



**US Army Corps
of Engineers**
Philadelphia District
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107-3390
ATTN: CENAP-OP-R

Public Notice

Public Notice No. **CENAP-OP-R-2015-0802-65** Date

Application No. File No.

In Reply Refer to:
REGULATORY BRANCH

This District has received an application for a Department of the Army permit pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) and Section 404 of the Clean Water Act (33 U.S.C. 1344).

The purpose of this notice is to solicit comments and recommendations from the public concerning issuance of a Department of the Army permit for the work described below.

APPLICANT: Mr. Thomas Hutchins
Tennessee Gas Pipeline Company L.L.C.
1001 Louisiana Street
Suite 1000
Houston, Texas 77002-5089

AGENT: Ms. Robin Dingle
Tetra Tech, Inc.
2012E Delabole Road
Pen Argyl, Pennsylvania 18072

WATERWAY: See Attachment 1: Tables 1 and 2 Wetlands and Waterways Resources and Attachment 2: Project Area Impacts.

LOCATION: See Attachment 3: Location Maps.

Proposed Pipeline Facilities of the Orion Project

Facility ID	Outside Diameter	Milepost		Length (miles)	Township	County	State	Start Latitude Longitude	Stop Latitude Longitude
		Begin	End						
Loop 322	36-inch	-	-	-	Berlin, Palmyra, Texas and Lackawaxen	Wayne and Pike	PA		
		0.00	8.23	8.23				41.563839° -75.193577°	41.500222° -75.064188°
Loop 323	36-inch	-	-	-	Lackawaxen	Pike	PA	41.500222° -75.064188°	41.460307° -74.997318°
		8.23	12.91	4.68					

Loop 322 will consist of the construction of the Orion pipeline between mile posts 0.00 and 8.23, just east of Honesdale Pennsylvania and ending at Compressor Station (CS) 323. The looping consists of 8.23 miles of 36-inch pipeline parallel to the existing Tennessee Gas Pipeline 300 line in Berlin, Palmyra, Texas and Lackawaxen Townships in Wayne and Pike Counties in Pennsylvania.

Loop 323 will consist of the construction of the Orion pipeline between mile posts 8.23 and 12.91, from CS 323 just east of State Route 590. The looping consists of 4.68 miles of 36 inch pipeline parallel to the existing Tennessee Gas Pipeline Northeast Upgrade 300 line in Lackawaxen Township Pike County in Pennsylvania.

The project will include 17 temporary access roads, two (2) permanent access roads, ten (10) contractor, pipe yards and four (4) potential hydrostatic test water withdrawal sites.

ACTIVITY: The Tennessee Gas Pipe Line Company (TGP) has submitted a Department of the Army permit application for wetland and waterway crossings associated with the TGP Orion Project (Orion) in Pennsylvania. The project is eligible for twenty one (21) Pennsylvania State Permit General Permit 4's (PASPGP-4) and an Individual Permit for the remaining ineligible crossings as is summarized on Attachment 2 Project Area Impacts. Orion would consist of the following: 1) Installation of approximately 12.91 miles of 36-inch diameter pipeline, consisting of two separate loops located within and/or adjacent to the right-of-way (ROW) associated with the existing Tennessee Gas 300 line facilities, 2) a new pig launcher at the beginning of Loop 322 and a new pig receiver at the end of Loop 323, 3) crossover and connecting facilities to both existing Tennessee Lines 300-1 (24-inch) and 300-2 (30-inch) at the launcher and receiver sites, and 4) rewheel/restage Compressor 2A at CS 323 to accommodate increased volumes and changes in station suction pressures.

During design of the Orion Project, TGP attempted to avoid and minimize wetland and waterbody impacts that would result from the construction and installation of the Project. Permanent impacts to wetlands (in the form of permanent conversion of forested and scrub shrub wetlands to emergent wetland type) that could not be avoided will be mitigated through wetland restoration and enhancement. The only permanent fill of wetlands or waterbodies associated with the Project will be the backfilling of the trench.

