



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street, S.E.
Charleston, WV 25304
(304) 926-0450
fax: (304) 926-0452

Harold D. Ward, Cabinet Secretary
www.dep.wv.gov

Thursday, December 29, 2022
WELL WORK PERMIT
Vertical / Re-Work

COLUMBIA GAS TRANSMISSION, LLC
1700 MACCORKLE AVENUE SE

CHARLESTON, WV 25314

Re: Permit approval for 7418
47-077-00109-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926- 0450.

James A. Martin
Chief

A blue ink signature of James A. Martin, Chief, is written over a blue circular stamp.

Operator's Well Number: 7418
Farm Name: COLE, B.
U.S. WELL NUMBER: 47-077-00109-00-00
Vertical Re-Work
Date Issued: 12/29/2022

H

4707700109W

PERMIT CONDITIONS

West Virginia Code § 22-6-11 allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
2. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
3. Well work activities shall not constitute a hazard to the safety of persons.

12/30/2022

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator: Columbia Gas Transmission, LLC 307032 Preston Portland Terra Alta, WV
Operator ID County District Quadrangle

2) Operator's Well Number: Terra Alta 7418 3) Elevation: 1979.6

4) Well Type: (a) Oil _____ or Gas X _____
(b) If Gas: Production _____ / Underground Storage X _____
Deep X _____ / Shallow _____

5) Proposed Target Formation(s): Chert / Oriskany Proposed Target Depth: 4816 / 4960

6) Proposed Total Depth: 5116 Feet Formation at Proposed Total Depth: Helderberg Lime

7) Approximate fresh water strata depths: none reported by driller 1963

8) Approximate salt water depths: none reported by driller 1963

9) Approximate coal seam depths: None reported by driller 1963

10) Approximate void depths,(coal, Karst, other): None reported by driller 1963

11) Does land contain coal seams tributary to active mine? No

12) Describe proposed well work and fracturing methods in detail (attach additional sheets if needed)

Pull tubing. Obtain logs. Install new top valve. Cleanout and acid stimulate.

* casing and equipment listed below are existing - 2-3/8" tubing will be pulled and not re-run into the well.

13) **CASING AND TUBING PROGRAM** * existing

JMM
12/29/22

TYPE	SPECIFICATIONS			FOOTAGE	INTERVALS	CEMENT
	Size	Grade	Weight per ft	For Drilling	Left in Well	Fill -up (Cu. Ft.)
Conductor	20	H-40		6	6	
Fresh Water	13-3/8	H-40	48	413	413	396
Coal						
Intermediate	9-5/8	H-40	32	1346	201	48
Production	7	J-55	23	4820	4820	2 stage - 463 / 1025
Tubing	2-3/8	J-55	4.6	4810	4810	-
Liners						

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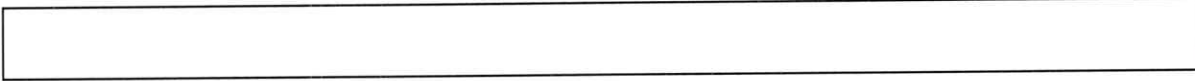
WV Department of
Environmental Protection

12/30/2022

Packers: Kind: _____
Sizes: _____
Depths Set _____

WELL JOB PLAN		STS Well Engineering & Technology		PAGE 2	DATE JOB PREPARED: 10/12/2022
Objective: Wellhead Replacement					
TITLE: Pull tubing, change top valve, log, acid stimulate				WORK TYPE: MOD	
FIELD: Terra Alta	WELL: 7418				
STAT: WV	SHL (Lat/Long):	39.409869	-79.582895	API: 47-077-00109-0000	
TWP: Portland	BHL (Lat/Long):	39.409869	-79.582895	CNTY: Preston	

PROCEDURE



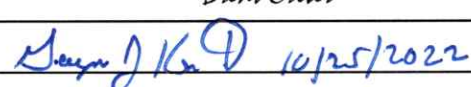
- 1 Obtain State well work permit, EM&CP, pipeline crossing evaluation, call before you dig, etc. Prepare site specific SPCC.
- 2 Notify landowner.
- 3 Obtain General Work Permit and Wellsite Review & Turnover Form from Operations.
- 4 Notify Reservoir Engineering & Geosciences (REG) of intent to take well out of service.
- 5 Notify environmental inspector prior to beginning work. If required, notify State/Federal regulatory agencies prior to beginning work.
- 6 Disconnect well line.
- 7 Prepare access road and well site. Install ECD's per EM&CP.
- 8 Service all wellhead valves.
- 9 Document and report to WE&T the initial casing and annular pressures.
- 10 Pump 20 gals methanol and 25 bbls fresh water down tubing to verify it's open.
- 11 Kill well with 11.8 ppg kill weight viscosified polymer fluid and spot 20 bbl acid soluble LCM pill on bottom. Monitor well to ensure fluid level is static before continuing. If the well is not static, consult with the WE&T engineer. (MIRU wireline unit, run RBP).
- 12 MIRU service rig.
- 13 Remove tbg valve and bonnet. Spray/pour lubricant around top of tubing mandrel and around lock-down pins. Clean mandrel lift threads and verify thread profile.
- 14 NU 7-1/16" 3M gate valve, Cameron double BOP (blind-shear in bottom / 2-3/8" pipes in top), and annular.
- 15 Perform low (500 psi) and high (2500 psi) pressure test on each BOP component. Will need a pulling joint screwed into top of tubing mandrel to perform pipe and annular pressure test.
- 16 Pull 2-3/8" tubing.
- 17 MIRU Baker Atlas Logging. Run guage ring, GR-N-CCL, HRVRT and CBL. Send digital copies of logs to WE&T engineer to determine setting depths of the RBP.
Request 1-day turnaround on HRVRT analysis. Condition of 7" casing will determine next steps. Consult with WE&T engineer before proceeding
- 18 Install RPB1 per WE&T engineer. Perform pressure test to 500 psi. Install RBP2 ~500 ft above RBP1.
- 19 Blow down 7" x 13-3/8" annuli and top off with kill fluid. Top off remaining annuli with fresh water.
- 20 Remove BOPs and tubing head.
- 21 Install new DSPA, 7" 3M MV, and remainder of christmas tree. Pressure test wellhead seals.
- 22 MIRU 1.75" CTU. RIH and retrieve RBPs.
- 23 Flow well. If well won't flow unload with nitrogen.
- 24 Perform CTCO and HCL acid treatment. Acid volume is to be recalculated based on amount needed to dissolve amount of LCM used during kill.
- 25 RDMO CTU.
- 26 Flow well to recover treatment fluids.
- 27 Perform final 45-min flowback test thru 3/4" choke.
- 28 Notify WET Project Support that well is back in-service.
- 29 Reclaim R&L.
- 30 Reconnect well line.
- 31 Paint wellhead and well line.
- 32 Commission well by completing, processing, and retain for records the Wellsite Review and Turnover Form.
- 33 Notify REG that well is ready for storage service.

