APPENDIX C

"Wetland and Stream Delineation and WVSWVM Assessment Report, Coles Run and Adjoining Tributaries,"
Century Engineering, Inc.,
June 2018
[includes revisions,
Nov. 2018 and Sept. 2019]

WETLAND AND STREAM DELINEATION AND WVSWVM ASSESSMENT REPORT

COLES RUN AND ADJOINING TRIBUTARIES

PREPARED FOR:

LPG LAND AND DEVELOPMENT COMPANY

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CENTURY PROJECT 181024.00
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Contents

1.0 INTRODUCTION

This report presents the findings of a stream and wetland assessment and delineation study completed by Century Engineering, Inc. (CEI) for LPG Land and Development Company (LPG). The study area was located in Monongalia County, West Virginia, within the Western Allegheny Plateau physiographic province (39°41'12.4"N 79°50'05.2"W). See Attachment A for a project location map. The purpose of the study was to delineate wetlands and ephemeral, intermittent, and perennial streams within the project area that would likely be considered "jurisdictional" by state and federal regulatory agencies, which was then used to inform an assessment of stream "debits" associated with lost aquatic resources within the study area. The West Virginia Stream and Wetland Valuation Metric (WVSWVM) was completed on existing, representative streams across the study area in order to establish baseline unit scores for stream condition.
CEI understands that the WV Department of Environmental Protection (WV DEP) filed a "complaint with enforcement" order with Monongalia County Circuit Court on May 22, 2014, based on 12 "notices of violation" issued between 2010 and 2013. These violations occurred at LPG's industrial park near Cheat Lake, West Virginia, and stemmed from illegal fill into jurisdictional Waters of the US (WOTUS). Based on best available mapping and examination of historic data, the total length of stream impacts at the study area were determined to be approximately 4,705 linear feet. Impacts to historic wetlands are unknown, however analysis of available hydrographic data does not indicate presence of NWI wetlands prior to site impacts.

2.0 METHODOLOGY

Based on discussions between the United States Environmental Protection Agency (US EPA) and LPG involving assessment of lost aquatic resources on the site, it was determined that a full delineation of existing streams was to be performed on the LPG development site and within an extended buffer of 300' from all LPG property boundaries. The purpose of delineating streams beyond the LPG property boundary was twofold: 1.) determine the flow status and condition of streams that may drain to the LPG site and 2.) determine the location of possible SWVM assessment sites. Stream impacts occurred prior to assessment of existing stream condition, therefore SWVM assessment were conducted on upstream, unimpacted reaches of the same stream (i.e. SAR-1 on stream S002) or on similar proxy sites (SAR-08 on stream S009). Under this methodology, which has been used in similar instances in EPA Region 3, an accurate assessment of pre-impact stream condition can be achieved. Environmental scientists from CEI performed on-site data collection and field analyses between May 1st and May 3rd, 2018.

2.1 STREAM AND WETLAND DELINEATION METHODOLOGY

CEI performed a field reconnaissance for the entire study area to determine the presence or absence of wetland and stream systems in May 2018. In the field, wetland delineations were conducted using the criteria outlined in the *Corps of Engineers Wetlands Delineation Manual* (USACE, 1987) and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (USACE, 2012). During the course of the field investigation, dominant plant species, soils, and hydrology within wetland and upland areas were identified and recorded.

Representative photographs were taken throughout the study area and specifically of wetland and stream systems in order to document field conditions at the time of the delineation. These photos have been included as Attachment B to this report; see Attachment C for stream and wetland data forms.

2.2 WVSWVM ASSESSMENT

The West Virginia Stream and Wetland Valuation Metric v2.1 (WV IRT 2017) was used to establish a baseline unit score of the existing stream conditions within the project area and buffer areas. The stream baseline assessment was performed in accordance with the instructions included in the WVSWVM directive section, located on Sheets 1 – 4 of the SWVM document. A stream assessment reach (SAR) was located on each jurisdictional stream within the project area, with the exception of streams S007 and S010; these streams are discussed in subsequent sections of this report.