Avoidance and Minimization provided by the applicant:

Tennessee plans to construct and install the Orion Project, consisting of Loop 322 and Loop 323, within and adjacent to its existing 300 Line in Wayne and Pike Counties, Pennsylvania. Tennessee plans to co-locate the new pipeline loops with Tennessee's existing 300 Line at a typical 25-foot offset from either the 300-1 Line or the 300-2 Line and a typical 25 foot offset from a Pennsylvania Power and Light (PPL) permanent powerline ROW, as applicable. Tennessee also considered different route alternatives and variations in accordance with the Federal Energy Regulatory Commission's (Commission) guidelines set forth in 18 CFR Section 380.15. However, co-locating the new pipeline loops within and adjacent to the existing 300 Line will lessen environmental impacts by reducing the amount of clearing required in currently undisturbed lands, including wetlands and waterbodies, during construction. Furthermore, to minimize and avoid impacts, the temporary construction workspace within wetlands has been reduced to a 75-foot corridor (as compared to the typical 110-foot

construction workspace in upland areas). All temporary workspace will be restored following completion of the Project and allowed to revert to pre-construction conditions. However, a 10-foot-wide corridor centered on the loops will be maintained in an herbaceous state to allow routine operation/maintenance along the permanent ROW, and trees within 15 feet of the loops that are greater than 15 feet in height may be selectively cut.

Tennessee's proposed construction procedures are designed to ensure that potential impacts at all waterbody crossings are minimized to the maximum extent practicable. Tennessee will adhere to the Draft Orion Wetland and Waterbody Construction and Mitigation Procedures (Procedures), as well as the Draft Orion Upland Erosion Control, Revegetation, and Maintenance Plan (Plan). Tennessee would implement procedures and waterbody protection measures such as: only crossing the streams within approved construction windows to protect spawning fish, limiting the duration of a stream crossing by preparing either side of the stream prior to construction of the actual crossing, preserving as much of riparian buffer as possible, and maintaining stream flow at all waterbody crossings. Tennessee proposes to cross all waterbodies using dry crossing methods in order to maintain downstream flow rate. However, the Lackawaxen River will be crossed utilizing a dry PortaDam crossing with an open cut contingency. Other exceptions to the dry crossing method may be necessary when a stream is located in a saturated wetland in which flow cannot be contained and an open-cut method is necessary. Temporary equipment bridges will be installed and maintained throughout construction in accordance with permit conditions/requirements. After the completion of construction, streambeds will be restored to their former elevations and grades, and all material or obstructions resulting from or used temporarily during construction of the pipeline will be removed to prevent interference with normal water flow and use. Following pipeline installation and streambed restoration, all stream banks will be restored and stabilized/re-vegetated to prevent subsequent erosion, in accordance with permit requirements.

Tennessee will ensure that construction related impacts to wetlands are kept to a minimum by stabilizing the working side of the wetland with timber matts or other stabilization methods, and restricting equipment access in wetlands to machinery needed for actual pipeline installation. Maintaining a 100 foot buffer in which there will be no refueling or maintenance of equipment near the wetland or within the wetland (unless otherwise monitored by an environmental inspector), limiting the amount of vegetation clearing as much as possible, and retaining all trench spoil within the right of way limits by using applicable BMPs. Other wetland crossing procedures that Tennessee will adhere to include: minimizing vegetation disturbance and leaving root systems intact where possible; segregating the top 12 inches of topsoil from the trenchline (in non-saturated wetlands) and replacing it on top of the trench following construction to maintain the natural seed bank to the extent possible; installing sediment barriers at the edge of all wetlands until upslope revegetation is completed; and, installing permanent slope breakers at the base of all slopes adjacent to wetlands to maintain wetland hydrology. Preconstruction wetland conditions will be restored to the extent possible, and the areas will be stabilized and revegetated in accordance with the permit requirements. Specifically, wetland contours will be restored and wetlands will be seeded with a native wetland seed mix (as per permit conditions), including tree and shrub species that will be applied in scrub-shrub and forested areas as per permit conditions.

Compensatory Mitigation

All temporary wetland and waterbody impacts will be restored and allowed to revert to their preconstruction conditions. Upon completion of construction, topsoil, contours and drainage patterns will be restored as near as possible to pre-construction conditions.