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PREPARED BY: Maria Medvedeva	REVIEWED BY: James Amas	APPROVED: Brent Criser
PREP DATE: 10/12/2022		<i>[Signature]</i> 10/25/2022

WELL JOB PLAN				STS Well Engineering & Technology		PAGE 1	DATE JOB PREPARED: 10/12/2022
Objective: Wellhead Replacement				LAST PROFILE UPDATE:			
TITLE: Pull tubing, change top valve, log, acid stimulate				WORK TYPE: MOD			
FIELD: Terra Alta		WELL ID: 7418		LEASE #: 90332			
STATE: WV		SHL (Lat/ Long) 39.409869		-79.582895		API: 47-077-00109-0000	
DIST/TWP: Portland		BHL (Lat/Long) 39.409869		-79.582895		CNTY: Preston	
EXISTING TUBULAR CONFIGURATION		OD (inches)	WEIGHT (PPF)	GRADE	THREAD	DEPTH (ft)	
						TOP	BOTTOM
Conductor		20		H-40		0	6
Surface		13 3/8	48.0	H-40		0	413
Intermediate		9 5/8	32.0	H-40		1145	1346
Intermediate		7	23.0	J-55		0	4820
Stage collar		7				3834	3836
Tubing		2 3/8	4.6	J-55	10 RD NUE	0	4810
				FORMATION: refer to MISC INFORMATION section			
				ELEVATIONS			
				TMG:			
				KB-RF:			
				GL: 1974			
				CSG		DEPTH	
				WELLBORE SCHEMATIC			
				Refer to "Wellbore Diagram" tab			
Refer to "Wellbore Diagram" tab							
Wellhead API 3k Wellhead, 9-5/8" casing head screwed on to 13-3/8" x 9-5/8" swage. 7" casing set with 58,000 lbs on wellhead slips. 2-3/8" 8RD wellhead connection							
D.H. EQUIPMENT				TYPE		DEPTH (ft)	
PACKER INFO: Upper							
Lower							
NIPPLE PROFILE INFO: Upper							
Lower							
SSSV INFO:							
CEMENT INFO				Calc TOC (ft)			
20 Not cemented				-			
13 3/8 Cemented with 330 sx				0			
9 5/8 Cemented with 40 sx				1145			
7 2 stage cement job. Stage tool at 3834'. 1st stage -385sx, 2nd stage - 854 sxs.							
MISC INFORMATION							
REFER TO WELL SUMMARY RPT, WELLBORE DIAGRAM, ELOG, ETC. (see spreadsheet tabs below)							
Kill Fluid Calculation * Note that kill fluid calculation tabs are hidden							
Maximum calculated bottom-hole pressure (for reference only):				2694		psig * input	
Maximum storage field surface pressure (MAOP):				2350		psig * input	
Well TD:				5116		ft TVD * input	
Top of storage zone:				4960		ft TVD * input	
Calculated maximum BH pressure at top of zone:				2678		psig * output Kill Fluid (TOZ)	
Kill fluid density at top of zone @: 150 psi OB				10.96		ppg * output Kill Fluid (TOZ)	
Proposed depth of BP:				4600		ft TVD * input	
Calculated maximum BH pressure at depth of BP:				2655		psig * output Kill Fluid (BP)	
Kill fluid density at depth of BP @: 150 psi OB				11.72		ppg * output Kill Fluid (BP)	
Required minimum kill fluid density:				11.8		ppg * greater of the two	
Current AOF:				3,550 MCF/D			
Top historical AOF:				3,611 MCF/D			
Last MVRT:				None available			
SBT:				10/21/1991 Schlumberger CBL shows - good cement 4820' - 4690', partial cement from to 4130', good cement 3840' - 3700', partial to 3150', poor / partial to 748', free to surface.			
PROPOSED YEAR: 2023		ERCB PERMIT REQD: YES ___ NO ___ X ___		(Internal) PDS Required: YES ___ NO ___			
PREPARED BY: Maria Medvedeva		DT. APPLIED: ISSUED:		APPROVED: Brent Criser			
PREP DATE: 10/12/2022		REVIEWED BY: James Amos					

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12/30/2022

Last Updated: 12/13/2021 12:05 PM



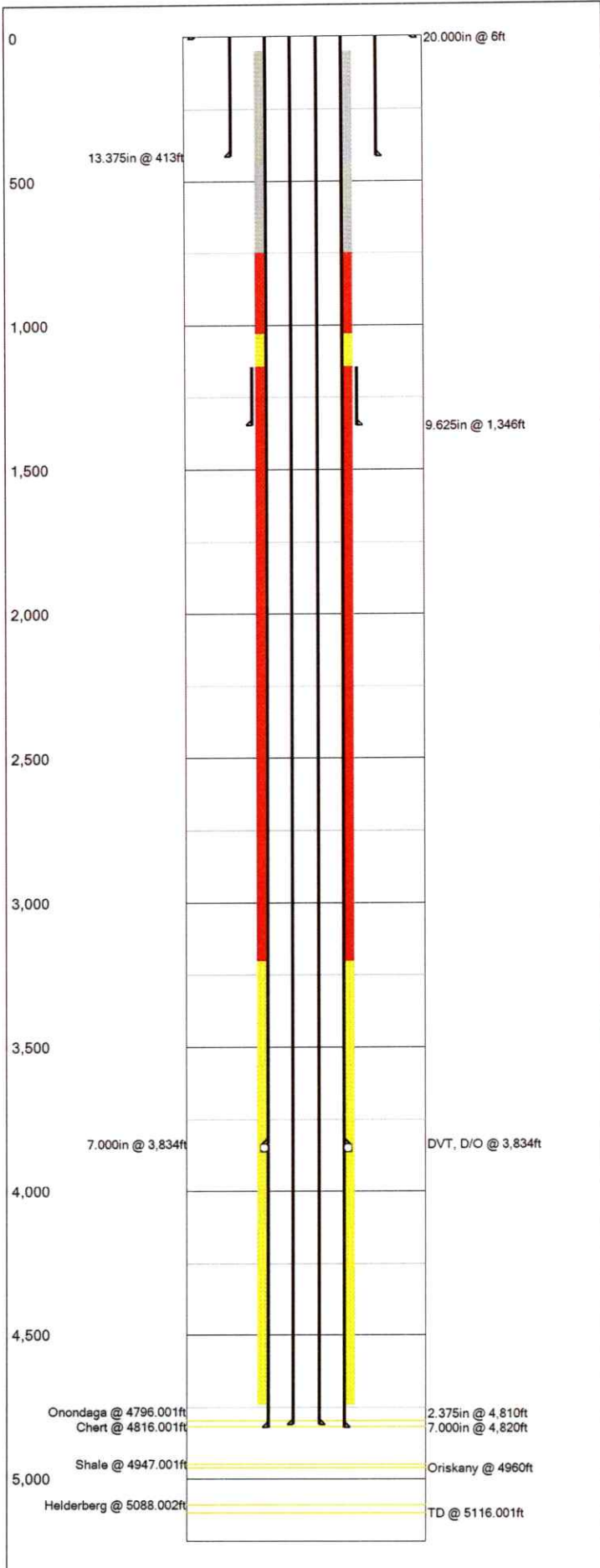
Field Name		Lease Name		Well No.	
Terra Alta		Terra Alta - 07418		07418	
County		State		API No.	
PRESTON		WV		47077001090000	
Version		Version Tag			
0		Current Completion			
G.L. (ft)	K.B. (ft)	Sec.	Township/Block	Range/Survey	
5,116.0		172-131	PORTLAND	100307418	
Operator		Well Status		Latitude	Longitude
TransCanada		ACTIVE		39.4099	-79.5829
Dist. N/S (ft)	N/S Line	Dist. E/W (ft)	E/W Line	Footage From	
PropNum			Spud Date		Comp. Date
"BERNADETTE COLE, ET AL"			6/1/1963		
Additional Information					
Other1		Other2		Other3	
Terra Alta		1003		100307418	
Prepared By		Updated By		Last Updated	
				12/13/2021 12:05 PM	