Per the WVSWVM instruction, field data collected at each SAR included:

- US EPA Rapid Bioassessment Protocol (High and Low Gradient)
- USACE High Gradient Hydrogeomorphic Functional Stream Assessment (for high-gradient intermittent and ephemeral streams)
- USACE Low Gradient Hydrogeomorphic Functional Stream Assessment (for low-gradient perennial streams)
- Water Quality Indicators (Specific conductivity, pH, dissolved oxygen)
- WV Stream Condition Index (WVSCI)

The West Virginia Stream Condition Index (WVSCI) was calculated from macroinvertebrate samples collected on perennial and intermittent streams within the SAR extents; these samples were collected according to sampling protocols established by WV DEP (WV DEP 2015). Taxonomic analysis and generation of final WVSCI scores were performed by EcoAnalysts, Inc., a subconsultant to CEI.

Attachment D contains photographs taken at representative points along each SAR; see Attachment E for WVSWVM and Hydrogeomorphic (HGM) assessment data sheets.

3.0 FINDINGS

3.1 WETLANDS AND STREAM DELINEATIONS

The field investigation performed during May 2018 located 6 wetland systems, 3 perennial streams, 5 intermittent streams, and 2 ephemeral streams classified as "waters of the U.S." Information concerning these wetlands and streams is summarized in Table 1 and detailed in subsequent sections of this report. Mapping of delineated wetlands and streams at the study area are included in Attachment F.

Table 1: Summary of delineated wetlands and streams at the LPG project site

System Name	System Type	Area/Length within the Study Area	Cowardin Classification
WL001	Wetland	0.02 AC	PEM1A
WL002	Wetland	0.06 AC	PEM1/SS1A
WL003	Wetland	0.03 AC	PEM1A
WL004	Wetland	0.08 AC	PEM1A
WL005	Wetland	0.044 AC	PEM1/SS/FO1A
WL006	Wetland	0.06 AC	PEM2A
S001	Waterway	215 LF	R4SB1/2
S002	Waterway	455 LF	R4SB1/3
S003	Waterway	233 LF	N/A – Ephemeral
S004	Waterway	252 LF	N/A - Ephemeral
S005	Waterway	214 LF	R4SB3/4
S006	Waterway	185 LF	R4SB3
S007	Waterway	712 LF	R4SB4/7
S008	Waterway	336 LF	R3UB1
S009	Waterway	949 LF	R3UB1
S010	Waterway	12 LF	R2UB1x

AC = acre
LF = linear feet

3.1.1 WETLANDS

Wetland WL001 (Palustrine, Emergent)

Wetland WL001 is a linear emergent wetland within the northeastern extent of the LPG parcel. Approximately 0.02 acre of this wetland is within the study area. This wetland extends from a drainage outlet, from which it originates, in a northwestern direction toward Waterway S006, which directs this system into a plastic corrugated pipe beneath a paved parking lot on the LPG parcel. Wetland WL001 receives hydrology from overland flow and multiple storm drains. This wetland is not identified on the *National Wetland Inventory Map for Morgantown, West Virginia* (USFWS, 1981-2002); however, based on field observations, the Cowardin Classification for this system is a palustrine, emergent, persistent, temporarily flooded (PEM1A) system. Field conditions indicated that this wetland was dominated by hydrophytic vegetation, contained hydric soils, and exhibited wetland hydrology (see Attachment C for data form DP-1).

Wetland WL002 (Palustrine, Emergent/Scrub-Shrub)

Wetland WL002 is a linear emergent/scrub-shrub wetland within the northeastern extent of the LPG parcel. Approximately 0.06 acre (0.03 acre PEM; 0.03 PSS) of this wetland is within the study area. This wetland extends from its origin in a northwestern direction toward Waterway S005. This system, in addition to S005, is drained in a southwestern direction via plastic corrugated pipe beneath a paved parking lot. Wetland WL002 receives hydrology from groundwater and overland flow. This wetland is not identified on the *National Wetland Inventory Map for Morgantown, West Virginia* (USFWS, 1981-2002); however, based on field observations, the Cowardin Classification for this system is a palustrine, emergent, persistent / scrub-shrub, broad-leaved deciduous, temporarily flooded (PEM/SS1A) system. Field conditions indicated that this wetland was dominated by hydrophytic vegetation, contained hydric soils, and exhibited wetland hydrology (see Attachment C for data form DP-3).