The only permanent fill of wetlands or waterbodies will be associated with the backfill of the trench. Construction of the pipeline loops will result in the permanent conversion of approximately 2.7 acres of palustrine forested and scrub-shrub wetlands to emergent wetlands. This 2.7 acres includes impacts to previously restored forested and scrub shrub wetland areas that were temporarily impacted as a result of the 300/NEUP Pipeline Projects and that will now be permanently converted. To mitigate for these permanent impacts related to forested and scrub shrub wetland conversion, TGP will provide off-site mitigation that includes wetland restoration, enhancement and preservation. The mitigation area will be preserved in perpetuity and protected from any future development or impact through execution of a deed restriction. A site known as Lackawaxen Creek Restoration Site located Clinton Township, Wayne County, has been selected by TGP to address these permanent conversion impacts. Wetland mitigation plans have been submitted to the U.S. Army Corps of Engineers to review for this site, Attachment 4.

PURPOSE: The applicants stated purpose is to construct and operate the Orion Pipeline Project in order to provide an additional 135,000 dekatherms per day (dt/day) of additional firm natural gas transportation capacity on TGP's pipeline system from the Gibson receipt point in Wayne County to the Milford delivery point in Pike County. The facilities required to provide this service include approximately 12.91 miles of 36-inch diameter pipeline looping, new pig launcher and receiver, crossover and connection facilities to both the 300-1 and 300-2 launcher and receiver sites, rewheel/restage of Compressor 2A at CS 323 to accommodate increased volumes and suction pressures and minor modification at existing CS 323. Construction is set to begin in September 2018, and facilities would go in to service June 1, 2018.

The decision whether to issue a permit will be based on an evaluation of the activity's probable impact including its cumulative impacts on the public interest. The decision will reflect the national concern for both protection and utilization of important resources. The benefits which reasonably may be expected to accrue from the work must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the work will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs and welfare of the people. A Department of the Army permit will be granted unless the District Engineer determines that it would be contrary to the public interest.

The Corps of Engineers is soliciting comments from the public; Federal, State, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this

decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Comments on the proposed work should be submitted, in writing, within 30 days to the District Engineer, U.S. Army Corps of Engineers, Philadelphia District, Wanamaker Building, 100 Penn Square East, Philadelphia, Pennsylvania 19107-3390.

The Federal Energy Regulatory Commission (FERC) is the lead Federal agency for this project and is addressing all related work as part of their review. FERC's Docket Number for this proposal is CP16-4. The U.S. Army Corps of Engineers, Philadelphia District is a cooperating agency in the development of the FERC's National Environmental Policy Act (NEPA) document.

Pursuant to Section 106 of National Historic Preservation Act (NHPA) of 1966, as amended with implementing regulations established in 33 CFR 325, Appendix C, the Corps of Engineers Cultural Resource Specialist/Tribal Liaison, in consultation with FERC, the Pennsylvania Historical and Museum Commission, serving as the State Historic Preservation Office (SHPO), the Tribes and other consulting parties, is considering the proposed undertaking's effects on resources eligible for or listed on the National Register of Historic Places (NRHP).

The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act 1996 (Public Law 104-267), requires all Federal agencies to consult with the National Marine Fisheries Service (NMFS) on all actions, or proposed actions, permitted, funded, or undertaken by the agency that may adversely affect Essential Fish Habitat (EFH). It has been determined that the proposed project does not occur within any EFH, or jurisdiction of NMFS protected species.

Pursuant to Section 7 of the Endangered Species Act (16 U.S.C.1531), the applicant initiated consultation with the U.S. Fish and Wildlife Service (USFWS) in a letter dated April 3, 2015. The Corps in consultation with the FERC, and the USFWS have determined that the Orion project is within the range of the Indiana Bat (*Myotis sodalis*), and the Northern Long Eared Bat (*Myotis septentrionalis*), both listed as federally endangered species. The Corps as well as the FERC and the applicant are in continued informal consultation with the USFWS to determine the proposed impacts to the listed species.