Date	Description	O.D. (in)	Wt (lb/ft)	Grade	Top (MD ft)	Bottom (MD ft)
5/15/1963	Drive Pipe	20.000		H-40	0	6
5/19/1963	Surface Pipe	13.375	48.00	H-40	0	413
5/25/1963	Casing	9.625	32.00	H-40	1,145	1,346
6/1/1963	Casing	7.000	23.00	J-55	0	3,834
6/1/1963	Casing	7.000	23.00	J-55	3,836	4,820
11/5/1991	Tubing	2.375	4.60	J-55	0	4,810

C	Date	No. Sx	Csg. O.D. (in)	Top (MD ft)	Bottom (MD ft)	Comments
	10/21/1991	0	7.000	50	748	Free Pipe
	10/21/1991	0	7.000	748	1,030	Poor Quality
	10/21/1991	0	7.000	1,030	1,142	Partial Quality
	10/21/1991	0	7.000	1,142	3,200	Poor Quality
	10/21/1991	0	7.000	3,200	4,740	Partial Quality

Date	Tool Type	O.D. (in)	I.D. (in)	Top (MD ft)	Bottom (MD ft)
6/1/1963	DVT, D/O	7.000	6.000	3,834	3,836

Formation	Top (TVD ft)	Comments
Onondaga	4,796	
Chert	4,816	
Shale	4,947	
Oriskany	4,960	
Helderberg	5,088	
TD	5,116	



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Terra Alta 7418 (API 47-077-00109) - CTCO and Acid Treatment

API 3K wellhead, 7" FS x 13-3/8" support

7" 23# csg J-55 set at 4820'

Burst: 4360 psig new (3488 psig assuming 80% safety factor)

Capacity: 4820 ft x 1.6535 gal/ft = 7,969.87 gals; x 0.0394 bbl/ft = 190 bbls

Openhole

Capacity 8-3/4" hole: 296 x 0.074376 bbl/ft = 22 bbls

Chert: 4816 – 4947'

Oriskany: 4960 – 5088'

TD: 5116'

Fluids Needed

2000 gals 15% HCl acid** treated with corrosion inhibitor, iron control/sequestering agent, and surfactant. Biocide, clay stabilizer, and surfactant to treat +/- 500 bbls fresh water. Liquid caustic on location in case need to neutralize flowback fluids.

* One day before acid treatment load 7" x 13-3/8", 7" x 12-1/4" OH, 7" x 9-5/8" stub annuli with fresh water treated with biocide, corrosion inhibitor, and clay stabilizer (~123 bbls).

** Acid volume to be recalculated based on the amount of LCM to be dissolved that was used during kill.

CTCO Procedure

1. MIRU 1.75" CTU.
2. Load CT with treated fresh water (TFW) and pressure test CT and BOPs to 2000 psig.
* *maximum pressure on wellhead components 2500 psig*
3. Open well and RIH under static conditions.
4. At 4600' begin jetting with foamed TFW. Jet to TD and cycle up and down across interval 4820' – TD.
5. Begin 15% HCl acid foamed to 50Q and cycle up and down across interval 4820' – TD until 1000 gals acid gone.
6. Chase acid with 40 bbls TFW foamed to 50Q to neutralize wellbore / flowback fluids.
7. Flow well while POOH to 4500'. Flow until returns are relatively dry.
8. CTU on stand-by until after acid treatment to unload wellbore if needed.

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Acid Treatment

1. RU to perform acid treatment down casing as follows:

▪ 1000 gals 15% HCl acid	4-6 BPM	Max Treating Press = 2500 psig
▪ 45 bbls bbls TFW	4-6 BPM	Max Treating Press = 2000 psig
▪ 45 bbls bbls TFW	4-6 BPM	Max Treating Press = 1500 psig
▪ 45 bbls bbls TFW	4-6 BPM	Max Treating Press = 1000 psig
▪ 30 bbls TFW	2-4 BPM	Max Treating Press = 1000 psig

 - SHUT DOWN FOR 30 minutes TO ALLOW ACID TO SOAK

12/30/2022

4707700109

- | | | |
|---------------|---|--------------------------------|
| ▪ 20 bbls TFW | 2-3 BPM | Max Treating Press = 1000 psig |
| | ▪ <i>SHUT DOWN FOR 30 minutes TO ALLOW ACID TO SOAK</i> | |
| ▪ 30 bbls TFW | 2-3 BPM | Max Treating Press = 1000 psig |

2. Flow well. If well quits flowing, RBIH with CT unloading fluid with N2.
3. RDMO and release CTU / acid equipment.

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12/30/2022

4707700109W

7418

FORM U 97-P 689

Atlantic Seaboard Corporation
COMPANY

SERIAL WELL NO. X-76-7418

LEASE NO. AS-332

MAP SQUARE 172-131

RECORD OF WELL NO. 7418 on the		CASING AND TUBING				TEST BEFORE SHOT
Bernadette Cole ^{Et Al} farm of 219 Acres		SIZE	WEIGHT	USED IN DRILLING	LEFT IN WELL	/10 of Water in _____ inch
in Portland	District	13-3/8"	H-40 48#	413'	413'	/10 of Merc. in _____ inch
Preston	County	9-5/8"	H-40 32#	13 ⁴⁶ 201'	201'	Volume _____ Cu. ft.
State of: West Virginia		7"	J-55 23#	4836'	4836'	TEST AFTER SHOT
Field: X-76 Terra Alta Storage		2-3/8"	J 4.60#	5096'	5096'	/10 of Water in _____ inch
Rig Commenced	19					/10 of Merc. in _____ inch
Rig Completed	19					Volume _____ Cu. ft.
Drilling Commenced	June 6, 19 63					Hours After Shot _____
Drilling Completed	June 23, 19 63					Rock Pressure _____
Drilling to cost	per foot					Date Shot _____
Contractor is: Ray Bros. Corp.						Size of Torpedo _____
Address:		SHUT IN			Oil Flowed _____ bbls. 1st 24 hrs	
		Date _____			Oil Pumped _____ bbls. 1st 24 hrs.	
Driller's Name _____		in _____ Tubing or Casing			Well abandoned and	
		Size of Packer _____			Plugged _____ 19 _____	
		Kind of Packer _____				
		1st. Perf. Set. _____ from _____				
Elevation: 1974.22 G.L.		2nd Perf. Set. _____ from _____				

DRILLER'S RECORD

FORMATION	TOP	BOTTOM	THICKNESS	REMARKS
Siltstone & Shale	0	4220	4220	
Tully Lime	4211	4235	24	
Siltstone & Shale	4235	4796	561	
Onondaga Lime	4796	4816	20	
Chert	4816	4947	131	
Shale	4947	4960	13	
Oriskany Sand	4960	5088	128	
Holderberg Lime	5088			
Total Depth		5116		

