Wetland Delineation and Stream Identification Report

Equitrans, L.P. Ohio Valley Connector Expansion Wetzel County, West Virginia

GAI Project Number: R210388.00

September 2021



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1.0 Introduction

The Equitrans, L.P. (Equitrans) Ohio Valley Connector Expansion (Project) is located in Wetzel County, West Virginia (WV) as shown on **Figure 1**. The Project includes:

- Approximately 3.7 miles of new 24-inch-diameter natural gas pipeline (H-326);
- Approximately 0.02 mile of new eight-inch-diameter natural gas pipeline (H-329);
- Approximately 0.8 mile of new 16-inch-diameter natural gas pipeline (H-330);
- Approximately 0.09 mile of new 16-inch-diameter natural gas pipeline (H-330 Spur);
- Approximately 0.03 mile of new 12-inch-diameter natural gas pipeline (Logansport Spur) located within existing gravel and fenced facility area;
- Addition of one Mars 100 compressor unit to support the sole existing Mars 100 compressor unit, at the extant Corona Compressor Station, with supplementary mechanical and electrical equipment to support the horsepower increase;
- Additional new ancillary facilities, such as mainline valves, metering and regulating equipment, and internal inspection device launchers and receivers; and
- New and use of existing temporary and permanent access roads, and contractor yards.

GAI Consultants, Inc. (GAI), on behalf of Equitrans, conducted wetland delineations and stream investigations of the Project study area on multiple dates between July 12 and September 16, 2021. GAI identified the boundaries of waterbodies and wetlands located within approximately 206 acres encompassing proposed Project components. This report describes the methods and results of the wetland delineations and stream investigations conducted within the Project study area.

2.0 Methods

2.1 Wetlands

Wetland delineations were conducted in accordance with the 1987 United States Army Corps of Engineers (USACE) Wetlands Delineation Manual (Environmental Laboratory, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountain and Piedmont Region (Version 2.0) (USACE, 2012). Wetlands were classified using the Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al., 1979). Classification of the indicator status of vegetation is based on the North American Digital Flora: National Wetland Plant list, Version 3.4 (USACE, 2018).

Field observations were supplemented with an intensive review of United States Fish and Wildlife Service's National Wetlands Inventory mapping, USDA-NRCS soils mapping, and local landscape topography/morphology to provide a conservative determination of wetlands present within the study area. Professional judgment was used to determine whether hydrophytic vegetation and hydric soils existed within the identified wetlands if onsite data was ambiguous. Judgmental soil test pits were taken within the study area at the discretion of the delineator to confirm the absence of wetlands (e.g., in potentially wet locations, or areas where topography could support the presence of a wetland).

Wetland boundaries were marked in the field using pink "Wetland Boundary" flagging tape. The flags were placed in a manner to encompass the wetland area. If a wetland extended outside the surveyed study area, the wetland boundary was designated as "open-ended." Each wetland feature was given a unique map designation and each flag location was recorded using a Trimble GEO XH model global positioning system mapping grade unit with the capability of sub-meter accuracy.

2.2 Streams

Watercourses exhibiting a bed and bank within the study area were field-classified as perennial, intermittent, or ephemeral, based on estimated permanence or duration of flow in accordance with the



Navigable Waters Protection Rule (final rule signed January 23, 2020). Generally, perennial waterbodies have surface water flowing continuously year-round. Intermittent waterbodies have surface water flowing continuously during certain times of the year and more than in direct response to precipitation (e.g., seasonally when the groundwater table is elevated or when snowpack melts). Ephemeral waterbodies have surface water flowing or pooling water only in direct response to precipitation (e.g., rain or snow fall).

Ditches are constructed or excavated channels used to convey water, and may or may not be jurisdictional. Basic bed/bank and channel dimensions and hydrological, biological, and visual water quality characteristics were observed and recorded during the field visit. As part of the desktop review process, identified streams were also reviewed for applicable state classification or designation criteria.

Streams were delineated using white flagging tape placed to locate the centerline of the stream channel for any stream that has a top-of-bank width of 10 feet or less. For any stream that has a width greater than 10 feet, flagging was placed on both banks to locate the top-of-banks of the stream. Each waterbody feature was given a unique map designation and each flag location was recorded using a Trimble GEO XH model global positioning system mapping grade unit with the capability of sub-meter accuracy.

3.0 Results

Project study area is within the Appalachian Plateau physiographic province with general topography including ridgetops, steep slopes, and valley. Land use within the Project study area consists primarily of forested land, rights-of-way, and oil and gas infrastructure.

The Project study areas are located within the following Hydrologic Unit Code-12 (HUC-12) watersheds: North Fork Fishing Creek (HUC-12 050302010202), Headwaters South Fork Fishing Creek (HUC-12 050302010201), Outlet South Fork Fishing Creek (HUC-12 050302010203), and Coons Run-West Fork River (HUC-12 050200020604).

A total of ten perennial stream segments, eight intermittent stream segments, and eleven ephemeral stream segment were identified and delineated within the Project study area, along with twelve palustrine emergent wetlands and one palustrine scrub-shrub wetland (**Figure 2**).

No waterbodies identified within the Project study area are located within a WV coastal zone and are not designated or nominated for designation as national or state wild or scenic rivers. No reservoirs, federal or state parks, forests, or recreation areas were identified within the Project study area.

In support of field findings, the identified wetlands and waterbodies are summarized in **Tables 1 and 2**. Color photographs of each wetland and waterbody accompany these tables in **Appendices A and B**. Wetland and upland data forms corresponding with each identified wetland are provided in **Appendices C and D**, respectively. The resumes of the personnel conducting wetland delineations and stream investigations are provided in **Appendix E**. Soil map units are provided on Figure 2 and correspond with soil descriptions found in **Appendix F**.

4.0 Conclusions

Wetland delineations and stream investigations of the Project study area were conducted from July-September 2021, and covered approximately 206 acres encompassing all proposed and existing access road and Project components. Twenty-nine waterbodies and thirteen wetlands were identified within the study area. The results of the Wetland delineations and stream investigations are provided in this report.

All statements in this document pertaining to the jurisdictional status of streams and wetlands regarding the USACE and state regulations represent the opinion of GAI and are based on present USACE guidance. The jurisdictional status of these features may be confirmed by a USACE Jurisdictional Determination and/or by state agencies.



5.0 References

- Cowardin, D.M., Carter, V., Golet, F.C., and La Roe, E.T. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. Publication No. FWS/OBS-79/31. United States Department of the Interior, Fish and Wildlife Service, Washington, D.C.
- Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual. Technical Report* Y-87-1. United States Department of the Army, United States Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.
- United States Army Corps of Engineers. 2018. *National Wetland Plant List, Version 3.4* http://wetland_plants.usace.army.mil/, U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, New Hampshire.
- United States Army Corps of Engineers. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountain and Piedmont Region, Version 2.0. ERDC/EL TR-12.1. United States Army Engineer Research and Development Center, Vicksburg, Mississippi.
- United States Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS). 2020. Field Office Technical Guide, WETS Climatic Data for Moundsville, WV. Available at http://efotg.sc.egov.usda.gov



TABLES



Table 1
Wetlands Identified Within the Project Study Area

Wetland ¹	Latitude ²	Longitude ²	Туре	NWI Classification	Size (acres) ³
WWV-CDK-001	39.557237	-80.549295	Palustrine Emergent	None	0.07
WWV-CDK-002	39.556039	-80.548314	Palustrine Emergent	None	0.82 (open ended)
WWV-CDK-003	39.554454	-80.548736	Palustrine Scrub-Shrub	None	0.01
WWV-JJP-001	39.558469	-80.529874	Palustrine Emergent	None	0.01 (open ended)
WWV-JJP-002	39.559422	-80.531004	Palustrine Emergent	None	0.01
WWV-JJP-003	39.559949	-80.530198	Palustrine Emergent	None	0.04
WWV-JJP-004	39.559591	-80.531356	Palustrine Emergent	None	0.02
WWV-JJP-005	39.553983	-80.522480	Palustrine Emergent	None	0.01
WWV-JJP-006	39.554488	-80.522991	Palustrine Emergent	None	0.02
WWV-JJP-007	39.547447	-80.512521	Palustrine Emergent	None	0.03
WWV-JJP-008	39.547366	-80.512141	Palustrine Emergent	None	0.01
WWV-JJP-009	39.539515	-80.505219	Palustrine Emergent	None	0.02
WWV-JJP-013	39.541641	-80.653371	Palustrine Emergent	None	0.07

Notes:

- GAI map designation.
- North American Datum, 1983.
- Total wetland size within the study area, as delineated during the environmental field review. Wetlands may extend beyond the study area boundary if listed as open ended.



Table 2
Waterbodies Identified Within the Project Study Area

Feature Designation ¹	Latitude ²	Longitude ²	Waterbody	Stream Type	Impaired ³	High Quality⁴	Wild Trout⁵	Stocked Trout ⁶	Bank-to- Bank Width (feet) ⁷	Channel Depth (feet)	Water Width (feet)	Water Depth (feet)
SWV-ALS-001	39.562491	-80.543852	Mobley Run	Perennial	Tier 1	No	No	No	8	2	6.5	0.7
SWV-ALS-003	39.541464 39.541585	-80.510234 -80.510189	UNT to North Fork Fishing Creek	Ephemeral Intermittent	Tier 1	No	No	No	4 5	0.5 1.5	0 1	0 0.1
SWV-ALS-004	39.547159	-80.513038	UNT to North Fork Fishing Creek	Intermittent	Tier 1	No	No	No	5	1	2	0.3
SWV-ALS-005	39.547677	-80.512245	North Fork Fishing Creek	Perennial	Tier 1	Yes	No	Yes	8	2	7	0.6
SWV-CDK-001	39.557002	-80.549515	Mobley Run	Perennial	Tier 1	No	No	No	5	1.5	3.5	0.2
SWV-CDK-002	39.556358	-80.549577	North Fork Fishing Creek	Perennial	Tier 1	Yes	No	Yes	30	2	25	1-2
SWV-CDK-003	39.557392	-80.550865	UNT to North Fork Fishing Creek	Ephemeral	Tier 1	No	No	No	4	1	1	<0.1
SWV-JJP-001	39.567321	-80.528633	UNT to North Fork Fishing Creek	Ephemeral	Tier 1	No	No	No	2	0.4	0	0
SWV-JJP-002	39.554227	-80.527932	UNT to North Fork Fishing Creek	Intermittent	Tier 1	No	No	No	5	2	2	0.3
SWV-JJP-003	39.554442	-80.527951	UNT to North Fork Fishing Creek	Intermittent	Tier 1	No	No	No	4	1	0	0
SWV-JJP-004	39.555633 39.555554	-80.530768 -80.530749	UNT to North Fork Fishing Creek	Ephemeral Intermittent	Tier 1	No	No	No	3 4	0.5 2	0 0	0 0
SWV-JJP-005	39.559448	-80.530861	UNT to North Fork Fishing Creek	Intermittent	Tier 1	No	No	No	3	0.5	2	<0.1