In accordance with Section 401 of the Clean Water Act, a Water Quality Certificate is necessary from the Pennsylvania Department of Environmental Protection where the work is located. Any comments concerning the work described above which relate to Water Quality considerations should be sent to this office with a copy to the State.

The evaluation of the impact of the work described above on the public interest will include application of the guidelines promulgated by the Administrator, U.S. Environmental Protection Agency, under authority of Section 404(b) of the Clean Water Act.

Any person may request, in writing, to the District Engineer, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for a public hearing shall state in writing, with particularity, the reasons for holding a public hearing.

If you have any general questions, questions pertaining to impacts and/or need to see more detailed construction plans please contact:

Ms. Elaine J. Moyer at (570) 842-1044, or by E-mail at: elaine.j.moyer@usace.army.mil for the proposed project.

Samuel L. Reynolds
Acting Chief, Regulatory Branch

Table 1 Orion Project Wetland Resources – Wayne County, PA

Approximate Milepost	Wetland No.	Wetland Type*	Latitude	Longitude	Crossing Length at Pipeline Centerline (feet)	Average Width Within Construction Workspaces	Average Width Within Permanent ROW	Total Construction Workspaces Wetland Impacts (acres) ^f	Modified Final USACE Impacts	Modified Final USACE Permanent Impacts ^g	Exceptional Value	USGS Topographic Map Quad	Township
Pipeline													
0.13	0.15	W1a	PEM	41.5631	-75.1910	146	0.04	0.13	0.17	0.17	0	White Mills	Berlin
0.40	0.41	W6a	PEM	41.5609	-75.1873	17	0.01	0.02	0.03	0.03	No	White Mills	Berlin
0.55	0.61	W5a	PEM/SSPFO	41.5597	-75.1843	(167/00)	(0.07/00.01)	(0.18/00.01)	(0.25/00.02)	(0.17/0.02/0.0)	Yes - proximity to HQ waters (UNT to Indian Orchard Brook)	White Mills	Berlin
1.23	1.31	W3a	PEM/FO	41.5552	-75.1726	(244/0)	(0.20/0)	(0.33/0)	(0.53/0)	(0.42/0.02)	No	White Mills	Berlin
1.36	1.43	W9a	PEM/FO	41.5544	-75.1703	(0/129)	(0.06/0.03)	(0.09/0.10)	(0.15/0.13)	(0.08/0.08)	No	White Mills	Berlin
1.49	1.62	W10a	PEM/FO	41.5530	-75.1677	(659/0)	(0.19/0.06)	(0.67/0.06)	(0.86/0.12)	(0.24/0.15)	No	White Mills	Berlin
1.90	1.96	W11a	PEM/FO	41.5496	-75.1622	(0/211)	(0.0/0.16)	(0.0/0.36)	(0.0/0.52)	(0.0/0.31)	Yes - proximity to HQ waters (UNT to Swamp Brook)	White Mills	Berlin
2.25	2.38	W16a	PEM/FO	41.5466	-75.1560	(470/0)	(0.19/0)	(0.50/0)	(0.69/0)	(0.27/0.03)	Yes - proximity to HQ waters (UNT to Swamp Brook and Swamp Brook)	White Mills	Berlin
2.45	2.49	W15a	PEM/FO	41.5451	-75.1539	(150/0)	(0.08/0)	(0.19/0)	(0.27/0)	(0.20/0.02)	Yes - proximity to HQ waters (UNT to Swamp Brook)	White Mills	Berlin
3.16	3.28	W14a	PEM/SSPFO	41.5385	-75.1422	(326/0)	(0.15/0)	(0.38/0)	(0.53/0)	(0.37/0.05)	No	White Mills	Berlin
3.34	3.48	W12a	PEM/SSPFO	41.5367	-75.1392	(421/0)	(0.09/0.16/0)	(0.07/0.41/0)	(0.16/0.57/0)	(0.16/0.31/0.1)	No	White Mills	Berlin
3.47	3.50	W21a	PEM	41.5361	-75.1382	421	0.25	0.48	0.73	0.57	No	White Mills	Berlin
3.63	4.13	W20a	PEM/SSPFO	41.5335	-75.1337	(1339/00)	1.01	1.55	2.56	2.17	Yes - proximity to HQ waters (UNT to Rattlesnake Creek)	White Mills	Paleyva
Pipeline Totals^{d,e}													
						2.51	5.06	7.57	6.22	1.35			
						PEM	1.73	3.83	5.56	4.45	0.00		
						PSS:	0.16	0.41	0.57	0.33	0.02		
						PFO:	0.63	0.81	1.44	1.44	1.33		
Pipe/Contractor Yard													
Pipe Yard No. 1	1c	PEM	41.5507	-75.1716	N/A	0.01	0	0.01	0.01	0	No	White Mills	Berlin
	4c	PEM	41.5506	-75.1728	N/A	0.01	0	0.01	0.01	0	No	White Mills	Berlin
	5c	PEM	41.5504	-75.1728	N/A	0.01	0	0.01	0.01	0	No	White Mills	White Mills
Project Totals^{d,e}													
						2.54	5.06	7.60	6.25	1.35			
						PEM	1.75	3.84	5.59	4.48	0.00		
						PSS:	0.16	0.41	0.57	0.33	0.02		
						PFO:	0.63	0.81	1.44	1.44	1.33		