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7418

FORM U 97-1-P C 50

SERIAL WELL NO. X-76-7418

LEASE NO. AS-332

MAP SQUARE 172-131

DRILLER'S RECORD

FORMATION	TOP	BOTTOM	THICKNESS	REMARKS
<u>Logging:</u>				
Gamma Ray	4000'	to 5107'		6-24-63 Schlumberger
Temperature	4200'	to 5116'		6-24-63 Schlumberger
<u>Casing & Cement:</u>				
20" Road casing (conductor) - 6' Driven into 17½" drilled hole 6-6-63				
Not cemented.				
13-3/8", 48#/ft. H-40 casing - 413' (threads on) set @420' (K3).				
Cemented w/330 sacks neat cement and 2% Ca Cl - 6-10-63 - Dowell				
9-5/8", 32#/ft. H-40 casing - 1346' (threads on) set @1350' (KB).				
Cemented 40 sacks neat cement and 2% Ca Cl - 6-13-63 - Dowell.				
Back off 9-5/8" Left and Right collar and pulled 1145' (threads on)				
9-5/8" casing. Left 201' (threads on) 9-5/8" casing in well -				
6-20-63				
Top and left and right nipple left in well was rolled out - 6-20-63				
7", 23#/ft J-55 casing - 4830' (threads on) set @4820' (KD). Two stage				
cemented to surface. 1st stage - 200 cu. ft. "Litepoz" and 200				
sacks Class A cement tailed w/170 gallons of "Coalment" (Latex				
cement). 2nd stage - 455 cu. ft. "litapoz" and 455 sacks Class A				
cement tailed w/20 sacks of regular cement and 2% Ca Cl - 6-21-63 -				
Dowell.				
2-3/8", 4.60#/ft. J-55 tubing - 5096' (threads on) Suspended from				
tubing hanger - siphon string w/bottom joint slotted & end closed				
6-25-63.				
<u>Stimulation:</u> 1st - 1500 gal. MCA; 2000 gal. 15% Regular HCl Acid; 8,000 gal.				
Fluo X-2 and 70,000 scf N ₂ - 7-2-63 - Dowell				
2nd - 5000 gal. 15% Retarded HCl Acid; 5000 gal 15% Regular HCl				
Acid; 5,000 gal water overflush and 150,000 scf of N ₂ -				
7-13-63 - Dowell.				
<u>Production:</u> During Drilling: Chert gas - show - 6-23-63				
Chert & Oriskany - 650 Mcf - 6-23-63				
Before Acid: No test				
After Acid: 2,600 Mcf @2350 psig (Back pressure test) - 7-19-63				
Final Shut-in: 7-19-63				

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Select County: (077) Preston Select datatypes: (Check All)

Enter Permit #: 00109 Location Production Plugging Sample

Owner/Completion Stratigraphy Logs Bim Hole Loc

Pay/Show/Water

[Table Descriptions](#)
[County Code Translations](#)
[Permit Numbering Series](#)
[Usage Notes](#)
[Contact Information](#)
[Disclaimer](#)
[WVGES Main](#)
[Pipeline-Plus - New](#)

WV Geological & Economic Survey

Well: County = 77 Permit = 00109 [Link to all digital records for well](#)

Report Time: Thursday, December 29, 2022 12:05:22 PM 12/30/2022

Location Information: [View Map](#)
 API COUNTY PERMIT TAX_DISTRICT QUAD_75 QUAD_15 LAT_BD LON_BD UTM_E UTM_N
 4707700109 Preston 109 Portland Terra Alta Kingwood 39.409323 -79.585256 621998.9 4363158.7

There is no Bottom Hole Location data for this well

Owner Information:
 API CMP_DT SUFFIX STATUS SURFACE_OWNER WELL_NUM CO_NUM LEASE_LEASE_NUM MINERAL_OWN OPERATOR_AT_COMPLETION PROP_VD PROP_TROGT_FM TFM_EST_PR
 4707700109 6/23/1963 Completed Bernadette Cole et al 1 7418 AS-532 Joseph P Gassidy et al Atlantic Seaboard

Completion Information:
 API CMP_DT SPUD_DT ELEV_DATUM FIELD DEEPEST_FM DEEPEST_FMT INITIAL_CLASS FINAL_CLASS TYPE RIG CMP_MTHD TWD TMD NEW_FTG KOD G_BEF G_AFT O_BEF O_AFT NGL_BEF NGL_AFT P_BEF TL_BEF P_AFT TL_AFT BT
 4707700109 6/23/1963 1974 Ground Level Terra Alta Helderberg Oniskany Miscellaneous Well Unsuccessful Storage unknown New/Open H 5116 5116 0 2600 0 0 0 0 0 0 0 0 0 0

Pay/Show/Water Information:
 API CMP_DT ACTIVITY PRODUCT SECTION DEPTH_TOP FM TOP DEPTH_BOT FM BOT G_BEF G_AFT O_BEF O_AFT WATER_QNTY
 4707700109 6/23/1963 Horizon Storage Vertical Oniskany Chert 4960 Reasonable 0 Oniskany 0 0 0 0

There is no Production Gas data for this well

There is no Production Oil data for this well ** some operators may have reported NGL under Oil

There is no Production NGL data for this well ** some operators may have reported NGL under Oil

There is no Production Water data for this well

Stratigraphy Information:

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV_DATUM
4707700109		Driller's Tully	Well Record	4211	Reasonable	24	Reasonable	1974 Ground Level
4707700109		Original Loc	Well Record	4796	Reasonable	20	Reasonable	1974 Ground Level
4707700109		Hunnersville Ls	Well Record	4816	Reasonable	131	Reasonable	1974 Ground Level
4707700109		Original Loc	Well Record	4960	Reasonable	128	Reasonable	1974 Ground Level
4707700109		Hunnersville Chert	Well Record					

Wellfile (E-Log) Information:
 API LOG_TOP LOG_BOT DEEPEST_FM_L LOGS_AVAL SCAN DIGITIZED GR_TOP GR_BOT D_TOP D_BOT N_TOP N_BOT L_TOP L_BOT T_TOP T_BOT S_TOP S_BOT O_TOP O_BOT INCH2 INCH5 REDUCED KOP LOGAMD ELEV_KB ELEV_GL ELEV_DF LOG_GIT
 4707700109 3990 5112 Y N N 3990 5106 4196 5106 5106 5112 Y N

Downloadable Log Images/Data: **We advise you to save the scanned log or digitized log file(s) to your PC for viewing.** To do so, right-click the file of interest and select the save option. Then you can direct the file to a location of your choice. Please note the scanned log images vary in size and some may take several minutes to download.

Scanned Logs
 FILENAME 4707700109qdb.rtf
 geologic log types:
 d density (includes bulk density, compensated density, density, density porosity, grain density, matrix density, etc.)
 e photoelectric adsorption (PE or Pe, etc.)
 g gamma ray
 i induction (includes dual induction, medium induction, deep induction, etc.)
 l laterolog
 m dipmeter
 n neutron (includes neutron porosity, sidewall neutron-SWN, etc.)
 o other¹
 s sonic or velocity
 t temperature (includes borehole temperature, BHT, differential temperature, etc.)
 z spontaneous potential or potential
 mechanical log types:
 b cement bond
 c caliper
 o other¹
 p perforation depth control or perforate

¹Other logs may include, but are not limited to, such curves as audio, bit size, CCL—casing collar locator, continuous meter, directional survey, gas detector, guard, NCTL—Nuclear Cement Top Locator, radioactive tracer, tension

There is no Plugging data for this well

Sample Information:
 API CUT1_TOP CUT1_BOT CUT2_TOP CUT2_BOT CORE1_TOP CORE1_BOT FM1_TOP FM1_BOT CORE2_TOP CORE2_BOT FM2_TOP FM2_BOT SMP1_THIN_THIN_SEC1 SCAN1 SLAB1 PERM1_THIN_THIN_SEC2 SCAN2 SLAB2 PERM2
 4707700109 4000 5105
 WSC Comment: There are two sets of this interval.