Feature Designation ¹	Latitude ²	Longitude ²	Waterbody	Stream Type	Impaired ³	High Quality⁴	Wild Trout⁵	Stocked Trout ⁶	Bank-to- Bank Width (feet) ⁷	Channel Depth (feet)	Water Width (feet)	Water Depth (feet)
SWV-JJP-006	39.560258	-80.532211	UNT to North Fork Fishing Creek	Ephemeral	Tier 1	No	No	No	3	0.8	0	0
SWV-JJP-007	39.560165	-80.532709	UNT to North Fork Fishing Creek	Perennial	Tier 1	No	No	No	10	3	3	0.3
SWV-JJP-008	39.559707	-80.532838	UNT to North Fork Fishing Creek	Ephemeral	Tier 1	No	No	No	3	1	0	0
SWV-JJP-009	39.562563	-80.543313	UNT to Mobley Run	Perennial	Tier 1	No	No	No	6	3	4	0.5
SWV-JJP-010	39.558089	-80.547688	UNT to Mobley Run	Intermittent	Tier 1	No	No	No	4.5	2	0	0
SWV-JJP-011	39.561502	-80.536112	UNT to North Fork Fishing Creek	Ephemeral	Tier 1	No	No	No	4	1.5	0	0
SWV-JJP-012	39.557011	-80.523470	UNT to Wiley Fork	Ephemeral	Tier 1	No	No	No	5	2	0	0
SWV-JJP-013	39.555113	-80.523494	UNT to Wiley Fork	Ephemeral	Tier 1	No	No	No	4	1.5	0	0
SWV-JJP-014	39.556340	-80.520964	UNT to Wiley Fork	Perennial	Tier 1	No	No	No	5	2	3	0.5
SWV-JJP-015	39.554784	-80.522504	Wiley Fork	Perennial	Tier 1	No	No	No	20	3.5	12	0.5
SWV-JJP-016	39.540922	-80.511052	UNT to Pickenpaw Run	Ephemeral	Tier 1	No	No	No	2	1	0	0
SWV-JJP-017	39.547333	-80512033	UNT to North Fork Fishing Creek	Intermittent	Tier 1	No	No	No	2	0.7	2	0.3
SWV-JJP-018	39.541864	-80.503460	UNT to North Fork Fishing Creek	Ephemeral	Tier 1	No	No	No	4	2	0	0
SWV-JJP-023	39.542670	-80.654752	South Fork Fishing Creek	Perennial	Tier 1	Yes	No	Yes	85	10	65	5
SWV-JJP-024	39.582960	-80.579521	Wiley Fork	Perennial	Tier 1	No	No	No	25	4	20	1.5

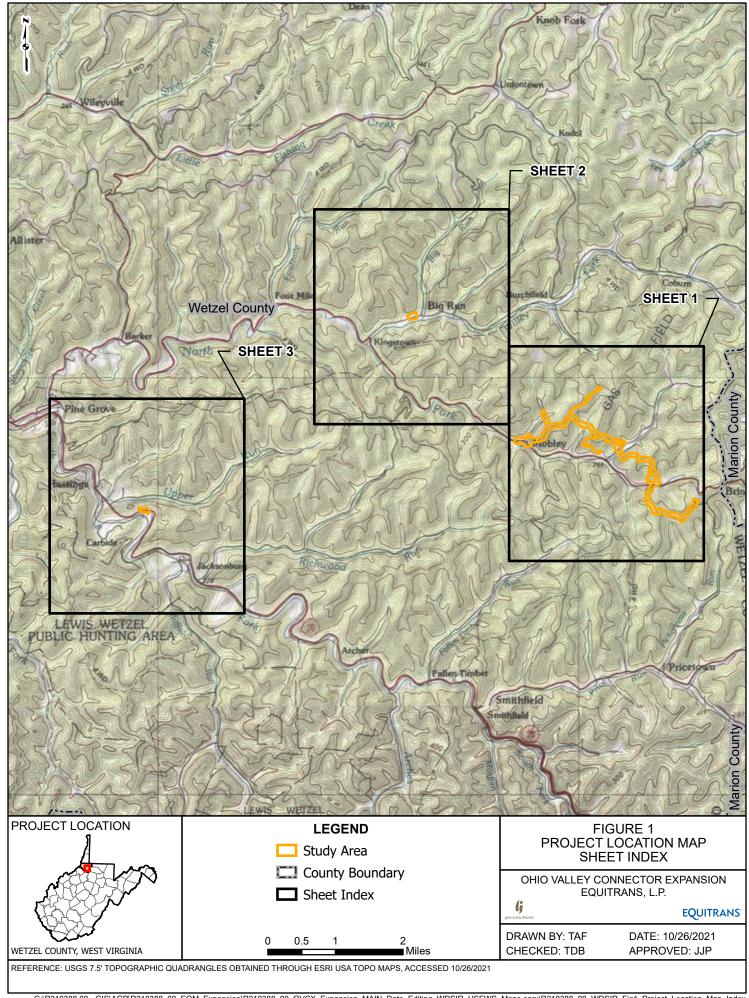


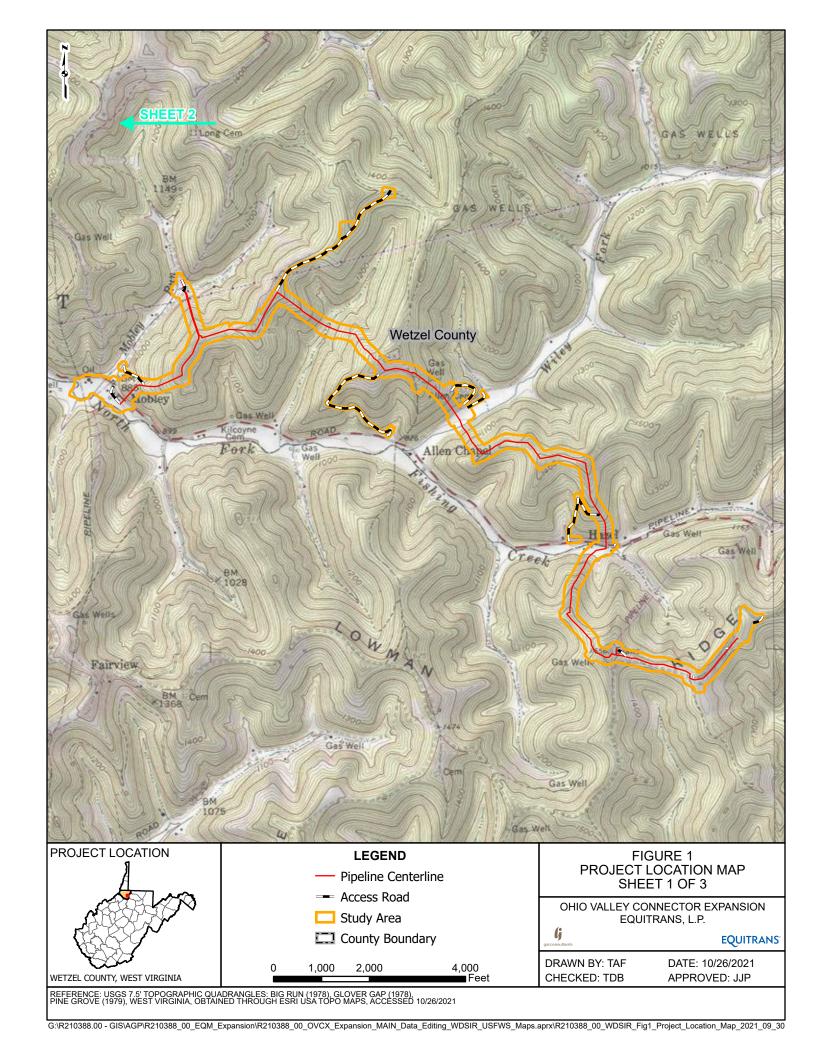
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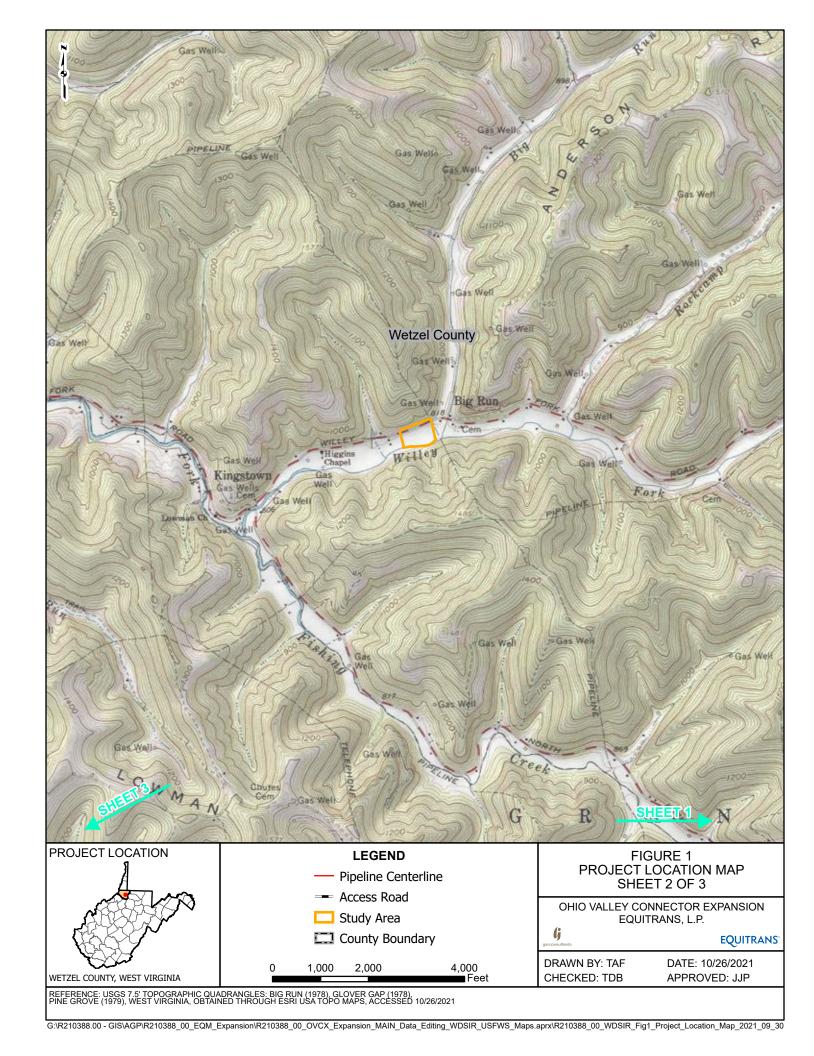
- GAI map designation.
- Coordinates provided in NAD 83.
- As identified by the WV Department of Environmental Protection: Tier 1 Maintains and protects existing uses of a water body and the water quality conditions necessary to support such uses. A waterbody that is listed as impaired on the states 303(d) list is considered a Tier 1 water as it pertains to the specific pollutant listed. Tier 2 Maintains and protects "high quality" waters water bodies where the level of water quality exceeds levels necessary to support recreation and wildlife and the propagation and maintenance of fish and other aquatic life. Tier 2 is the default assignment for a waterbody not listed as impaired on the states 303(d) list. Tier 3 Maintains and protects water quality in outstanding national resource waters. The Section 303(d) list and shapefiles of Tier 3 waters are available at http://www.dep.wv.gov/WWE/Programs/wqs/Pages/default.aspx.
- As identified by the WV Division of Natural Resources (WVDNR)-Wildlife Resource Section. 2001. West Virginia High Quality Streams Sixth Edition. Streams listed in this edition include all streams which are stocked with trout or that contain native trout populations as well as warm water streams over five miles in length with desirable fish populations and public utilization thereof.
- In WV, streams designated as Trout waters are derived from Appendix A of the Requirements Governing Water Quality Standards Rule Title 47CRS2 contains a partial list of streams designated as B2 Trout Waters.
- Streams receiving stocking of trout or other fishes by the WVDNR or other approved entity as listed at http://www.mapwv.gov/huntfish/map.html#section=fishing.
- Width from tops of stream banks (existing pre-construction conditions).