Wetland WL003 (Palustrine, Emergent)

Wetland WL003 is a linear emergent wetland within the northern extent of the LPG parcel. Approximately 0.03 acre of this wetland is within the study area. This wetland originates at the terminus of Waterway S001, where the system was graded down to create the paved LPG stock pile/ material laydown area. This system receives hydrology from groundwater and over land flow and continues in a southeastern direction toward a pipe which conveys drainage from this system beneath the pavement. This wetland is not identified on the *National Wetland Inventory Map for Morgantown, West Virginia* (USFWS, 1981-2002); however, based on field observations, the Cowardin Classification for this system is a palustrine, emergent, persistent, temporarily flooded (PEM1A) system. Field conditions indicated that this wetland was dominated by hydrophytic vegetation, contained hydric soils, and exhibited wetland hydrology (see Attachment C for data form DP-5).

Wetland WL004 (Palustrine, Emergent)

Wetland WL004 is an emergent wetland surrounded by deciduous upland canopy within the northern extent of the LPG parcel. Approximately 0.08 acre of this wetland is within the study area. Wetland WL004 receives hydrology from a hillside groundwater seep and outlets in a southern direction until surface water goes subsurface. This wetland is not identified on the *National Wetland Inventory Map for Morgantown, West Virginia* (USFWS, 1981-2002); however, based on field observations, the Cowardin Classification for this system is a palustrine, emergent, persistent, temporarily flooded (PEM1A) system. Field conditions indicated that this wetland was dominated by hydrophytic vegetation, contained hydric soils, and exhibited wetland hydrology (see Attachment C for data form DP-7).

Wetland WL005 (Palustrine, Emergent/Scrub-Shrub/Forested)

Wetland WL005 is an emergent/scrub-shrub/forested wetland within the southern extent of the LPG parcel. Approximately 0.044 acre (0.004 acre PEM; 0.01 acre PSS; 0.03 acre PFO) of this wetland is within the study area. This wetland extends from the upstream left (south) bank of Waterway S009 and extends in a southwestern direction toward the right and left bank of Waterway S009. Wetland WL005 receives hydrology from groundwater and overland flow and outlets in a southwestern direction towards Waterway S009. This wetland is not identified on the *National Wetland Inventory Map for Morgantown, West Virginia* (USFWS, 1981-2002); however, based on field observations, the Cowardin Classification for this system is a palustrine, emergent, persistent/scrub-shrub/ forested, broad-leaved deciduous, temporarily flooded (PEM1/SS/FO1A) system. Field conditions indicated that this wetland was dominated by hydrophytic vegetation, contained hydric soils, and exhibited wetland hydrology (see Attachment C for data form DP-11).

Wetland WP006 (Palustrine, Emergent)

Wetland WP006 is an isolated emergent wetland within the southeastern extent of the LPG parcel. Approximately 0.06 acre of this wetland is within the study area. This wetland receives hydrology from overland flow and extends northwest along the western toe of slope adjacent to Heavy Haul Road and in a southwestern direction, parallel to the existing chain link fence, before terminating in an area of maintained lawn. This wetland is not identified on the *National Wetland Inventory Map for Morgantown, West Virginia* (USFWS, 1981-2002); however, based on field observations, the Cowardin Classification for this system is a palustrine, emergent, non-persistent, temporarily flooded (PEM2A) system. Field conditions indicated that this wetland was dominated by hydrophytic vegetation, contained hydric soils, and exhibited wetland hydrology (see Attachment C for data form DP-14).

3.1.2 STREAMS

Waterway S001 (Intermittent)

Waterway S001 is an intermittent stream located within the northern portion of the LPG parcel. S001 enters the study area from an outfall and flows in a southwestern direction before flowing over the excavated high wall that runs along the perimeter of the LPG parcel, and then transitions into an emergent wetland system (Wetland WL003). Approximately 215 linear feet (LF) of this stream is within the study area. This intermittent stream had an approximate top of bank width of 3.5 feet with an average top of bank height of 1.75 feet and an observed water depth of 0.6 inches at the time of the site investigation. Waterway S001 is not identified on the *NWI Morgantown, West Virginia quadrangle* (USFWS, 1981-2002); however, based on the field investigation, the Cowardin Classification for this system is a riverine, intermittent, streambed, bedrock/rubble (R4SB1/2) stream (see Attachment C for data form).