4707700109W

WW-2A
(Rev. 6-14)

1.) Date: 10.13.2022
 2.) Operator's Well Number Terra Alta 7418
 State County Permit
 3.) API Well No.: 47- 077 - 00109

**STATE OF WEST VIRGINIA
 DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
 NOTICE AND APPLICATION FOR A WELL WORK PERMIT**

4) Surface Owner(s) to be served:
 (a) Name Carolyn Dewitt
 Address 115 Seemont Dr
Kinwood, WV 26537
 (b) Name _____
 Address _____
 (c) Name _____
 Address _____

5) (a) Coal Operator
 Name Not operated
 Address _____
 (b) Coal Owner(s) with Declaration
 Name Not operated
 Address _____
 (c) Coal Lessee with Declaration
 Name Not operated
 Address _____

6) Inspector Gayne Knotowski
 Address PO Box 108
Gormanian, WV 26720
 Telephone 304.546.8171

TO THE PERSONS NAMED ABOVE TAKE NOTICE THAT:

 Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas

OR
 x Included is the information required by Chapter 22, Article 6, Section 8(d) of the Code of West Virginia (see page 2)

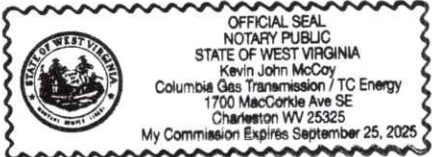
I certify that as required under Chapter 22-6 of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through on the above named parties by:

- Personal Service (Affidavit attached)
- x Certified Mail (Postmarked postal receipt attached)
- Publication (Notice of Publication attached)

I have read and understand Chapter 22-6 and 35 CSR 4, and I agree to the terms and conditions of any permit issued under this application.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.



Well Operator: Columbia Gas Transmission, LLC
 By: Maria Medvedeva
 Its: Senior Wells Engineer Storage Technical Services
 Address: 1700 MacCorkle Ave SE
Charleston WV 25314-1273
 Telephone: 304-410-4313
 Email: maria_medvedeva@tcenergy.com

Subscribed and sworn before me this 13th day of October, 2022

RECEIVED
Office of Oil and Gas

 Notary Public NOV 01 2022
 My Commission Expires 9-25-2025

Oil and Gas Privacy Notice WV Department of Environmental Protection

4707700109W

Columbia Gas Transmission, LLC
1700 MacCorkle Ave., SE, Charleston, WV, USA 25314



October 13th, 2022

Carolyn Dewitt
115 Seemont Dr
Kingwood, WV 26537

Columbia Gas Transmission, LLC is applying for a permit to the WV Department of Environmental Protection – Office of Oil and Gas, to workover an existing underground natural gas storage well located on a property owned by you. As reference, the field and well ID is Terra Alta 7418 (API 47-077-00109).

As part of the well permitting process, Columbia, the well operator, is required to provide a copy of all applicable permit application forms for your review and record retention.

Regards,

Maria Medvedeva
Senior Wells Engineer
Well Engineering & Technology
Columbia Gas Transmission, LLC

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

7022 0410 0002 7184 2549

Kingwood, WV 26537

OFFICIAL USE

Certified Mail Fee	\$4.00
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy)	\$0.00
<input type="checkbox"/> Return Receipt (electronic)	\$0.00
<input type="checkbox"/> Certified Mail Restricted Delivery	\$0.00
<input type="checkbox"/> Adult Signature Required	\$0.00
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00
Postage	\$9.90
Total Postage and Fees	\$17.15

Sent To: Carolyn Dewitt
Street and Apt. No., or PO Box No.

Postmark: OCT 13 2022
10/13/2022

RECEIVED
Office of Oil and Gas
NOV 01 2022
WV Department of
Environmental Protection

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> Complete items 1, 2, and 3. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. 	<p>A. Signature <input checked="" type="checkbox"/> Carolyn Dewitt <input type="checkbox"/> Agent <input type="checkbox"/> Addressed</p> <p>B. Received by (Printed Name) Carolyn Dewitt</p> <p>C. Date of Delivery 10 13 22</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input checked="" type="checkbox"/> No</p>
<p>1. Article Addressed to:</p> <p>Carolyn Dewitt 115 Seemont Dr Kingwood, WV 26537</p>	<p>3. Service Type</p> <p><input type="checkbox"/> Adult Signature <input type="checkbox"/> Priority Mail Express® <input type="checkbox"/> Adult Signature Restricted Delivery <input type="checkbox"/> Registered Mail™ <input type="checkbox"/> Certified Mail® <input type="checkbox"/> Registered Mail Restricted Delivery <input type="checkbox"/> Certified Mail Restricted Delivery <input type="checkbox"/> Signature Confirmation® <input type="checkbox"/> Collect on Delivery <input type="checkbox"/> Signature Confirmation Restricted Delivery <input type="checkbox"/> Collect on Delivery Restricted Delivery <input type="checkbox"/> Restricted Delivery</p>
<p>2. Article Number (Transfer from service label)</p> <p>7022 0410 0002 7184 2549</p>	<p>12/30/2022</p>

www.tcenergy.com

WW-2A Surface Waiver
(4/16)

SURFACE OWNER WAIVER

County Preston

Operator
Operator well number

Columbia Gas Transmission LLC
Terra Alta 7418

INSTRUCTIONS TO SURFACE OWNERS NAMED ON PAGE WW2-A

The well operator named on page WW2A is applying for a permit from the State to do oil or gas well work. (Note: If the surface tract is owned by more than three persons, then these materials were served on you because your name appeared on the Sheriff's tax ticket on the land or because you actually occupy the surface tract. In either case, you may be the only owner who will actually receive these materials.) See Chapter 22 of the West Virginia Code. Well work permits are valid for 24 months. If you do not own any interest in the surface tract, please forward these materials to the true owner immediately if you know who it is. Also, please notify the well operator and the Office of Oil and Gas.

NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.

WHERE TO FILE COMMENTS AND OBTAIN ADDITIONAL INFORMATION:

Chief, Office of Oil and Gas
Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
(304) 926-0450

Time Limits and methods for filing comments. The law requires these materials to be served on or before the date the operator files his Application. You have **FIFTEEN (15) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Comments must be in writing. Your comments must include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

The Chief has the power to deny or condition a well work permit based on comments on the following grounds:

- 1) The proposed well work will constitute a hazard to the safety of persons.
- 2) The soil erosion and sediment control plan is not adequate or effective;
- 3) Damage would occur to publicly owned lands or resources;
- 4) The proposed well work fails to protect fresh water sources or supplies;
- 5) The applicant has committed a substantial violation of a previous permit or a substantial violation of one or more of the rules promulgated under Chapter 22, and has failed to abate or seek review of the violation...".

If you want a copy of the permit as it is issued or a copy of the order denying the permit, you should request a copy from the Chief.

List of Water Testing Laboratories. The Office maintains a list of water testing laboratories which you can hire to test your water to establish water quality prior to and after drilling. Contact the Chief to obtain a copy.

