

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

API 47 - 107 - 01750 County Wood District Steele
Quad Rockport Pad Name Wade Field/Pool Name Rockport
Farm name Wade, Carl & Dianne Well Number 12593
Operator (as registered with the OOG) Columbia Gas Transmission, LLC
Address 1700 MacCorkle Ave SE City Charleston State WV Zip 25325-1273

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 39.060372 / 4,323,620.9 Easting -81.551475 / 452,287.3
Landing Point of Curve Northing N/A - not horizontal Easting N/A - not horizontal
Bottom Hole Northing 39.064096 / 4,324,033.2 Easting -81.549699 / 452,443.4

Elevation (ft) 1061 GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine

Mud Type(s) and Additive(s)
Intermediate: fresh water base w/ polymer + KCl + starch + atapulgit
Production: fresh water base w/ polymer + starch

Date permit issued 7/29/14 Date drilling commenced 10/15/14 Date drilling ceased 11/11/14
Date completion activities began 11/17/14 Date completion activities ceased 12/10/14
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft none encountered Open mine(s) (Y/N) depths N
Salt water depth(s) ft 2140 - 2270 Void(s) encountered (Y/N) depths N
Coal depth(s) ft none encountered Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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Reviewed by:

JAN 12 2015

01/23/2015

API 47-107 - 01750 Farm name Wade, Carl & Dianne Well number 12593

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	24"	20"	41' KB	New	B-35 / 59 ppf	none	Y
Surface	17.5"	13.375"	448' KB	New	H-40 / 48 ppf	none	Y
Coal							
Intermediate 1	12.25	9.625"	2318' KB	New	J-55 / 36 ppf	none	Y
Intermediate 2							
Intermediate 3							
Production	8.75	7"	5709' KB	New	N-80 / 23 ppf	None	N
Tubing							
Packer type and depth set							

Comment Details KB is 17 ft above GL.

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	Neat	34	15.6	1.18	42	0	16
Surface	Class A	400	15.6	1.19	476	0	10
Coal							
Intermediate 1	65-35 Poz / Class A	600 / 160	13.1 / 15.6	1.71 / 1.19	1026 / 190	0	12
Intermediate 2							
Intermediate 3							
Production	Class A	160	15.6	1.21	194	4590	36
Tubing							

Drillers TD (ft) 5870 Loggers TD (ft) 5851

Deepest formation penetrated Helderberg dolomite Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 2394

Check all wireline logs run caliper density deviated/directional induction
 neutron resistivity gamma ray temperature sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____

13.375" csg: four bow-spring on jts 1, 3, 5, and 7

9.625" csg: six bow-spring on jts 1, 10, 20, 30, 40, and 50

7" csg: six spiral rigid on jts 1, 2, 3, 4, 5, and 6 - six bow-spring on jts 7, 8, 10, 12, 13, and 14.

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS 6.125" bore hole from 5720 to 5870 ft

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

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PRODUCING FORMATION(S)

DEPTHS

Oriskany Sandstone 5323 - 5370 TVD 5741 - 5788 MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1050 psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW Gas 7,000 mcfpd Oil _____ bpd NGL _____ bpd Water _____ bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
siltstone	0	46	0	46	none
sand	46	476	46	476	none
shale, sand, siltstone	476	1972	476	1972	Red Rock 1264 - 1428' & 1526 - 1586', No Fluid
Salt Sand	1972	2270	1972	2270	salt water
Pocono shale	2270	2614	2270	2616	none
Coffee / Sunbury shale	2614	2632	2616	2634	none
Berea horizon	2632	2634	2634	2636	none
Devonian shale	2634	5192	2636	5610	none
Marcellus shale	5192	5204	5610	5622	none
Onondaga limestone	5204	5323	5622	5741	none
Oriskany sandstone	5323	5342	5741	5760	upper, storage gas
Oriskany sandstone	5342	5370	5760	5788	lower, storage gas
Helderberg limestone	5370	5451	5788	5870	none
TD		5451		5870	

Please insert additional pages as applicable.