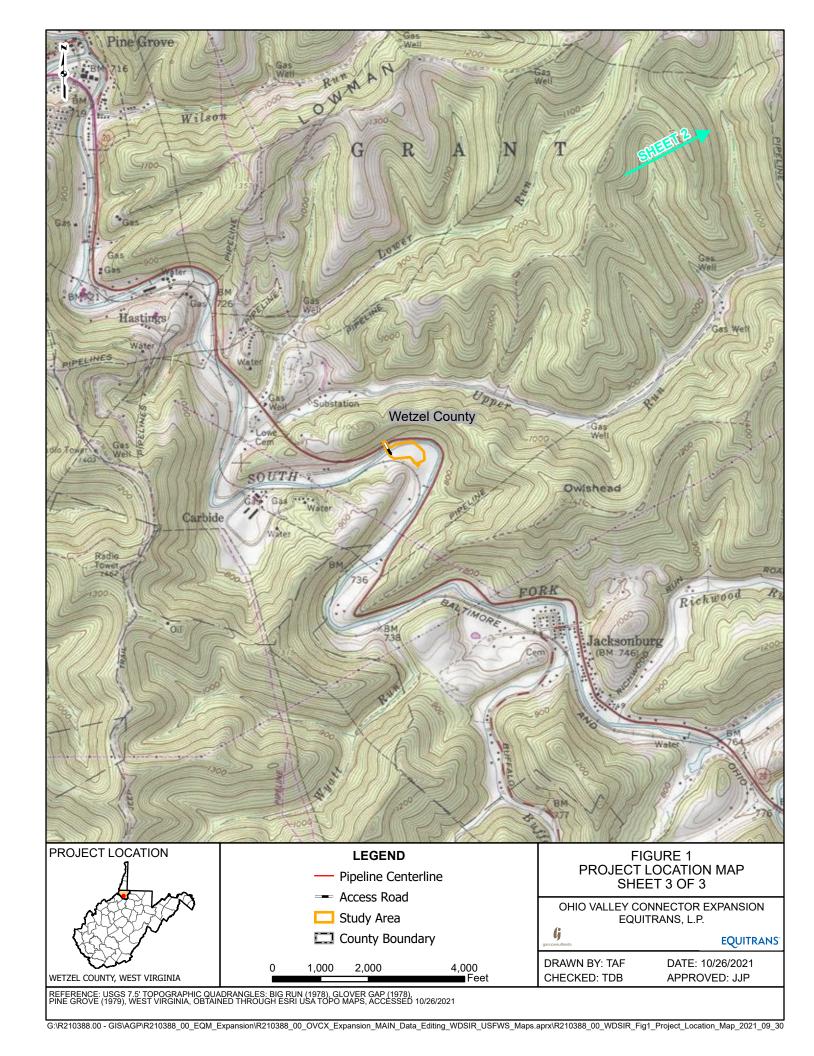


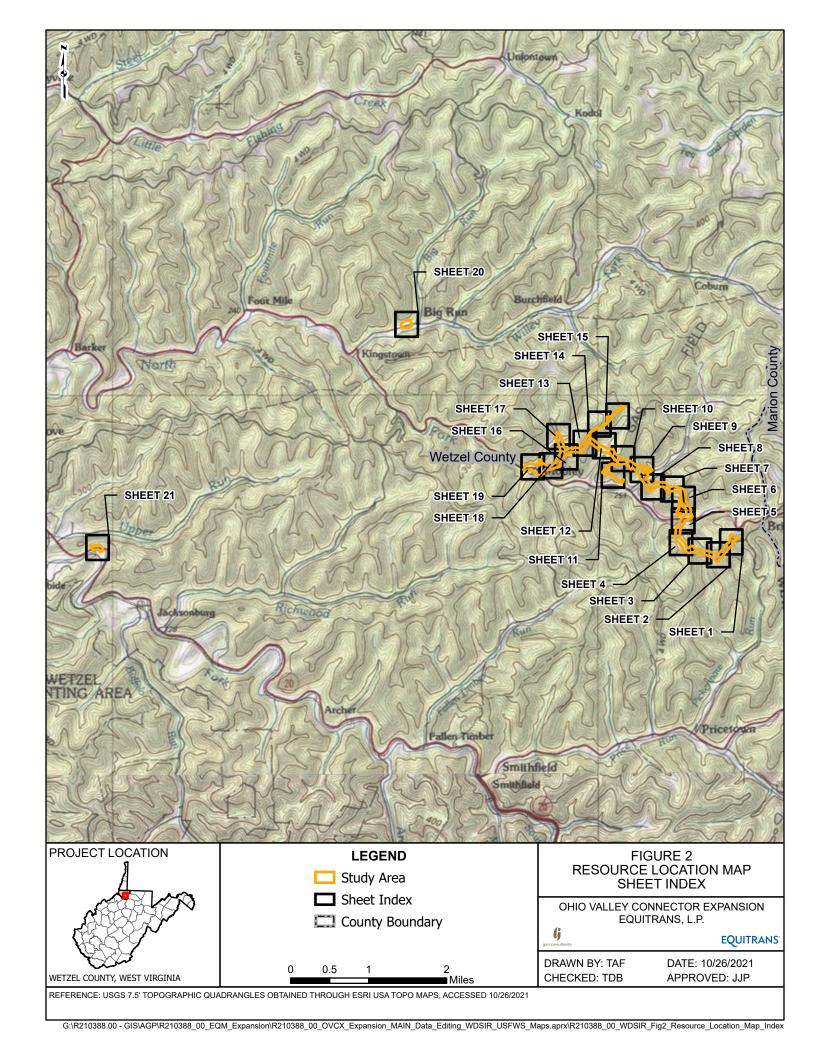
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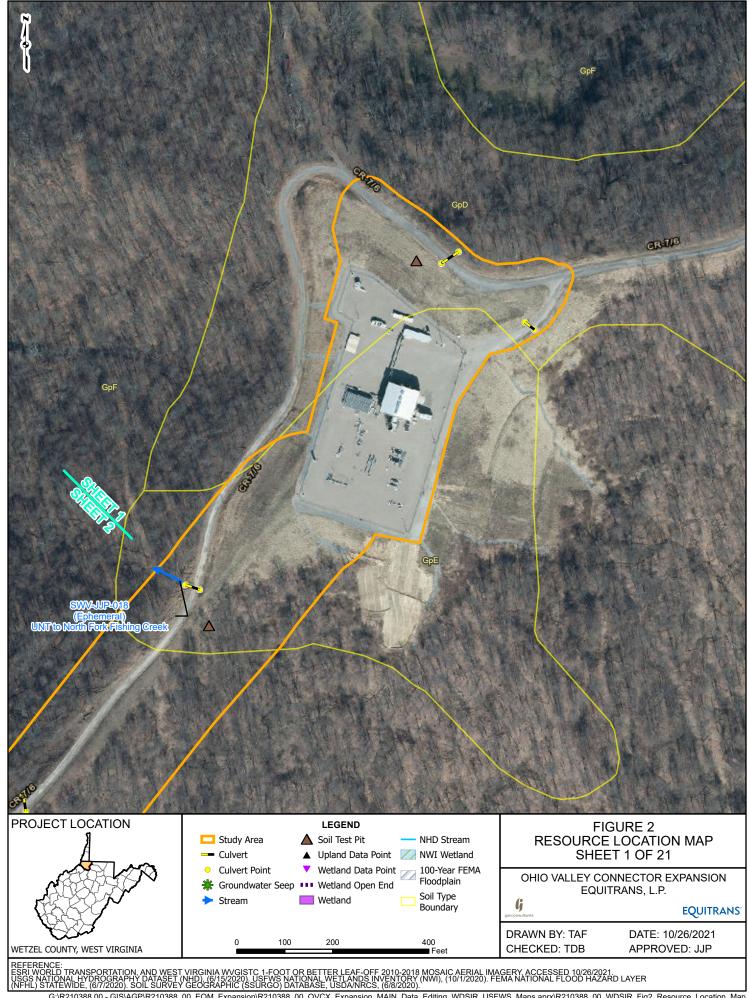


