FORK OF SYCAMORE CREEK

- New Location...
- Drill Deeper.....
- Abandonment.....

Company UNITED FUEL GAS CO.

Address CHARLESTON, W. VA.

Farm PERRY HICKMAN, ET. AL.

Tract _____ Acres 50 Lease No. 52330

Well (Farm) No. _____ Serial No. 7345

Elevation (Spirit Level) 857.56'

Quadrangle RIPLEY - WC

County JACKSON District RIPLEY

Engineer Seymour R. Howell

Engineer's Registration No. 2529

File No. 58-93 Drawing No. _____

Date 4-17-56 Scale 1" = 400'

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

WELL LOCATION MAP

FILE NO. JAC-913

+ Denotes location of well on United States Topographic Maps, scale 1 to 62,500, latitude and longitude lines being represented by border lines as shown.

- Denotes one inch spaces on border line of original tracing.

8-0 192

Deep Well

✓



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

WELL RECORD

Storage
Oil or Gas Well Gas

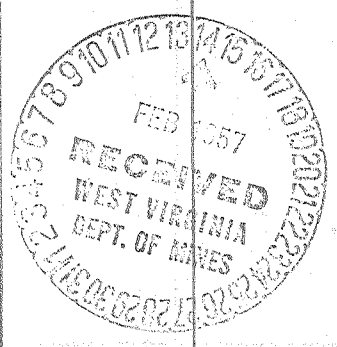
(KIND)

Quadrangle Ripley
Permit No. JAC#913
Company United Fuel Gas Co.
Address P.O. Box 1273; Charleston 25, W. Va.
Farm Perry Hickman, et al Acres 50
Location (waters) Sycamore Creek
Well No. X59-7345 Elev. 857.56
District Ripley County Jackson, W. Va.
The surface of tract is owned in fee by _____
Address _____
Mineral rights are owned by Perry Hickman, et al
Address Ripley, W. Va.
Drilling commenced 6-5-56
Drilling completed 11-18-56
Date Shot _____ From _____ To _____
With _____
Open Flow /10ths Water in _____ Inch
/10ths Merc. in _____ Inch
Volume 3,817,000 Cu. Ft.
Rock Pressure 1140 lbs. _____ hrs.
Oil _____ bbls., 1st 24 hrs.
Fresh water 430 feet 700 feet
Salt water 1550 feet 1810 feet

Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			Kind of Packer
16		42	
13 3/8		869	
10 3/4	1276'	Filled	Size of
8 5/8		2254	
7 1/2		4037	Depth set
5 1/2		4917	
3			Perf. top
2		5035	Perf. bottom
Liners Used			Perf. top
			Perf. bottom

CASING CEMENTED _____ SIZE _____ No. Ft. _____ Date _____
COAL WAS ENCOUNTERED AT 706 FEET 48 INCHES
1562 FEET 24 INCHES FEET INCHES
FEET INCHES FEET INCHES

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth Found	Remarks
Red Rock			0	30	Water 430'		1-1/2 bailers per hour
Broken Lime			30	40	Water 700'		4 bailers per hour
Red Rock			40	67	Salt water 1550'		
Lime			67	90	Hole full water 1810'		
Slate			90	96	Gas 2535-2556'		no test
Lime			96	108	Gas 5015-5022'		3,817 M
Red Rock			108	130			
Lime			130	147	NOT FRACTURED OR SHOT		<i>Fract 7-10-57</i>
Red Rock			147	155			
Sand			155	168	<u>FINAL OPEN FLOW - 3,817 M - Oriskany</u>		
Red Rock			168	198	<u>R. P. 1140#</u>		
Lime			198	215			
Sand			215	244	Shut in 12-6-56 in 2" tubing.		
Slate			244	260			
Red Rock			260	285			
Sand			285	290			
Red Rock			290	300			
Lime			300	318			
Red Rock			318	327			
Slate			327	368			
Red Rock			368	384			
Sand			384	442			
Slate			442	460			
Red Rock			460	482			
Slate			482	500			
Lime			500	509			
Slate			509	515			
Sand			515	519			
Lime			519	548			
Red Rock			548	570			
Slate			570	584			
Lime			584	610			
Red Rock			610	619			
Sand			619	625			
Slate			625	634			
Lime			634	648			
Lime Shells			648	658			
Red Rock			658	666			