VOLUNTARY STATEMENT OF NO OBJECTION

I hereby state that I have read the instructions to surface owners and that I have received copies of a Notice and Application for a Well Work Permit on Form WW2-A, and attachments consisting of pages 1 through ___ including a work order on Form WW2-B, a survey plat, WW-9, and a soil and erosion plan, all for proposed well work on my surface land as described therein.

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

FOR EXECUTION BY A NATURAL PERSON

FOR EXECUTION BY A CORPORATION, ETC.

Signature

Date

Company
Name
By
Its

Print Name

RECEIVED
Office of Oil and Gas

NOV 01 2022 Date

Signature

Date

COAL OPERATOR, OWNER, OR LESSEE WAIVER

* coal not operated

County Preston

Operator Columbia Gas Transmission LLC

Operator's Well Number Terra Alta 7418

INSTRUCTIONS TO COAL OPERATOR, OWNER, OR LESSEE

To the coal operator, owner, or lessee named on page WW2-A. You are hereby notified that any objection you wish to make or are required to make by WV Code 22-6-15, 16 or 17, must be filed with the Chief of the Office of Oil and Gas within fifteen (15) days after the receipt of this application by the Office. Mail objections to:

Chief, Office of Oil and Gas
Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
(304) 926-0499 extension 1654

WAIVER

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 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.

FOR EXECUTION BY A NATURAL PERSON

FOR EXECUTION BY A CORPORATION, ETC.

Signature

Date

Company Name
By
Its

Date

Signature

Date

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Office of Oil and Gas

NOV 01 2022

WV Department of
Environmental Protection

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6, Section 8(d)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, 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:

Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
Bernadette Cole, et al	Columbia Gas Transmission	Storage Lease - 1090332-000	340 / 660

**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources
- WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

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Office of Oil and Gas

NOV 01 2022

WV Department of
Environmental Protection

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator:
By: Its:

Columbia Gas Transmission, LLC

 Maria Medvedeva
 Senior Wells Engineer Storage Technical Services

WW-2B1
(5-12)

N/A

Well No. Terra Alta 7418

West Virginia Department of Environmental Protection
Office of Oil and Gas

NOTICE TO SURFACE OWNERS

The well operator named below is preparing to file for a permit from the state to drill a new well. Before a well work permit can be filed with the Chief of the Office of Oil and Gas, the well operator is required to have given notice of the right to request water well or spring analytical testing. This notice shall be given to the owners or occupants of land which have a water well or spring being utilized for human consumption, domestic animals, or other general use and which is located within 1000 feet of the proposed well site.

With this form, the operator is giving you notice of your right to request analytical testing. The operator is required to sample and analyze the water wells or springs of all owners or occupants who request it. Therefore, if you wish to have your water well or spring tested, contact the operator named below.

All sampling shall be completed prior to drilling. Within thirty (30) days of the receipt of such sample analyses the operator shall submit the results to the Chief of the Office of Oil and Gas and to the owners or occupants who may have requested them.

Be advised, you have the right to sample and analyze any water supply at your own expense.

Listed below is the laboratory chosen by operator to perform analysis, and contactor chosen to collect sample.

Certified Laboratory Name _____
Sampling Contractor _____

Well Operator Not applicable - existing underground natural gas storage well

Address _____

Telephone _____

FOR OPERATOR'S USE ONLY: Below, or on an attached page, list those persons which were given this notice. Place an asterisk beside the one(s) that contacted you and requested sampling and analyses. If there were no requests made, indicate by underling which one you have selected to sample and analyze. If there are no water wells or springs within 1000 feet of the proposed site, the Chief may require the operator to test wells up to 2000 feet from the proposed site.

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Office of Oil and Gas

NOV 01 2022

WV Department of
Environmental Protection

4707700109W

WW-9
(5/16)

API Number 47 - 077 - 00109
Operator's Well No. Terra Alta 7418

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Columbia Gas Transmission, LLC OP Code 307032

Watershed (HUC 10) Saltlick Creek Quadrangle Terra Alta, WV

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes No

Will a pit be used? Yes No

If so, please describe anticipated pit waste: N/A

Will a synthetic liner be used in the pit? Yes No If so, what ml.? N/A

Proposed Disposal Method For Treated Pit Wastes:

- Land Application (if selected provide a completed form WW-9-GPP)
- Underground Injection (UIC Permit Number 34-167-23862)
- Reuse (at API Number _____)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain Mud Master 64054; Reserve Environmental Services (WMGR 123SW008)
Appalachian Water Services (WMGR 123SW001))

Will closed loop system be used? If so, describe: yes - steel flow line to tanks

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Fresh water

-If oil based, what type? Synthetic, petroleum, etc. N/A

Additives to be used in drilling medium? NaCl, biocide, soda ash, polymer, starch, CaCO3, HCl acid

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. N/A

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) N/A

-Landfill or offsite name/permit number? To be managed by Waste Management and US Ecology for disposal at permitted landfill

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on April 1, 2016, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

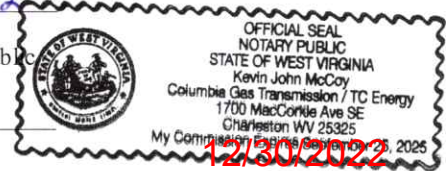
Company Official Signature *Maria Medvedeva*
Company Official (Typed Name) Maria Medvedeva
Company Official Title Senior Wells Engineer Storage Technical Services

NOV 01 2022

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Office of Oil and Gas
WV Department of Environmental Protection

Subscribed and sworn before me this 13th day of October, 20 22

[Signature] Notary Public
My commission expires 9-25-2025



Proposed Revegetation Treatment: Acres Disturbed < 1.0 Prevegetation pH 6-7

Lime 2 Tons/acre or to correct to pH 7-8

Fertilizer type 10-10-10

Fertilizer amount 600 lbs/acre

Mulch hay or straw @ 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Annual rye	40	Orchard Grass and/or Tall Fescue	29
		Birdsfoot Trefoil (Empire)	9
		Annual Rye	12

Attach:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, provide water volume, include dimensions (L, W, D) of the pit, and dimensions (L, W), and area in acres, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [Signature]

Comments:

Reclaim any disturbed areas ASAP

RECEIVED Office of Oil and Gas

NOV 01 2022

Title: Inspector

Date: 10/25/2022

WV Department of Environmental Protection

Field Reviewed? (X) Yes () No

**STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
GROUNDWATER PROTECTION PLAN**

Operator Name: Columbia Gas Transmission, LLC
Watershed (HUC 10): Saltlick Creek Quad: Terra Alta, WV
Farm Name: Bernadette Cole, et al

1. List the procedures used for the treatment and discharge of fluids. Include a list of all operations that could contaminate the groundwater.

No fluids planned to be discharged. No fertilizer will be stored on site. Fuel, oil, and lubricants will be stored on site, but located within secondary containment. Accidental spills from construction equipment, well treatment fluids, and produced well fluids are the only possible source of contamination to groundwater. Drilling and flowback fluids to be stored in tanks. All accumulated fluids to be hauled off site to UIC disposal facility.

2. Describe procedures and equipment used to protect groundwater quality from the list of potential contaminant sources above.

All construction and well servicing equipment will be monitored and inspected daily for leaks. Tanks to be monitored daily for leaks. Spill kits will be on site.

3. List the closest water body, distance to closest water body, and distance from closest Well Head Protection Area to the discharge area.

Saltlick Creek is at a distance of 0.14 miles W.

The Terra Alta Water Works WV3303917 is the closest Well Head Protection Area at a distance of 3.17 miles NE from discharge area.