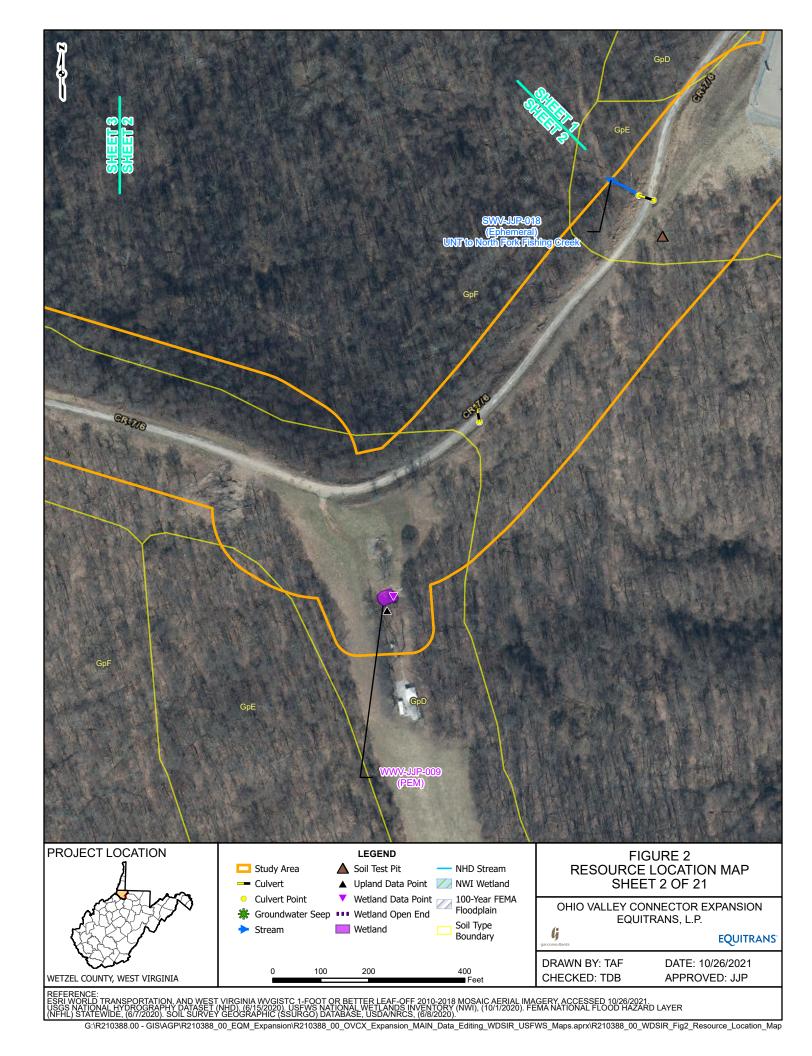


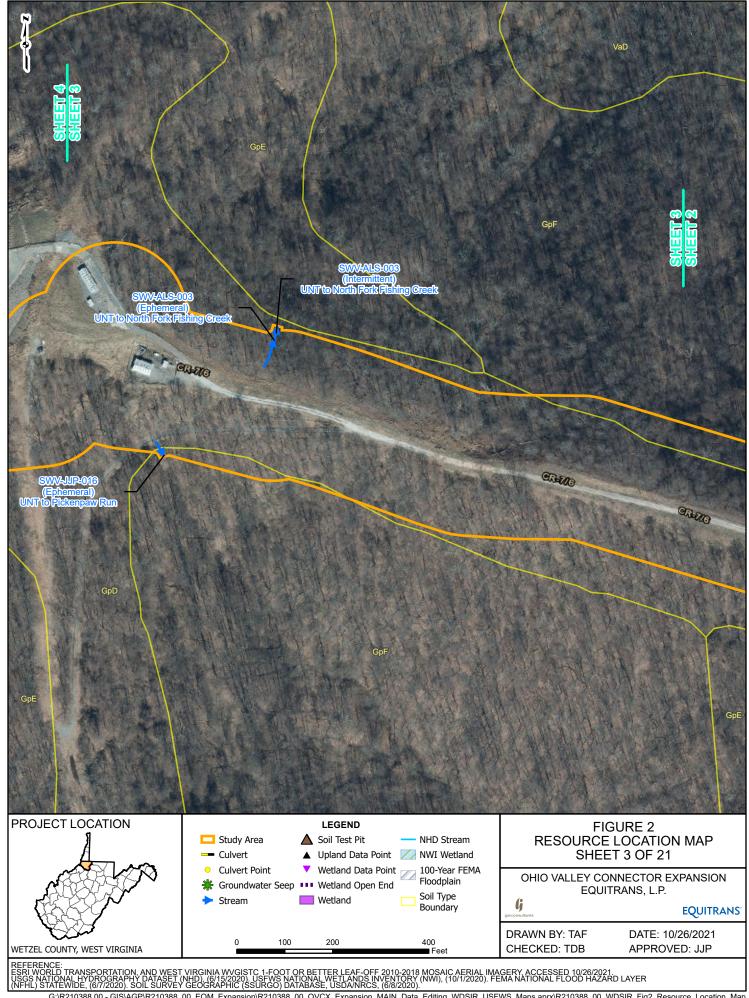


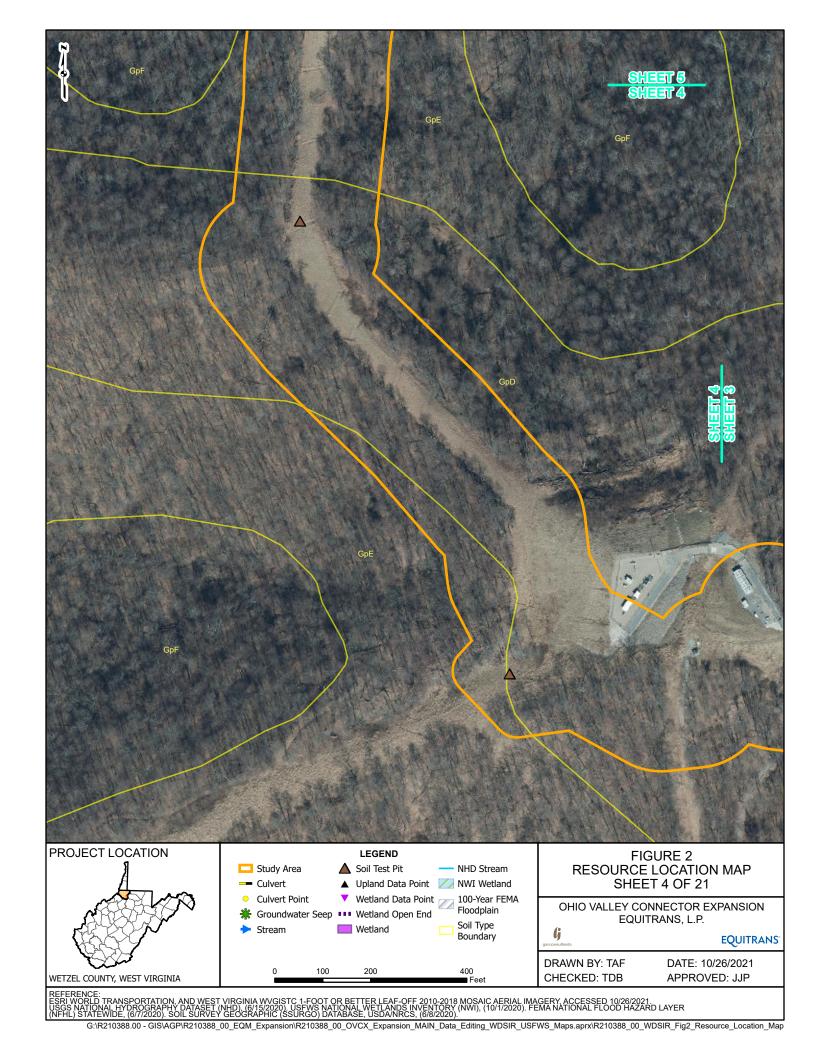


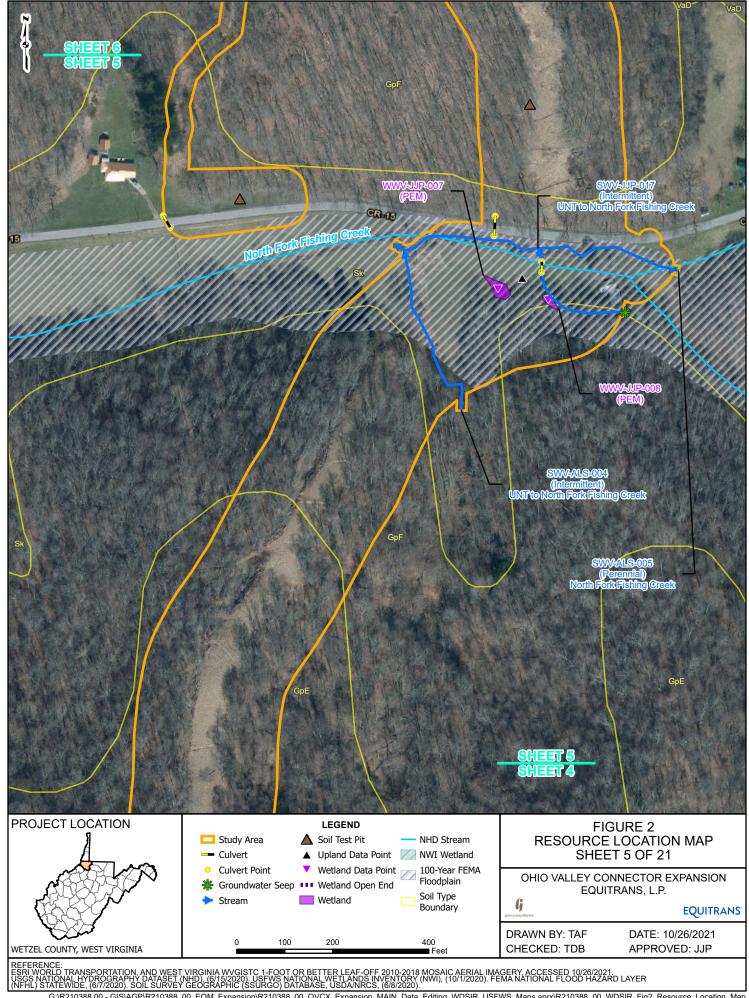


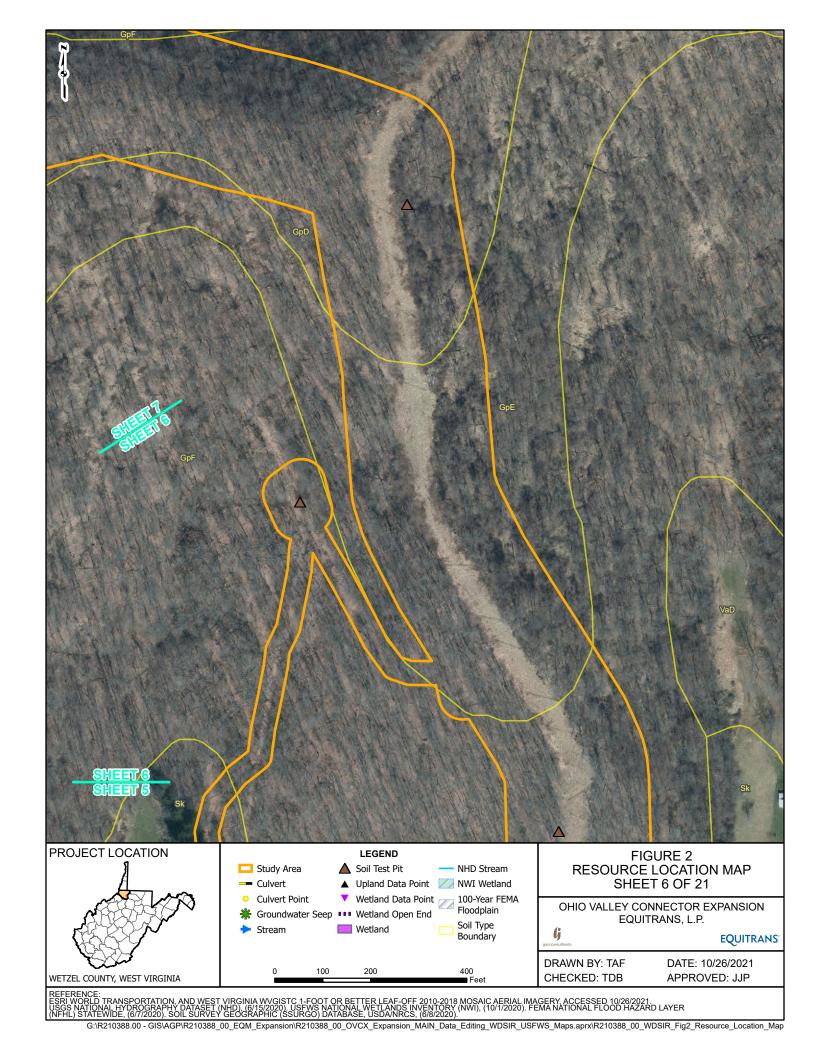