Formation	Color	Hard or Soft	Top /	Bottom	Oil, Gas or Water	Depth Found	Remarks
Sand			666	706			
Coal			706	710			
Slate			710	722			
Lime			722	741			
Slate			741	780			
Sand			780	796			
Lime			796	807			
Sand			807	826			
Slate			826	840			
Red Rock			840	860			
Lime			860	872			
Red Lime			872	887			
Red Rock			887	892			
Sand			892	920			
Red Lime			920	956			
Gray Lime			956	965			
Red Rock			965	975			
Lime			975	1025			
Red Lime			1025	1030			
Red Rock			1030	1036			
Gray Lime			1036	1074			
Red Rock			1074	1085			
Slate			1085	1096			
Lime			1096	1101			
Sand			1101	1115			
Gray Lime			1115	1143			
Slate			1143	1155			
Lime			1155	1275			
Sand			1275	1285			
Lime			1285	1330			
Slate			1330	1342			
Lime			1342	1357			
Sand			1357	1499			
Salte			1499	1530			
Sand			1530	1562			
Coal			1562	1564			
Slate			1564	1570			
Sand			1570	1600			
Slate			1600	1610			
Lime			1610	1660			
Sand			1660	1684			
Lime			1684	1698			
Slate			1698	1720			
Gritty Lime			1720	1746			
Sand			1746	1754			
Lime			1754	1767			
Sand			1767	1900			
Lime - Big lime			1900	2025			
Sand - Shale			2025	2101			
Slate			2101	2125			
Gray Lime			2125	2152			
Slate & Shells			2152	2176			
Lime			2176	2320			
Slate & Shells			2320	2520			
Shale - Cyprian			2520	2535			
Berea Grit			2535	2656			
Slate & Shells			2556	3700			
Brown Shale			3700	4290			
Gray Shale			4290	4370			
Lime			4370				
Corniferous Lime - 413			4909	5012			
Oriskany			5012				
Total Depth.			5041'				

475

Big Lime 3

Date February 13, 1957

APPROVED UNITED FUEL GAS COMPANY, Owner

RECEIVED
 WV Dept of Oil & Gas
 Rev (5/07)
 APR 19 2010

DATE: 4/15/10
 API #: 47-035-00913

State of West Virginia
 Department of Environmental Protection
 Office of Oil and Gas
 Well Operator's Report of Well Work

[Handwritten signature]

Farm name: Hickman, Perry, etal Operator Well No.: 7345

LOCATION: Elevation: 850 ft Quadrangle: Ripley

District: Ripley County: Jackson
 Latitude: 6,370 Feet South of 38 Deg. 52 Min. 30 Sec.
 Longitude 10,565 Feet West of 81 Deg. 40 Min. 00 Sec.

Company: Columbia Gas Transmission, LLC

	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Address: 1700 MacCorkle Ave SE Charleston, WV 25325-1273	This is an existing storage well - the 2-3/8" tubing was pulled - a new string of 3.5" casing ran. Below is a record of current tubulars in well.			
Agent: Paul Amick				
Inspector: Jamie Stevens				
Date Permit Issued: 1/21/10	20	20	0 - 20	none
Date Well Work Commenced: 3/3/2010	13-3/8 48#	86	0 - 86	unknown
Date Well Work Completed: 4/1/2010	9-5/8 36#	2116	0 - 2116	none
Verbal Plugging:	7 23#	4884	0 - 4884	unknown
Date Permission granted on:	3-1/2 9.2#	5111	0 - 5108	195 cu ft
Rotary X Cable Rig				
Total Depth (feet): 5115 (new TD)				
Fresh Water Depth (ft.): not applicable - rework				
Salt Water Depth (ft.): not applicable - rework				
Is coal being mined in area (N/Y)? N				
Coal Depths (ft.): none reported ft				

OPEN FLOW DATA

Producing formation Oriskany Sand Pay zone depth (ft) 5027 - 5078
 Gas: Initial open flow not applicable MCF/d Oil: Initial open flow none Bbl/d
 Final open flow * 8,000 MCF/d Final open flow none Bbl/d
 Time of open flow between initial and final tests not applicable Hours
 Static rock pressure 700 psig (surface pressure) after 24 Hours
 * AOF @ max rock pressure of 1675 psig

Second Producing formation N/A Pay zone depth (ft) _____
 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 pressure) after _____ Hours

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

Signed: *James E. Amos*
 By: James E. Amos - Senior Storage Engineer - Columbia Gas Transmission, LLC
 Date: 4/15/10

Ripley storage well 7345 (035 - 00913)

This is an existing storage well. Below is a summary of work performed.

Well was killed, 2-3/8" tubing pulled, drilled deeper to 5115 ft, open hole logs ran, new 3-1/2" 9.2# J-55 casing ran and cemented, cement bond log ran, installed new wellhead, perforated, and fracture stimulated.

Logs ran: 3/16/2010 Weatherford Gr-Dens-CNL-PE-Caliper-Lateral Log

Perforations: 5027 - 5038 ft 6 SPF
 5042 - 5044 ft 6 SPF

Fracture stimulation: Halliburton
 500 gals 28% HCl acid
 343 bbls gel
 136 MSCF nitrogen
 19,500 lbs 20/40 Ottawa sand
 Avg bottomhole rate: 14 BPM
 ATP: 4001 psig
 ISIP: 3629 psig

* Note that no earthen pit was utilized. All fluids recovered via steel tanks and transported off site to waste water treatment facility.