4. Summarize all activities at your facility that are already regulated for groundwater protection.

N/A

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NOV 01 2022

WV Department of
Environmental Protection

5. Discuss any existing groundwater quality data for your facility or an adjacent property.

12/30/2022

N/A

6. Provide a statement that no waste material will be used for deicing or fill material on the property.

No waste material will be used for deicing or fill material on the property.

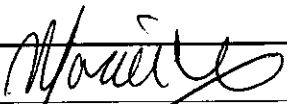
7. Describe the groundwater protection instruction and training to be provided to the employees. Job procedures shall provide direction on how to prevent groundwater contamination.

During routine tailgate and JSA meetings groundwater protection will be a topic of discussion.

8. Provide provisions and frequency for inspections of all GPP elements and equipment.

No fertilizer will be stored on site. Fuel, oil, and lubricants will be stored on site, but located within secondary containment. Spills from construction equipment, well treatment fluids, and produced well fluids are the only possible source of contamination to groundwater.

All construction and well servicing equipment will be monitored and inspected daily for leaks or spills.

Signature: 

Date: 10.13.2022

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Environmental Protection


12/30/2022

WV DEP Reclamation Plan - Site Detail

Terra Alta well 7418 (API 47-077-00109)

- BMPs and erosion control devices to be utilized per WV DEP guidelines and Columbia's WV Environmental Construction Standards
- Existing drainage, culverts, and road ditches to be maintained
- Minor grading and surface material to be applied as needed

Legend

-  CWA
-  Terra Alta - 07418

Existing Access Road

Terra Alta - 07418

Limit of Proposed Disturbance on existing well site

~0.5 acres

12/30/2022

Google Earth



200 ft

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NOV 01 2022

WV Department of
Environmental Protection

4707700109W



WV DEP Reclamation Plan - Overview

Terra Alta well 7418 (API 47-077-00109)

- BMPs and erosion control devices to be utilized per WV DEP guidelines and Columbia's WV Environmental Construction Standards
- Existing drainage, culverts, and road ditches to be maintained
- Minor grading and surface material to be applied as needed

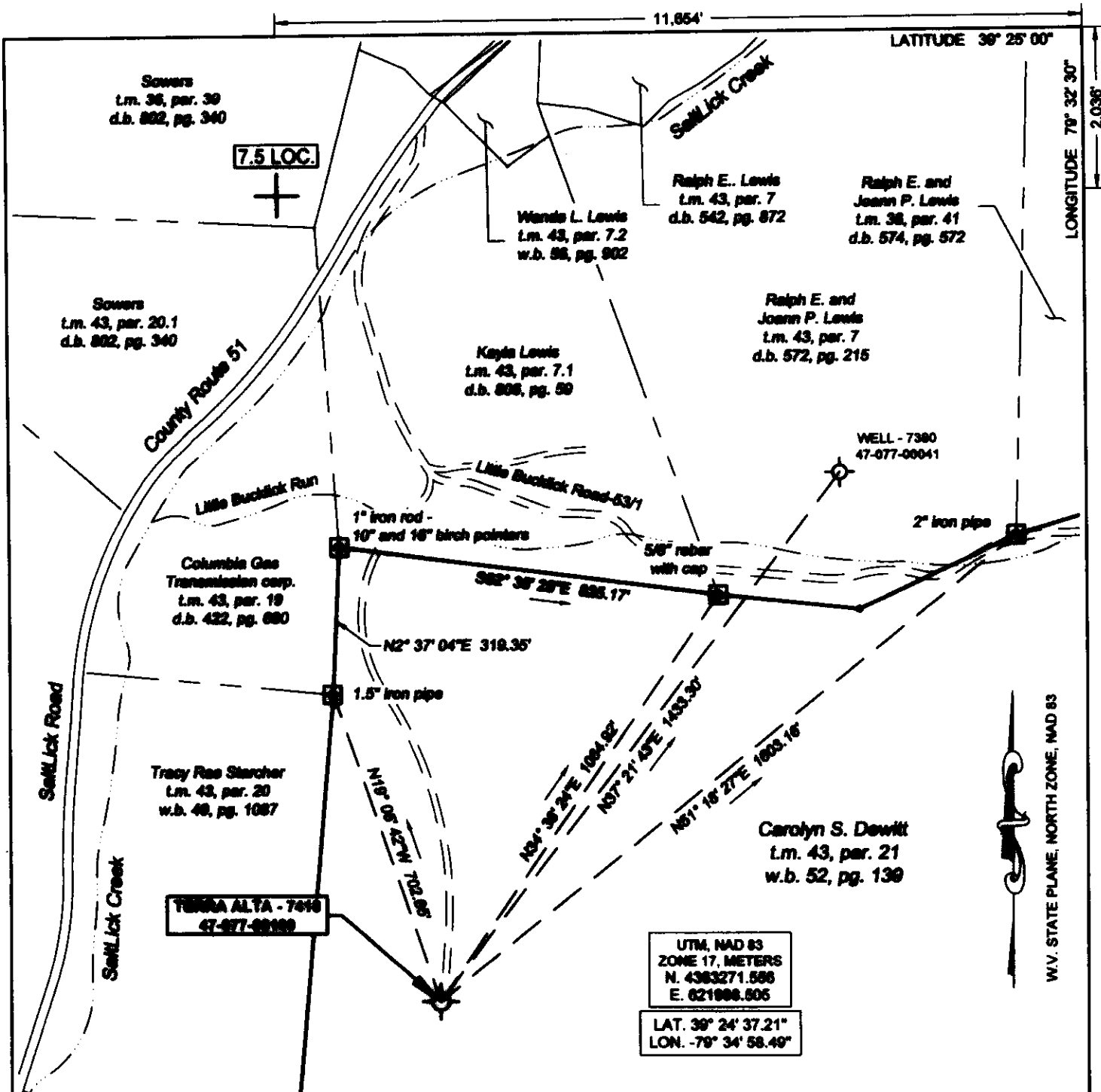
Legend

- CWA
- Terra Alta - 07418

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Office of Oil and Gas

NOV 01 2022

WV Department of
Environmental Protection

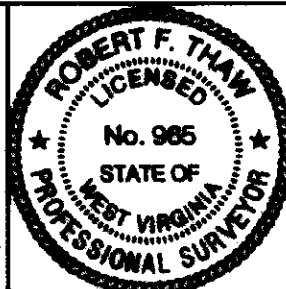


(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE No 2301-2345-001-005
 DWG No. TERRA ALTA-7418
 SCALE 1 INCH = 300 FEET
 MINIMUM DEGREE OF ACCURACY 1:200
 PROVEN SOURCE OF ELEVATION TERRA ALTA R10
 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) R. Thaw
ROBERT F. THAW PS #965



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



DATE SEPTEMBER 30 2022
 OPERATOR'S WELL No. 7418
 API WELL No. 47 077 - 00109M

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL STATE 47 COUNTY 077 PERMIT 00109M
 (IF "GAS") PRODUCTION STORAGE DEEP SHALLOW
 LOCATION: ELEVATION 1978.6 WATER SHED SALTLICK CREEK
 DISTRICT FORELAND COUNTY PRESTON