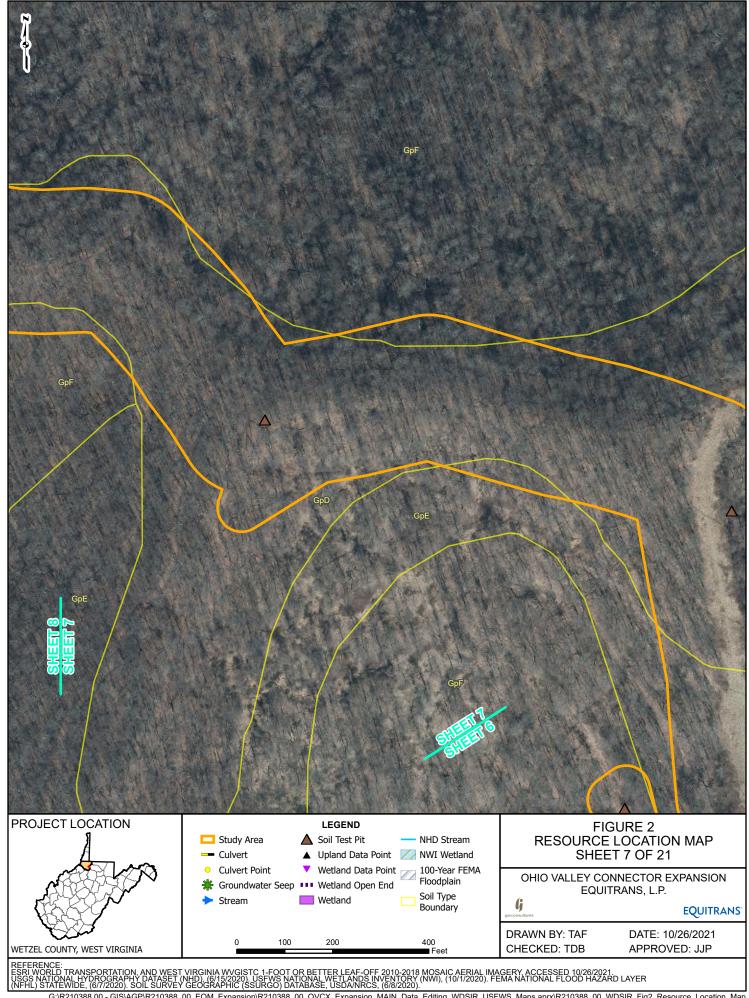


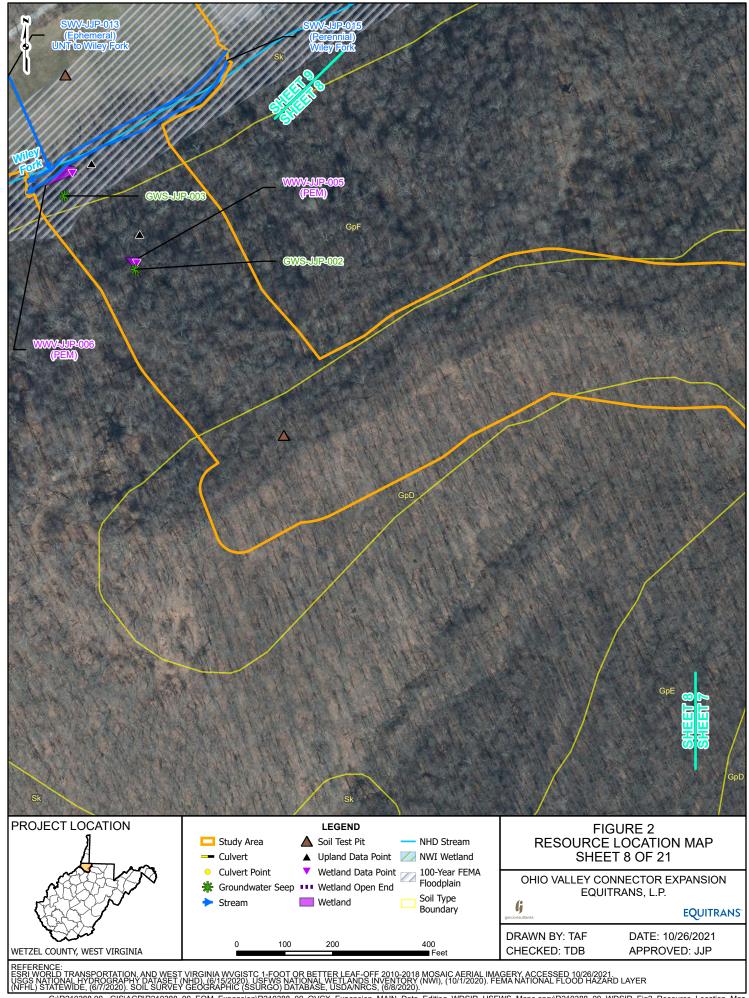


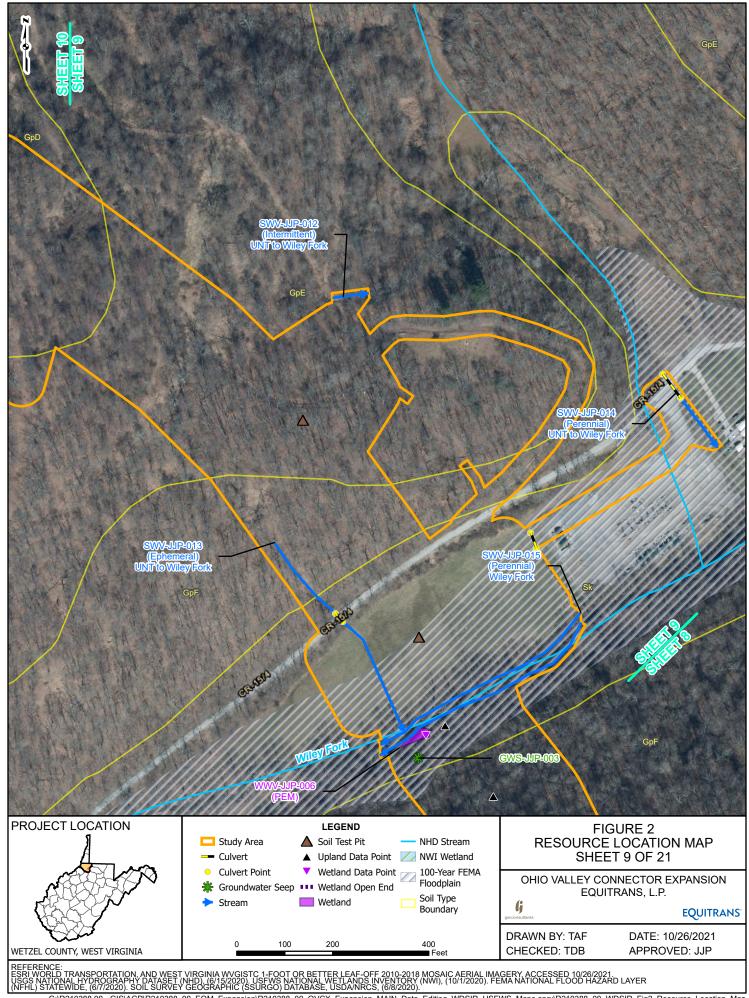


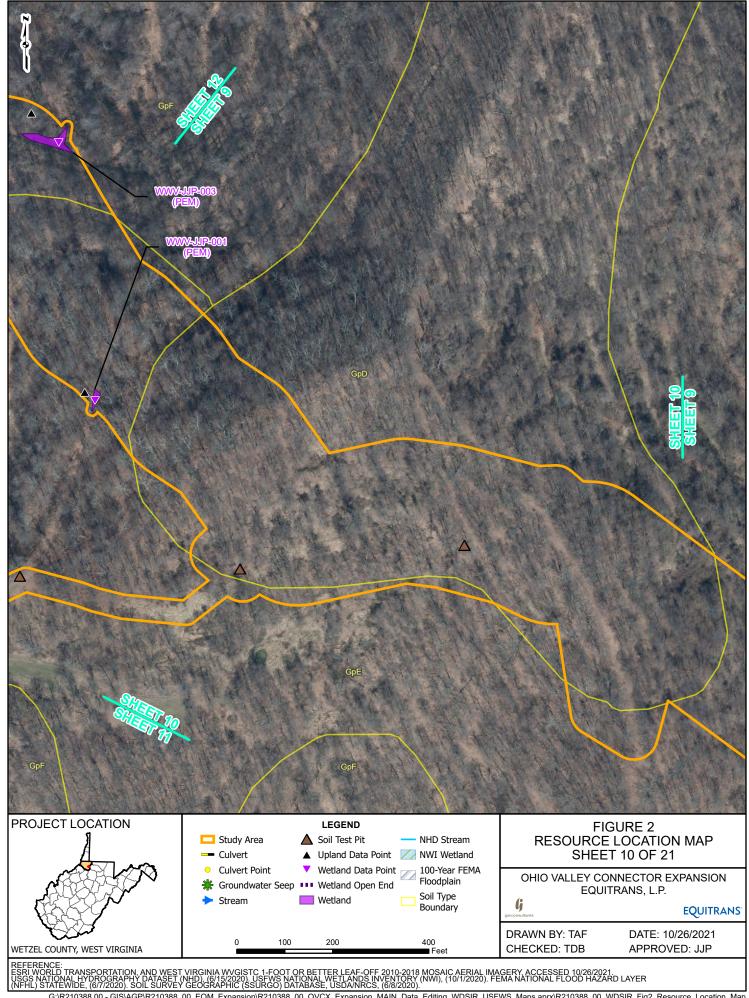


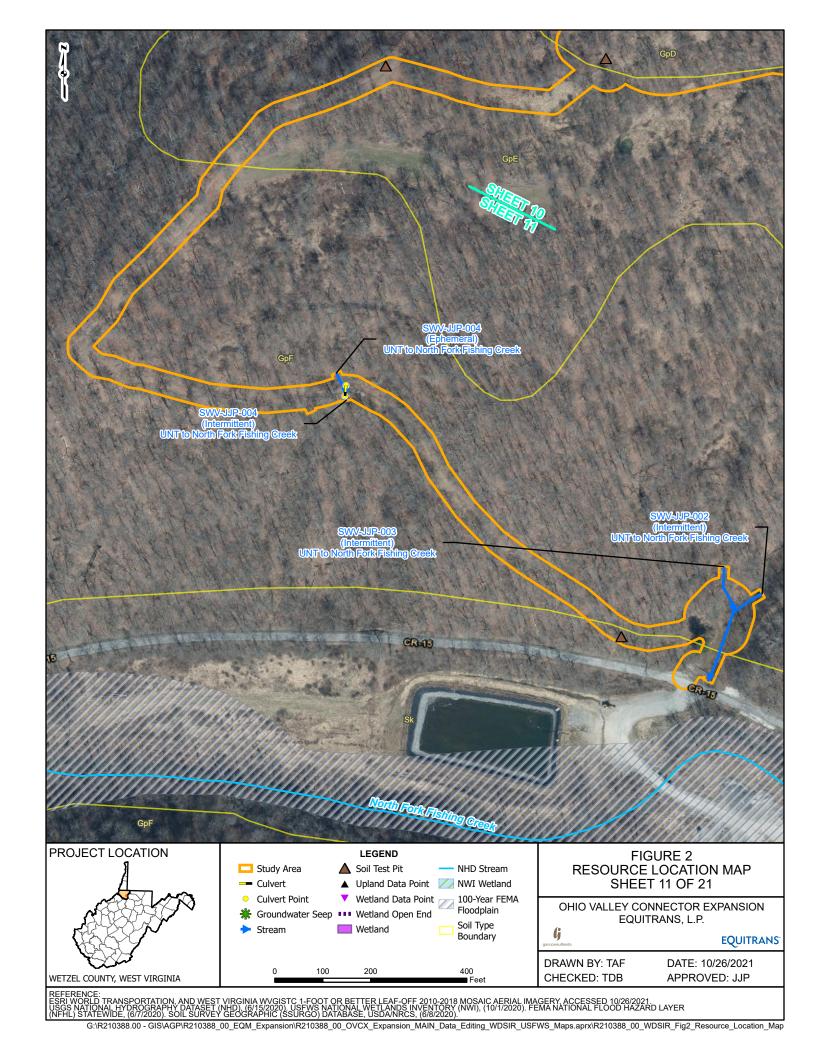


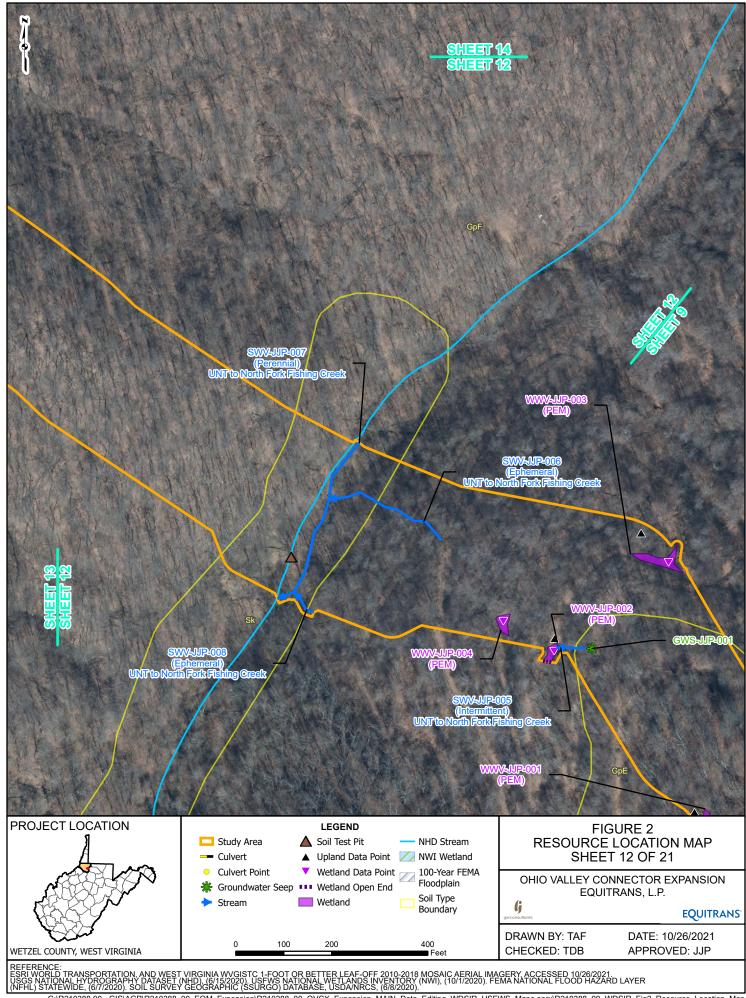