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Drilling Contractor Yost Drilling, LLC

Address 313 Steele Hill Road City Mt. Morris State PA Zip 15349

Logging Company Baker Atlas Logging

Address W Main St City Buckhannon State WV Zip 26201

Cementing Company Universal Well Service / Nabors

Address Route 5 Hall Rd / 528 Industrial Park Rd City Buckhannon / Jane Lew State WV / WV Zip 26201 / 26378

Stimulating Company Nabors Completion & Production

Address 528 Industrial Park Rd City Jane Lew State WV Zip 26378

Please insert additional pages as applicable.

Completed by James Amos

Telephone 304-483-0073

Signature *James Amos* Title Sr Well Services Engineer

Date 12/23/14

Submission of Hydraulic Fracturing Chemical Disclosure Information

Attach copy of FRACFOCUS Registry

01/23/2015

2,790'

LATITUDE 39 05'00"

LONGITUDE 81 32'30"



BOTTOM HOLE LOCATION AS-DRILLED
 LAT. 39°03'50.74"
 LONG. 81°32'58.92"
UTM METERS NAD 83
 N-4324033.2
 E-452443.4
 TOTAL DEPTH=5451' TVD
 TOTAL DEPTH=5870' MD

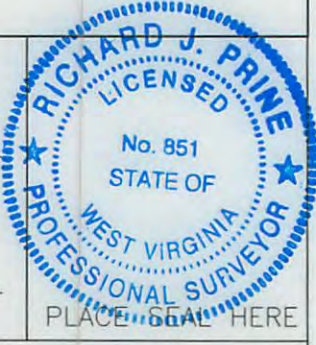
UTM METERS (NAD83)
 N-4323620.88
 E-452287.27

LAT.=39°03'37.34"
 LONG.=81°33'05.31"

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

FILE No. 14-100-019
 DRAWING No. 14-100-019
 SCALE 1"=1000'
 MINIMUM DEGREE OF ACCURACY 1:200
 PROVEN SOURCE OF ELEVATION TRIMBLE PRO XH GPS UNIT

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) *Richard J. Prine*
 RICHARD J. PRINE PS #851



STATE OF WEST VIRGINIA
 DIVISION OF ENVIRONMENTAL PROTECTION
 OFFICE OF OIL AND GAS
 NITRO, WV

DATE DECEMBER 11 20 14
 OPERATOR'S WELL No. 12593
 API WELL No. 47 107 - 01750
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF "GAS") PRODUCTION STORAGE DEEP SHALLOW

LOCATION: ELEVATION 1061 WATER SHED TYGART CREEK
 DISTRICT STEELE COUNTY WOOD
 QUADRANGLE ROCKPORT

SURFACE OWNER CARL & DIANNE WADE ACREAGE 49.95
 OIL & GAS ROYALTY OWNER O.H. BLAIR (SURFACE) A.J. HOLBERT, ET AL (BOTTOM HOLE) LEASE ACREAGE 56.5 (BOTTOM HOLE)
 LEASE No. 1046161 (SURFACE) 1050678 (BOTTOM HOLE)