QUADRANGLE TERRA ALTA WV
 SURFACE OWNER CAROLYN S. DEWITT ACREAGE 219.2

OIL & GAS ROYALTY OWNER BERNETTE COLE, ET AL
 LEASE No. 100000-000 LEASE ACREAGE 219

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION
 OTHER PHYSICAL CHANGE IN WELL (SPECIFY) PULL TBS, TOP VALVE CHANGE, LOG, ACID STIM
 PLUG AND ABANDON CLEAN OUT AND REPLUG

TARGET FORMATION OSKANY ESTIMATED DEPTH 5116

WELL OPERATOR COLUMBIA GAS TRANSMISSION, LLC DESIGNATED AGENT MARIA MEDVEDEVA
 ADDRESS PO BOX 1273, CHARLESTON, WV 26305-1273 ADDRESS 1700 MACCORRLE AVE., S.E. CHARLESTON, WV 26314

FORM IV-6 (8-78)

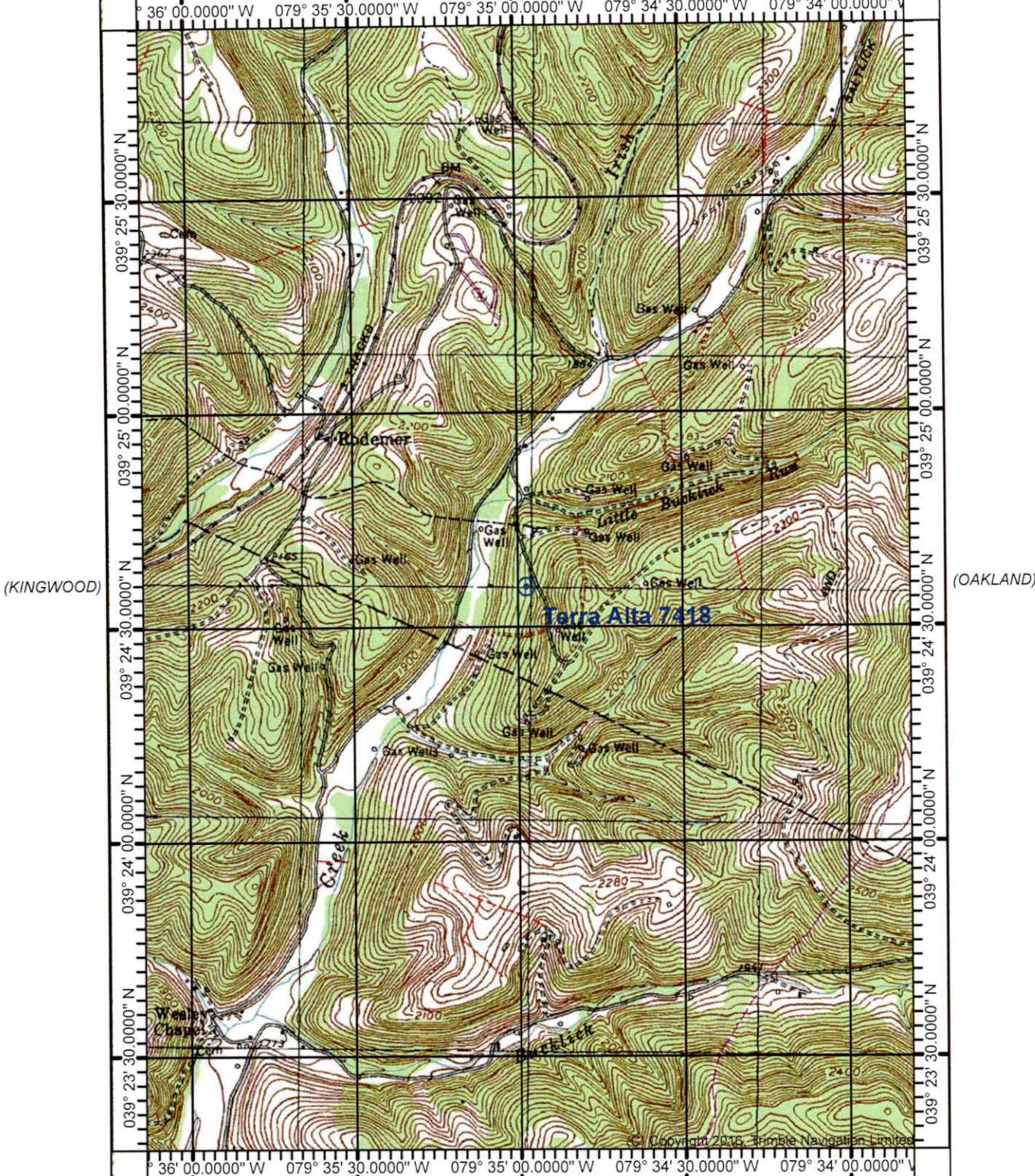
4707700109W

(VALLEY POINT) 

TERRA ALTA QUADRANGLE
WEST VIRGINIA
TOPOGRAPHIC SERIES (SANG RUN)

(CUZZART)

079° 36' 08.2703" W 079° 35' 30.0000" W 079° 35' 00.0000" W 079° 34' 30.0000" W 079° 34' 00.0000" W 079° 33' 47.9126" W 039° 25' 54.1252" N



039° 23' 16.3961" N 079° 36' 08.2703" W (AURORA) SCALE 1:24000 079° 33' 47.9126" W 039° 23' 16.3961" N

(ROWLESBURG)

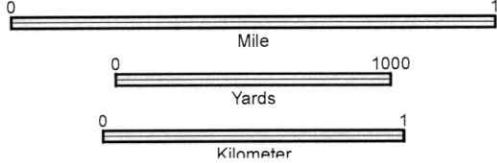
(TABLE ROCK)

Produced by Trimble Terrain Navigator Pro
Topography based on USGS 1:24,000
Maps

North American 1983 Datum (NAD83)

To place on the predicted North American
1927 move the projection lines 11M N and
19M E

Declination



CONTOUR INTERVAL 20 FT

39079-D4-TM-024
TERRA ALTA, WV
JAN 1, 2000

12/30/2022

RECEIVED
Office of Oil and Gas

NOV 01 2022

WV Department of
Environmental Protection

Columbia Gas Transmission, LLC
1700 MacCorkle Ave., SE, Charleston, WV, USA 25314



October 25th, 2022

WV DEP – Office of Oil & Gas
601 57th Street, SE
Charleston, WV 25304-2345

Enclosed is a well work permit application for the following Columbia Gas Transmission existing storage well:

Terra Alta 7418 (API 077-00109)

Please email to address below, and return hardcopies of permits to:

Columbia Gas Transmission
1700 MacCorkle Ave SE
Charleston, WV 25314
Attn: Maria Medvedeva

Ck # 43056
#900 -

If you have questions, feel free to call.

Regards,

Maria Medvedeva
Senior Wells Engineer
Well Engineering & Technology
Columbia Gas Transmission, LLC
Off: 304-357-2445
Mob: 304-410-4313
maria_medvedeva@tcenergy.com

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WV Department of
Environmental Protection



Kennedy, James P <james.p.kennedy@wv.gov>

Re-work permit issued 4707700109

1 message

Kennedy, James P <james.p.kennedy@wv.gov>


Thu, Dec 29, 2022 at 1:00 PM

To: maria_medvedeva@tcenergy.com, Gayne J Knitowski <gayne.j.knitowski@wv.gov>

To whom it may concern a re-work permit has been issued for 4707700109.

James Kennedy

WVDEP OOG

 **4707700109.pdf**
4645K

12/30/2022