Notes:

* PEM = Palustrine Emergent; PSS = Palustrine Scrub-Shrub; PFO = Palustrine Forested

^a Wetland type based on field survey determination.

^b Consists of wetlands within the 25-foot-wide temporary construction ROW.

^c Vegetation maintenance along the permanent ROW in wetlands will be restricted to a 10-foot-wide corridor centered on the Loops to be maintained in a herbaceous state. In addition, trees within 15 feet of the Loops that are greater than 15 feet in height may be selectively cut. Therefore, this column represents the acreage of forested wetlands within a 30-foot-wide corridor that will be permanently converted to emergent or scrub-shrub wetlands. In 10-foot-wide corridor that will be maintained in an herbaceous state.

^d Wetland impact acreage for each wetland has been rounded to the nearest hundredth, resulting in slight variation between the sum of the figures listed in the table and the Project Total presented. Project Total presented is based on total acres calculated using GIS spatial analysis, taken out to additional decimal places for each wetland, and then the grand total rounded (i.e., rounding occurred only once, at end).

^e Average from ATWS included.

^f All wetlands will be crossed using the open cut construction method. Refer to the site-specific drawings included in Attachment 7B.

Table 1 Orion Project Wetland Resources – Pike County, PA

Approximate Milepost	Wetland No.	Wetland Type*	Latitude	Longitude	Crossing Length at Pipeline Centerline (feet)	Acreage Within Temporary Construction Workspaces*	Acreage Within Permanent ROW	Total Construction Workspace Wetland Impacts* (acres)	Modified/ Final USACE Temporary Impacts	Modified/ Final USACE Permanent Impacts*	Exceptional Value	USGS Topographic Map Quad	Township	
From	To													
Pipeline														
4.31	4.42	W19a	PBM/PFO	41.5283	-75.1252	(199/97) 296	(0.10/0.07) 0.17	(0.23/0.11) 0.34	(0.33/0.18) 0.51	(0.33/0.11) 0.44	(0.0/0.07) 0.07	Yes - proximity to HQ waters (UNT to Rattlesnake Creek)	White Mills/ Narrowsburg	Lackawanna
4.52	4.59	W24a	PBM/PFO	41.5266	-75.1227	(232/0) 232	(0.08/0.06) 0.14	(0.26/0) 0.26	(0.34/0.06) 0.40	(0.34/0.06) 0.40	(0/0) 0	Yes - proximity to HQ waters (UNT to Rattlesnake Creek)	Narrowsburg	Lackawanna
4.68	4.73	W23a	PBM	41.5249	-75.1212	166	0.07	0.22	0.29	0.29	0	No	Narrowsburg	Lackawanna