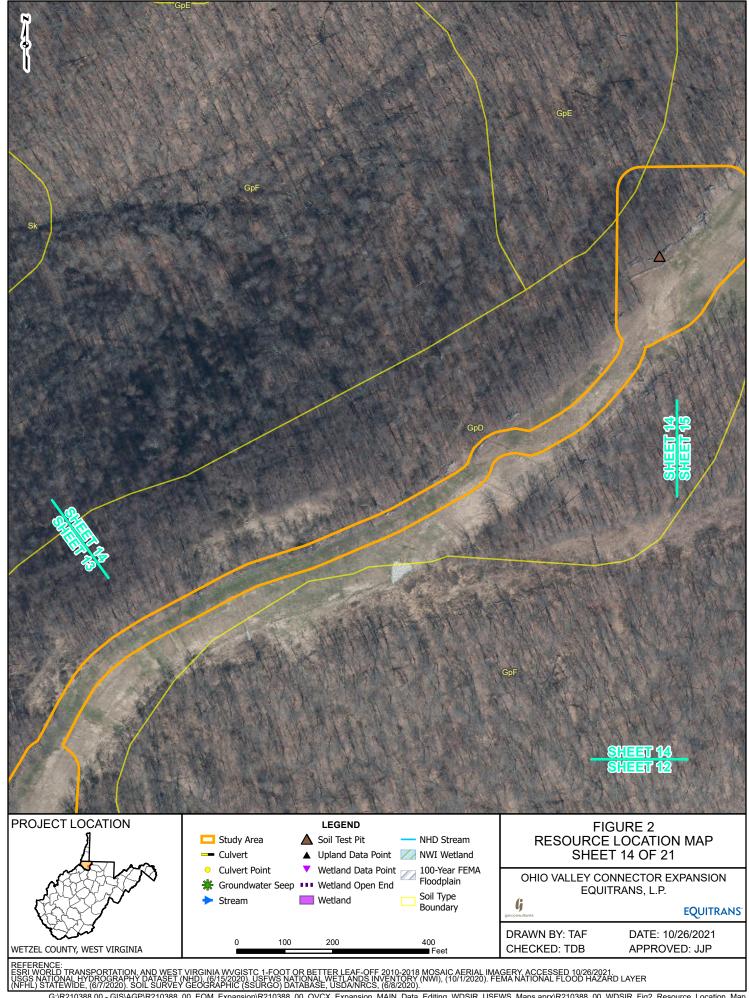


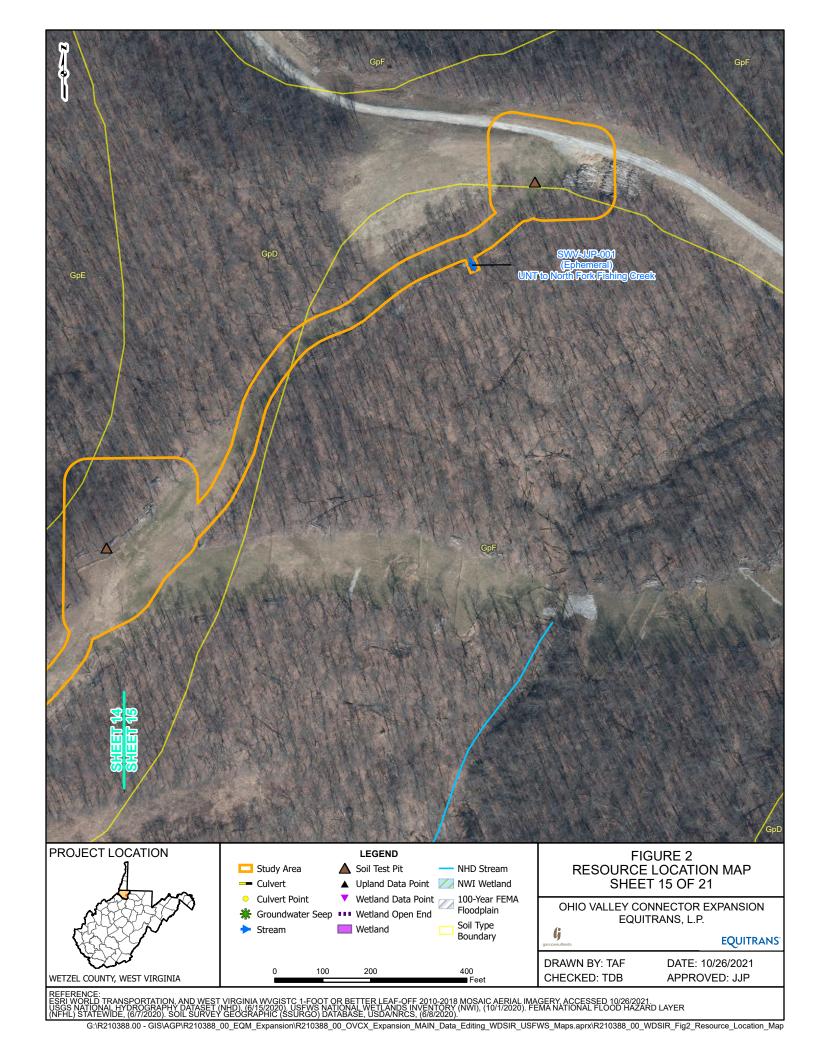


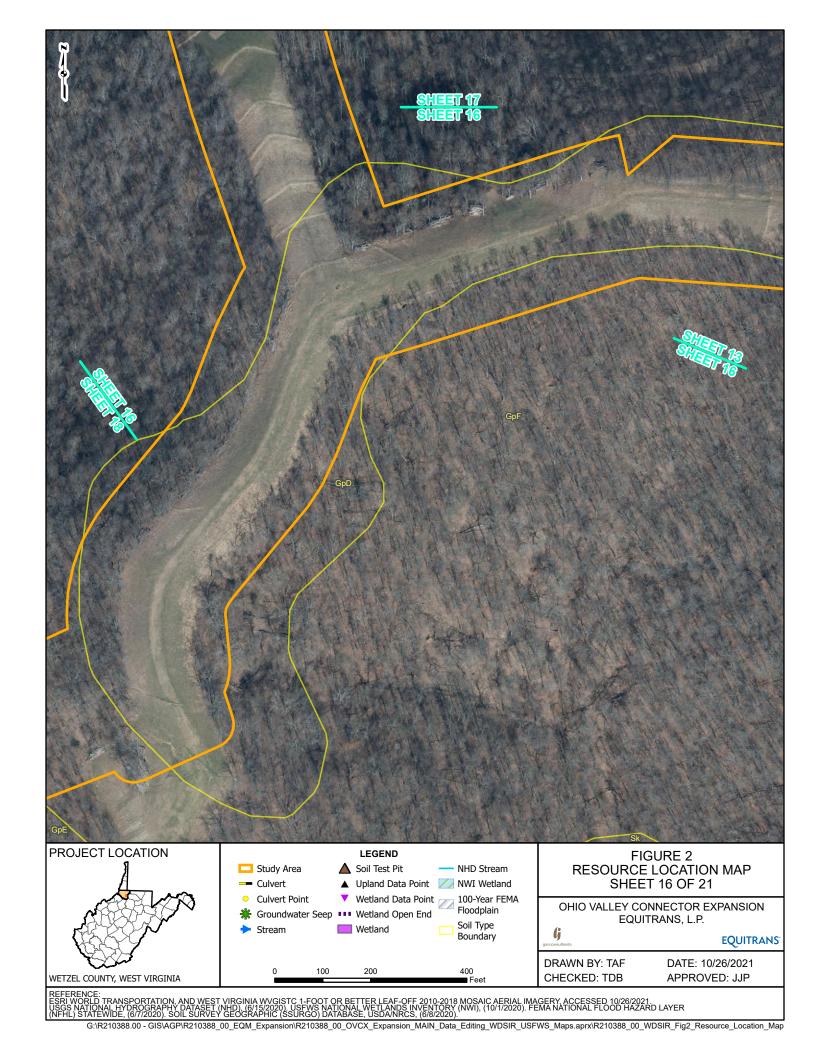


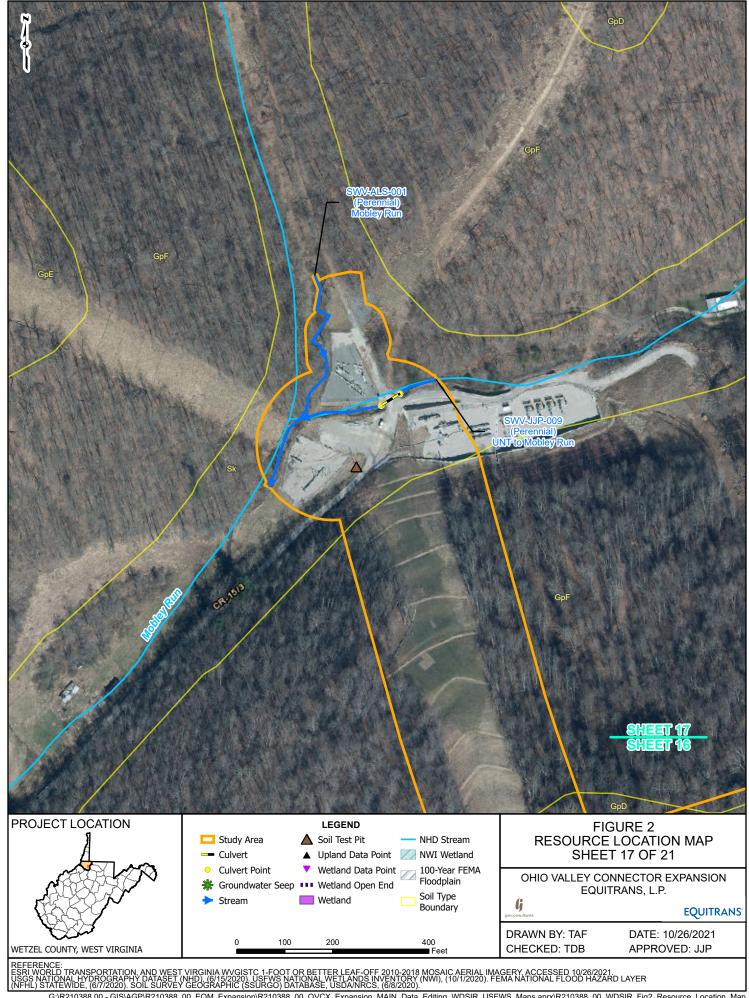


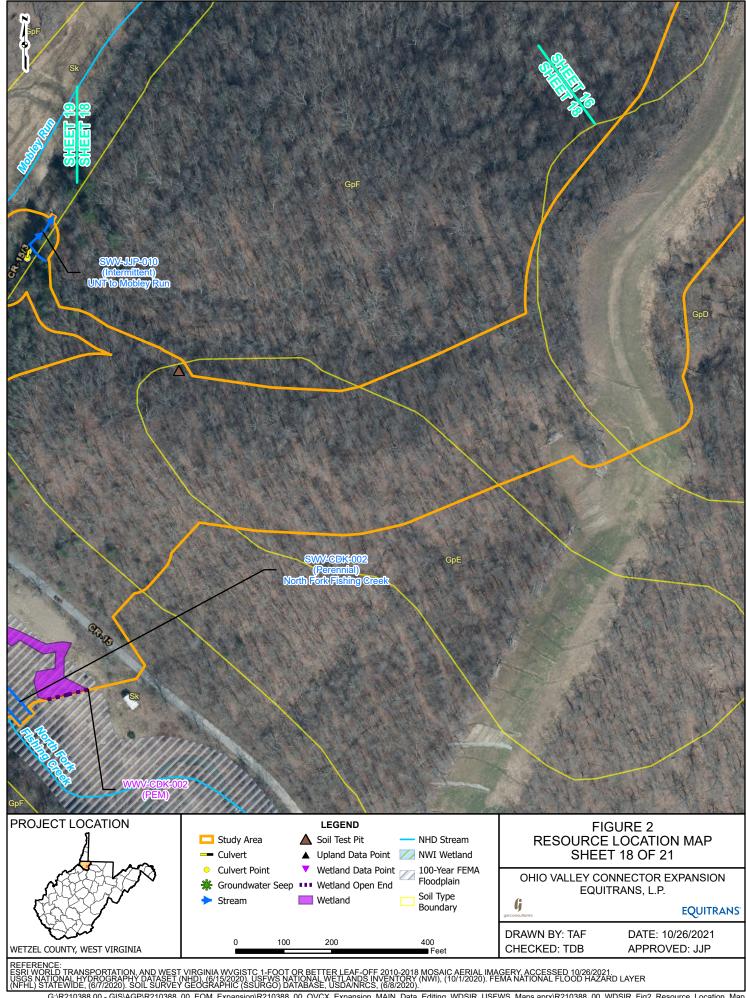