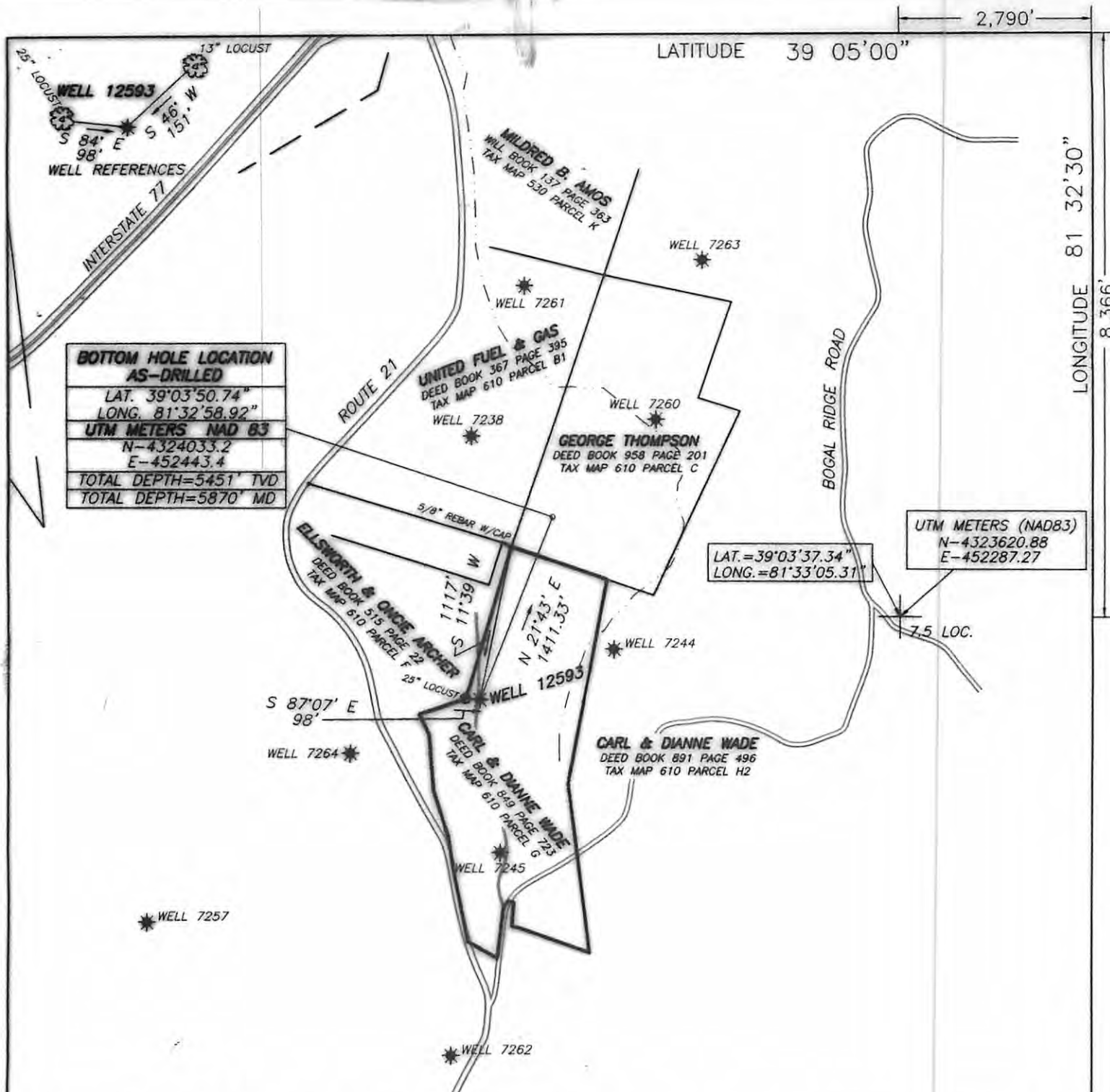
PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____

PLUG AND ABANDON CLEAN OUT AND REPLUG

TARGET FORMATION ORISKANY ACTUAL DEPTH 5451 (TVD) 5870 (MD)
 WELL OPERATOR COLUMBIA GAS TRANSMISSION, LLC DESIGNATED AGENT PAUL AMICK
 ADDRESS PO BOX 1273, CHARLESTON, WV ADDRESS P.O. BOX 1273, CHARLESTON W.V.
25325-1273 25325-1273

01/23/2015

FORM IV-6 (8-78)



2,790'

LATITUDE 39 05'00"

LONGITUDE 81 32'30"

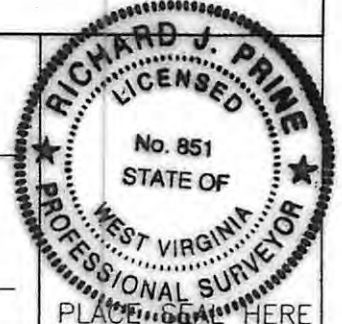
8,366'

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

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