Waterway S002 (Intermittent)

Waterway S002 is an intermittent stream located within the northwestern portion of the LPG parcel. S002 enters the study area from the north and flows in a southeastern direction before flowing over the excavated high wall. Approximately 455 linear feet (LF) of this stream is within the study area. This intermittent stream had an approximate average top of bank width of 4.75 feet with an average top of bank height of 1.20 feet and an observed average water depth of 0.425 inches at the time of the site investigation. Waterway S002 is not identified on the *NWI Morgantown, West Virginia quadrangle* (USFWS, 1981-2002); however, based on the field investigation, the Cowardin Classification for this system is a riverine, intermittent, streambed, bedrock/cobble-gravel (R4SB1/3) stream (see Attachment C for data form).

S003 (Ephemeral)

Waterway S003 is an ephemeral channel located within the western portion of the LPG parcel. S003 flow discharges from a subterranean channel approximately 20 feet above the excavated high wall and flows in an eastern direction. Approximately 233 LF of this stream is within the study area. This ephemeral channel had an approximate top of bank width of 1.5 feet with an average top of bank height of 0.75 feet and an observed water depth of 0.25 inches at the time of the site investigation. Waterway S003 is not identified on the *NWI Morgantown, West Virginia quadrangle* (USFWS, 1981-2002) due to its ephemeral nature (see Attachment C for data form).

S004 (Ephemeral)

Waterway S004 is an ephemeral channel located within the western portion of the LPG parcel. S004 enters the study area as an erosional feature directing runoff from surrounding steep slopes in north eastern direction over the western edge of the excavated high wall. Approximately 252 LF of this stream is within the study area. This ephemeral channel had an approximate top of bank width of 2.0 feet with an average top of bank height of 0.7 feet. No flowing water was observed within the channel during the site investigation. Waterway S004 is not identified on the *NWI Morgantown, West Virginia quadrangle* (USFWS, 1981-2002) due to its ephemeral nature (see Attachment C for data form).

S005 (Intermittent)

Waterway S005 is an intermittent stream located in the northeastern portion of the LPG parcel. S005 enters the study area from a culvert that conveys the waterway beneath Clark Road and continues to flow in a southwestern direction toward its confluence with wetland system WL002. These systems are then concentrated into an 18-inch plastic corrugated pipe at the edge of a paved parking lot. Approximately 214 LF of this stream is within the study area. This intermittent stream had an approximate top of bank width of 2.25 feet with an average top of bank height of 6.0 inches and an observed water depth of 0.75 inches at the time of the site investigation. Waterway S005 is not identified on the *NWI Morgantown, West Virginia quadrangle* (USFWS, 1981-2002); however, based on the field investigation, the Cowardin Classification for this system is a riverine, intermittent, streambed, cobble-gravel/sand(R4SB3/4) stream (see Attachment C for data form).

S006 (Intermittent)

Waterway S006 is an intermittent stream located in the eastern portion of the LPG parcel. S006 enters the study area at an outfall that directs flow beneath Clark Road. This system continues in a southwest direction toward an 18-inch plastic corrugated pipe at the edge of a paved parking lot. Approximately 185 LF of this stream is within the study area. This intermittent stream had an approximate top of bank width of 0.7 feet with an average top of bank height of 4 feet and an observed water depth of 1 inch at the time of the site investigation. Waterway S006 is not identified on the *NWI Morgantown, West Virginia quadrangle* (USFWS, 1981-2002); however, based on the field investigation, the Cowardin Classification for this system is a riverine, intermittent, streambed, cobble-gravel (R4SB3) stream (see Attachment C for data form).

S007 (Intermittent)

Waterway S007 is an intermittent anthropogenic stream located along the western perimeter of the LPG parcel, parallel to the excavated highwall. S007 originates northeast of the confluence of Waterway S002 and S007 and conveys groundwater in a southwestern direction, around the perimeter of the property, collecting flow from Waterways S002, S003, and S004 before being

concentrated in an 18-inch plastic corrugated pipe and directly beneath a paved parking lot located on the parcel. Signs of sediment control were apparent within this anthropogenic channel. Approximately 712 LF of this stream is within the study area. This intermittent stream had an approximate top of bank width of 2.5 feet with an average top of bank height of 6 inches and an observed water depth of 2.4 inches at the time of the site investigation. Waterway S007 is not identified on the *NWI Morgantown, West Virginia quadrangle* (USFWS, 1981-2002); however, based on the field investigation, the Cowardin Classification for this system is a riverine, intermittent, streambed, sand/vegetated (R4SB4/7) stream (see Attachment C for data form).