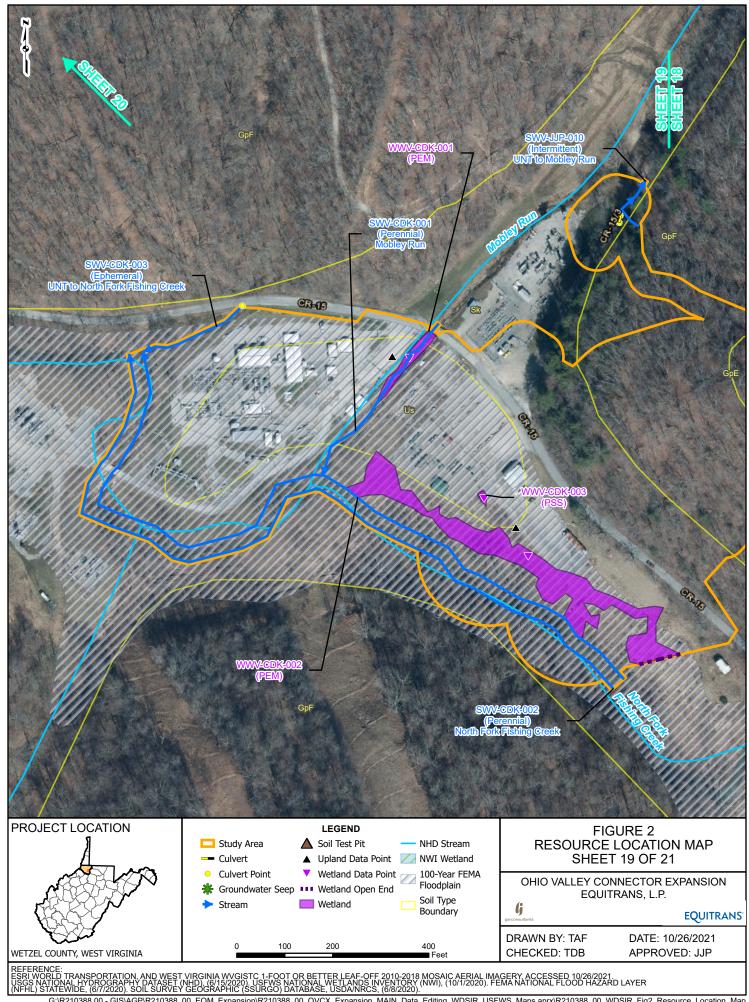


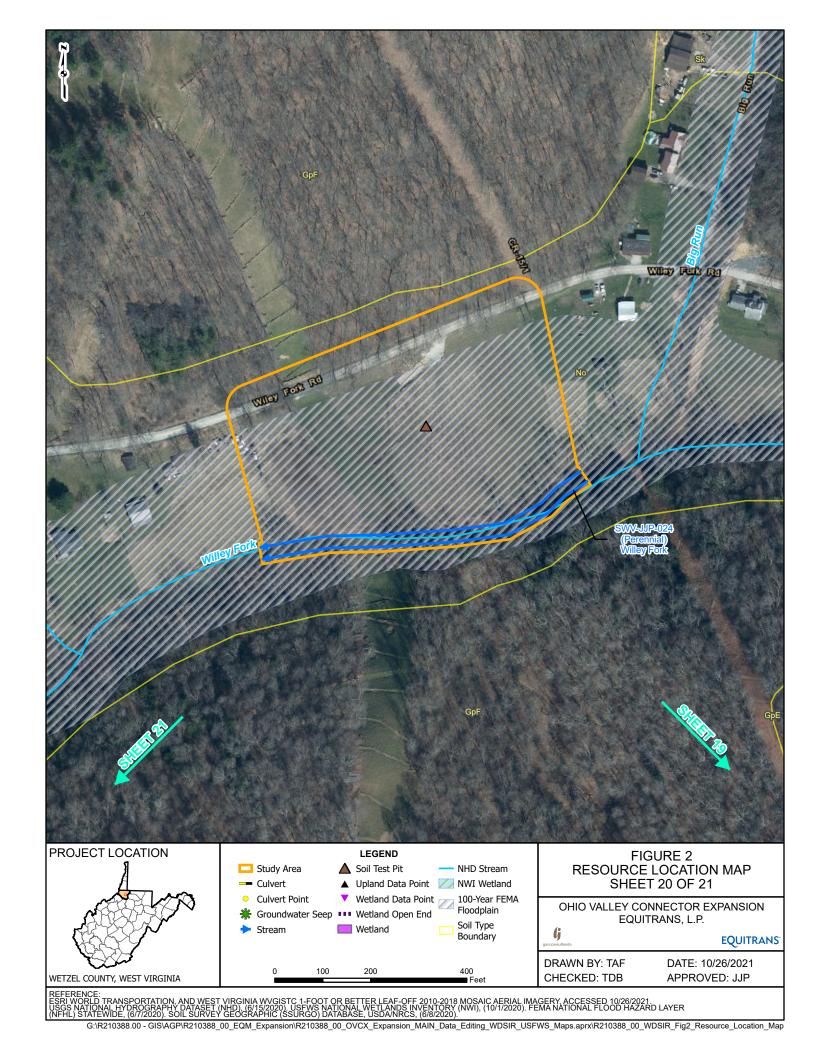


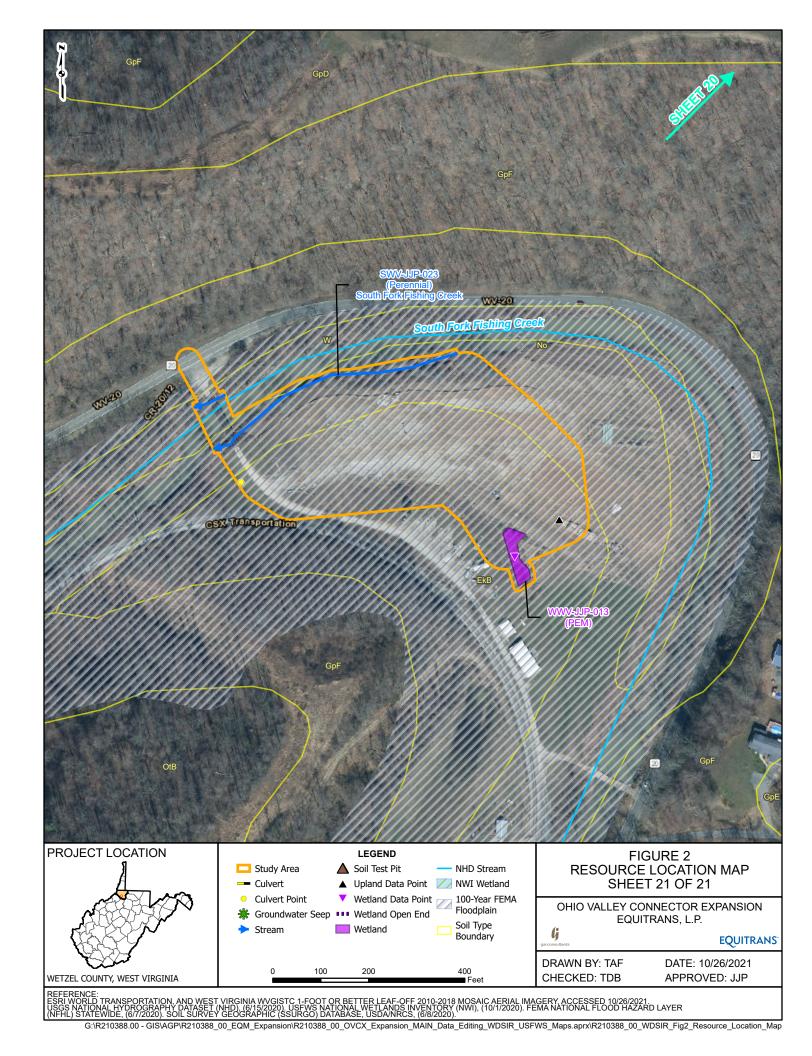












APPENDIX AWetland Photographs

Wetland Photographs



Wetland WWV-CDK-001, Facing North (9/16/21)