S008 (Perennial)

Waterway S008 is an unimpacted perennial stream located in the southern portion of the study parcel, beyond the limits of LPG property. S008 enters the study area from a culvert and flows northwest toward its confluence with Waterway S009 (Coles Run). Approximately 336 LF of this stream is within the study area. This perennial stream had an approximate top of bank width of 4.5 feet with an average top of bank height of 6.0 inches and an observed water depth of 3.0 inches at the time of the site investigation. Waterway S008 is not identified on the *NWI Morgantown, West Virginia quadrangle* (USFWS, 1981-2002); however, based on the field investigation, the Cowardin Classification for this system is a riverine, upper perennial, unconsolidated bottom, cobble-gravel (R3UB1) stream (see Attachment C for data form).

S009 (Perennial / Coles Run)

Waterway S009 (Coles Run) is a perennial stream located in the southern portion of the study parcel, immediately adjacent to LPG-owned property. S009 enters the study area from a culvert and flows in a southwestern direction beyond the study area limits. S009 receives additional flow from Waterway S008 and S010. Approximately 949 LF of this stream is within the study area. This perennial stream had an approximate top of bank width of 3.0 feet with an average top of bank height of 8.0 inches and an observed water depth of 4.5 inches at the time of the site investigation. Waterway S009 is identified on the *NWI Morgantown, West Virginia quadrangle* (USFWS, 1981-2002) as a riverine, unknown perennial, unconsolidated bottom, permanently flooded (R5UBH) system. Based on the field investigation, the Cowardin Classification for this system is a riverine, upper perennial, unconsolidated bottom, cobble-gravel (R3UB1) stream (see Attachment C for data form).

S010 (Perennial)

Waterway S010 is a perennial anthropogenic stream located in the southern portion of the study parcel, immediately adjacent to LPG-owned property. S010 enters the study area from a large failed plastic corrugated pipe that appears to collectively pipe all northern site drainage and

groundwater in a southeastern direction toward Coles Run. Approximately 12 LF of this stream is within the study area. This perennial stream had an approximate top of bank width of 5.0 feet with an average top of bank height of 6.0 inches and an observed water depth of 1.0 inch at the time of the site investigation. Waterway S010 is not identified on the *NWI Morgantown, West Virginia quadrangle* (USFWS, 1981-2002); however, based on the field investigation, the Cowardin Classification for this system is a riverine, lower perennial, unconsolidated bottom, cobble-gravel, excavated (R2UB1x) stream (see Attachment C for data form).

3.2 STREAM IMPACTS AND ANALYSIS

In order to determine the pattern and extent of impacted streams within the LPG site, hydrographic data derived from the EPA exhibit dated 1/31/2018 were added to the data set by the process of "rubbersheeting," whereby the PDF exhibit was overlain and rotated in order to match a minimum of 3 similar points between the two exhibits. The stream shapefiles were then backchecked against publicly available digital elevation models in order to ensure that streams occupied historic valleys on the site. In addition, pre-impact topographic data was consulted to further validate location of pre-impact streams within the project area. See Attachment G for historical mapping of the project site and surrounding area.

Upstream and downstream start of stream impacts was based on loss of channel, either due to highwall excavation or piping of streamflow below the valley fill areas. Nomenclature of impacted stream segments S001-S006 were based on existing, upstream segment; the impacted segment of stream S008 was named according to its existing, downstream segment. See Attachment H (Stream Impacts Map) for delineation of impacted stream channels in the project area.

3.2.1 DETERMINATION OF STREAM IMPACTS

As discussed in preceding sections of this report, SWVM sites were located on representative segments of stream channel either upstream or downstream of impacted stream areas. Coles Run is the only mapped and named "blue-line" stream within the immediate project area (USGS 1997). Based on field observations and examination of topographic data, stream S005 was found to represent the upstream extent of Coles Run within the study area. As shown in Attachment H (Stream Impacts Map), the upstream segment of S005 displayed intermittent flow status. Due to site impacts, exact determination of the intermittent/perennial break point for this stream was not possible; therefore, for the purposes of these analyses, the intermittent/perennial break was based on probable pre-impact stream confluences. The historic confluence of intermittent streams S005 and S006 above this point likely contributed to the perennial status of this stream; stream S005

was divided into an intermittent (318 linear feet) and perennial segment (794 linear feet), with proxy SWVM scores used for each segment.
Due to the current, degraded condition of stream S008 downstream of the project area, a valid WVSCI score was unable to be calculated for this assessment reach (9 macroinvertebrate specimens recovered, minimum of 160 needed for WVSCI analyses). Therefore, to provide an accurate assessment score for the perennial segment of stream S005, the WVSCI score from SAR-07 was used to complete the SWVM form.

Streams S001, S002, S003, and S004 were impacted by excavation of the highwall feature at the western extents of the project area. Data collected at SARs above the highwall were used as proxy sites for lost stream resources in the impacted portions of the project area; in these areas, impacted stream lengths (as determined from the EPA impacts exhibit) were used in the SWVM spreadsheet in order to determine stream unit scores. The channel flow status of the stream segment above the highwall was applied to the EPA-derived, pre-impact length of the stream. Table 2 provides a summary of WVSWVM data across the study area, including flow regime, SAR number, impact length, SWVM index score, and unit score.

Table 2: Summary of WVSWVM assessments for Coles Run and its adjoining tributaries within LPG site boundaries

Stream*	Stream Type	Stream Assessment Reach (SAR)	Approximate Impact Length	SWVM Index Score	Impact Unit Score (Debit)**
S001	Intermittent	SAR-4	682	0.429	292.39
S002	Intermittent	SAR-1	993	0.706	701.42
S003	Ephemeral	SAR-2	1093	0.658	719.55
S004	Ephemeral	SAR-3	186	0.464	86.33
S005	Intermittent	SAR-5	265	0.362	95.97
S006	Intermittent	SAR-6	245	0.320	78.44
S007	Intermittent	N/A	N/A	N/A	N/A
S008	Perennial	SAR-7	447	0.344	153.67
S005	Perennial	SAR-8	794	0.327	259.73
S010	Perennial	N/A	N/A	N/A	N/A
Totals			**4,705 ft**		**2,387.50**

*Nomenclature of impacted stream segments S001-S006 based on existing, upstream segment. Impacted segment of stream S008 named according to existing, downstream segment.
**Stream impact unit scores (debits) based on proxy sites assessed on undisturbed stream segments adjacent or contiguous to impact site

Stream S007 was delineated as intermittent within the project area, with flow inputs derived from streams S004, S003, and S002. Stream S007 is an anthropogenic feature, resulting from large-scale landscape alterations and exhibiting a drainage pattern atypical for the Appalachian Plateau region. Currently stream S007 occupies a longitudinal depressional feature at the base of the excavated highwall, with flow inputs from streams above the highwall face. No assessments of stream function were conducted on S007 due to its relatively recent origin and degraded, atypical condition. Flows from S007 are channelized and directed into the stormwater network servicing the LPG site.

Stream S010 was delineated as perennial, with a direct confluence to Coles Run approximately 12 ft downstream of a 60" pipe outlet; flows are likely derived from piped stream flow and the adjacent stormwater network. The length of this stream and its anthropogenic origin eliminated the possibility of performing a stream assessment in this area.

4.0 CONCLUSIONS

As discussed in the preceding sections of the report, the final generation of impact unit scores via the WVSWVM spreadsheet are based on the results of a number of field-based, qualitative, and quantitative stream assessments. Based on these assessments, stream impacts at the project site resulted in a total of 2,387.5 stream debits. See Table 1 for a breakdown of stream impact lengths and representative impact unit scores assessed on a per-stream basis for the LPG site.

5.0 LEVEL OF CARE

The wetland and stream delineation and assessment services provided by CEI were conducted in a manner consistent with the criteria contained in USACE's 1987 Manual and 2012 Regional Supplement, with a level of care and skill ordinarily exercised by members of the environmental consulting profession practicing contemporaneously under similar conditions in the region. It must be recognized that jurisdictional delineations were based on field observations and CEI's professional experience and interpretation of the criteria in the 1987 Manual and 2012 Regional Supplement at the time of our fieldwork in May 2018. Wetland determinations may change subsequent to CEI's delineation based on changes in the regulatory criteria, seasonal variations in hydrology, alterations to drainage patterns, and other human activities and/or land disturbances. Wetland boundaries, as currently defined for regulatory purposes, can only be verified through a review by the U.S. Army Corps of Engineers and/or the West Virginia Department of Environmental Protection in consultation with the U.S. Environmental Protection Agency and U.S. Fish and Wildlife Service.

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