Wetland WWV-CDK-001, Facing South (9/16/21)



Wetland WWV-CDK-001, Facing East (9/16/21)



Wetland WWV-CDK-001, Facing West (9/16/21)



Wetland WWV-CDK-002, Facing North (9/16/21)



Wetland WWV-CDK-002, Facing South (9/16/21)





Wetland WWV-CDK-002, Facing East (9/16/21)



Wetland WWV-CDK-002, Facing West (9/16/21)



Wetland WWV-CDK-003, Facing North (9/16/21)



Wetland WWV-CDK-003, Facing South (9/16/21)



Wetland WWV-CDK-003, Facing East (9/16/21)



Wetland WWV-CDK-003, Facing West (9/16/21)

























Wetland WWV-JJP-008, Facing East (7/14/21)



Wetland WWV-JJP-008, Facing West (7/14/21)



Wetland WWV-JJP-009, Facing North (7/21/21)



Wetland WWV-JJP-009, Facing South (7/21/21)



Wetland WWV-JJP-009, Facing East (7/21/21)



Wetland WWV-JJP-009, Facing West (7/21/21)





Wetland WWV-JJP-013, Facing North (8/20/21)



Wetland WWV-JJP-013, Facing South (8/20/21)



Wetland WWV-JJP-013, Facing East (8/20/21)



Wetland WWV-JJP-013, Facing West (8/20/21)



APPENDIX B Waterbody Photographs

Stream Photographs



Stream SWV-ALS-001, perennial, upstream, facing Northeast (7/13/21)



Stream SWV-ALS-001, perennial, downstream, facing Southwest (7/13/21)



Stream SWV-ALS-001, perennial, right bank, facing Northwest (7/13/21)



Stream SWV-ALS-001, perennial, left bank, facing Southeast (7/13/21)



Stream SWV-ALS-003, ephemeral, upstream, facing Southwest (7/14/21)



Stream SWV-ALS-003, ephemeral, downstream, facing Northeast (7/14/21)





Stream SWV-ALS-003, ephemeral, right bank, facing Southeast (7/14/21)



Stream SWV-ALS-003, ephemeral, left bank, facing Northwest (7/14/21)



Stream SWV-ALS-003, intermittent, upstream, facing Southwest (7/14/21)



Stream SWV-ALS-003, intermittent, downstream, facing Northeast (7/14/21)



Stream SWV-ALS-003, intermittent, right bank, facing Southeast (7/14/21)



Stream SWV-ALS-003, intermittent, left bank, facing Northwest (7/14/21)





Stream SWV-ALS-004, intermittent, upstream, facing South (7/14/21)



Stream SWV-ALS-004, intermittent, downstream, facing North (7/14/21)



Stream SWV-ALS-004, intermittent, right bank, facing East (7/14/21)



Stream SWV-ALS-004, intermittent, left bank, facing West (7/14/21)



Stream SWV-ALS-005, perennial, upstream, facing East (7/14/21)



Stream SWV-ALS-005, perennial, downstream, facing West (7/14/21)





Stream SWV-ALS-005, perennial, right bank, facing Northwest (7/14/21)



Stream SWV-ALS-005, perennial, left bank, facing Southeast (7/14/21)



Stream SWV-CDK-001, perennial, upstream, facing Northeast (9/16/21)



Stream SWV-CDK-001, perennial, upstream, facing Southwest (9/16/21)



Stream SWV-CDK-001, perennial, crossing, facing Northwest (9/16/21)



Stream SWV-CDK-001, perennial, bridge crossing, facing Northeast (9/16/21)





Stream SWV-CDK-002, perennial, upstream, facing Southeast (9/16/21)



Stream SWV-CDK-002, perennial, downstream, facing Northwest (9/16/21)



Stream SWV-CDK-002, perennial, right bank, facing Southeast (9/16/21)



Stream SWV-CDK-002, perennial, left bank, facing Southwest (9/16/21)



Stream SWV-CDK-002, perennial, bridge crossing, facing South (9/16/21)





Stream SWV-CDK-003, ephemeral, upstream, facing East (9/16/21)



Stream SWV-CDK-003, ephemeral, downstream, facing West (9/16/21)



Stream SWV-CDK-003, ephemeral, right bank, facing North (9/16/21)



Stream SWV-CDK-003, ephemeral, left bank, facing South (9/16/21)



Stream SWV-CDK-003, ephemeral, culvert outflow, facing East (9/16/21)









Stream SWV-JJP-002, intermittent, right bank, facing West (7/12/21)



Stream SWV-JJP-002, intermittent, left bank, facing East (7/12/21)



Stream SWV-JJP-002, intermittent, culvert inflow (7/12/21)



Stream SWV-JJP-003, intermittent, upstream, facing North (7/12/21)



Stream SWV-JJP-003, intermittent, downstream, facing South (7/12/21)





Stream SWV-JJP-003, intermittent, right bank, facing West (7/12/21)



Stream SWV-JJP-003, intermittent, left bank, facing East (7/12/21)



Stream SWV-JJP-004, intermittent, upstream, facing North (7/12/21)



Stream SWV-JJP-004, intermittent, downstream, facing South (7/12/21)



Stream SWV-JJP-004, intermittent, right bank, facing West (7/12/21)



Stream SWV-JJP-004, intermittent, left bank, facing East (7/12/21)





Stream SWV-JJP-004, intermittent, buried culvert inflow (7/12/21)



Stream SWV-JJP-004, intermittent, culvert outflow (7/12/21)



Stream SWV-JJP-005, intermittent, upstream, facing East (7/12/21)



Stream SWV-JJP-005, intermittent, downstream, facing West (7/12/21)



Stream SWV-JJP-005, intermittent, right bank, facing North (7/12/21)



Stream SWV-JJP-005, intermittent, left bank, facing South (7/12/21)





Stream SWV-JJP-006, ephemeral, upstream, facing Southeast (7/12/21)



Stream SWV-JJP-006, ephemeral, downstream, facing Northwest (7/12/21)



Stream SWV-JJP-006, ephemeral, right bank, facing North (7/12/21)



Stream SWV-JJP-006, ephemeral, left bank, facing South (7/12/21)



Stream SWV-JJP-007, perennial, upstream, facing North (7/12/21)



Stream SWV-JJP-007, perennial, downstream, facing South (7/12/21)









Stream SWV-JJP-009, perennial, upstream, facing Southeast (7/13/21)



Stream SWV-JJP-009, perennial, downstream, facing Northwest (7/13/21)



Stream SWV-JJP-009, perennial, right bank, facing North (7/13/21)



Stream SWV-JJP-009, perennial, left bank, facing South (7/13/21)



Stream SWV-JJP-009, perennial, culvert inflow (7/13/21)



Stream SWV-JJP-009, perennial, culvert outflow (7/13/21)





Stream SWV-JJP-010, intermittent, upstream, facing East-Southeast (7/13/21)



Stream SWV-JJP-010, intermittent, downstream, facing West-Northwest (7/13/21)



Stream SWV-JJP-010, intermittent, right bank, facing East (7/13/21)



Stream SWV-JJP-010, intermittent, left bank, facing West (7/13/21)



Stream SWV-JJP-011, ephemeral, upstream, facing North (7/13/21)



Stream SWV-JJP-011, ephemeral, downstream, facing South (7/13/21)







Stream SWV-JJP-011, ephemeral, left bank, facing East (7/13/21)



Stream SWV-JJP-012, ephemeral, upstream, facing Southwest (7/13/21)



Stream SWV-JJP-012, ephemeral, downstream, facing Northeast (7/13/21)



Stream SWV-JJP-012, ephemeral, right bank, facing South (7/13/21)



Stream SWV-JJP-012, ephemeral, left bank, facing North (7/13/21)





Stream SWV-JJP-013, ephemeral, upstream, facing North-Northwest (7/13/21)



Stream SWV-JJP-013, ephemeral, downstream, facing South-Southeast (7/13/21)



Stream SWV-JJP-013, ephemeral, right bank, facing West (7/13/21)



Stream SWV-JJP-013, ephemeral, left bank, facing East (7/13/21)



Stream SWV-JJP-013, ephemeral, culvert inflow (7/13/21)



Stream SWV-JJP-013, ephemeral, culvert outflow (7/13/21)





Stream SWV-JJP-014, perennial, upstream, facing North (7/13/21)



Stream SWV-JJP-014, perennial, downstream, facing South (7/13/21)



Stream SWV-JJP-014, perennial, right bank, facing West (7/13/21)



Stream SWV-JJP-014, perennial, left bank, facing East (7/13/21)



Stream SWV-JJP-014, perennial, culvert outflow (7/13/21)





Stream SWV-JJP-015, perennial, upstream, facing Northeast (7/13/21)



Stream SWV-JJP-015, perennial, downstream, facing Southwest (7/13/21)



Stream SWV-JJP-015, perennial, right bank, facing Northwest (7/13/21)



Stream SWV-JJP-015, perennial, left bank, facing Southeast (7/13/21)



Stream SWV-JJP-016, ephemeral, upstream, facing North (7/14/21)



Stream SWV-JJP-016, ephemeral, downstream, facing South (7/14/21)





Stream SWV-JJP-016, ephemeral, right bank, facing East (7/14/21)



Stream SWV-JJP-016, ephemeral, left bank, facing West (7/14/21)



Stream SWV-JJP-017, intermittent, upstream, facing East (7/14/21)



Stream SWV-JJP-017, intermittent, downstream, facing West (7/14/21)



Stream SWV-JJP-017, intermittent, right bank, facing Northeast (7/14/21)



Stream SWV-JJP-017, intermittent, left bank, facing Southwest (7/14/21)









Stream SWV-JJP-023, perennial, upstream, facing East-Northeast (8/20/21)



Stream SWV-JJP-023, perennial, downstream, facing West-Southwest (8/20/21)



Stream SWV-JJP-023, perennial, right bank, facing Northwest (8/20/21)



Stream SWV-JJP-023, perennial, left bank, facing Southeast (8/20/21)



Stream SWV-JJP-024, perennial, upstream, facing (8/20/21)



Stream SWV-JJP-024, perennial, upstream, facing (8/20/21)





Stream SWV-JJP-024, perennial, upstream, facing (8/20/21)



Stream SWV-JJP-024, perennial, upstream, facing (8/20/21)