5.00	5.03	W22a	PBM	41.5216	-75.1169	143	0.03	0.11	0.14	0.14	0	No	Narrowsburg	Lackawanna
5.45	5.47	W3b	PBM	41.5169	-75.1111	16	0.02	0.02	0.04	0.04	0	No	Narrowsburg	Lackawanna
5.83	5.89	W4b	PBM/PSS	41.5124	-75.1059	(169/0) 169	(0.10/0) 0.10	(0.19/0) 0.19	(0.29/0) 0.29	(0.29/0) 0.29	(0/0) 0	No	Narrowsburg	Lackawanna
5.91	5.92	W5b	PBM	41.5119	-75.1054	0	0.01	0.01	0.02	0.02	0	No	Narrowsburg	Lackawanna
6.00	6.04	W6b	PBM/PSS	41.5106	-75.1044	(0/0) 0	(0.05/0) 0.05	(0.07/0) 0.07	(0.12/0) 0.12	(0.12/0) 0.12	(0/0) 0	Yes - proximity to HQ waters (UNT to West Falls Creek)	Narrowsburg	Lackawanna
6.05	6.17	W7b	PBM/PSS/PFO	41.5103	-75.1022	(280/0/0) 280	(0.14/0/0) 0.14	(0.34/0/0) 0.34	(0.48/0/0) 0.48	(0.48/0/0) 0.48	(0/0/0) 0	Yes - proximity to HQ waters (UNT to West Falls Creek)	Narrowsburg	Lackawanna
6.22	6.24	W10b	PBM/PSS	41.5094	-75.1004	(0/0) 0	(0.02/0) 0.02	(0.03/0) 0.03	(0.05/0) 0.05	(0.05/0) 0.05	(0/0) 0	No	Narrowsburg	Lackawanna
6.34	6.71	W11b	PBM/PSS/PFO	41.5097	-75.0966	(0.983/21.4) 1,197	(0.04/0.90/0.10) 1.04	(0.113/0.24) 1.39	(0.042/0.5/0.34) 2.43	(0.031/0.2/0.20) 2.05	(0.023/0.15) 0.38	Yes - proximity to HQ waters (UNT to West Falls Creek)	Narrowsburg	Lackawanna
6.91	6.95	W20b	PFO	41.5063	-75.0876	120	0.03	0.08	0.11	0.05	0.06	Yes - proximity to HQ waters (UNT to West Falls Creek)	Narrowsburg	Lackawanna
7.00	7.24	W19b	PBM/PSS/PFO	41.5054	-75.0853	(0.0/56.4) 56.4	(0.0/0.31) 0.31	(0.0/0.7/0.58) 0.65	(0.0/0.7/0.89) 0.96	(0.0/0.7/0.50) 0.57	(0.0/0.39) 0.39	Yes - proximity to HQ waters (UNT to West Falls Creek)	Narrowsburg	Lackawanna
7.62	7.68	W17b	PBM/PSS	41.503	-75.0746	(331/159) 192	(0.01/0.09) 0.10	(0.04/0.18) 0.22	(0.05/0.27) 0.32	(0.05/0.23) 0.28	(0.0/0.04) 0.04	Yes - proximity to HQ waters (UNT to West Falls Creek)	Narrowsburg	Lackawanna
7.76	7.82	W16b	PBM/PSS/PFO	41.5023	-75.0722	(0.0/186) 186	(0.005/0.06) 0.11	(0.0/0.03/0.19) 0.22	(0.0/0.08/0.25) 0.33	(0.0/0.08/0.12) 0.20	(0.0/0.13) 0.13	Yes - proximity to HQ waters (UNT to West Falls Creek)	Narrowsburg	Lackawanna
7.82	7.89	W15b	PBM/PSS/PFO	41.5017	-75.0706	(0.97/18) 115	(0.0/0.6/0.02) 0.08	(0.0/12/0.02) 0.14	(0.0/18/0.04) 0.22	(0.0/16/0.03) 0.19	(0.0/0.02/0.01) 0.03	Yes - proximity to HQ waters (UNT to West Falls Creek)	Narrowsburg	Lackawanna
7.95	8.00	W14b	PBM/PSS/PFO	41.5013	-75.0688	(0.0/0) 0	(0.0/0.0/0) 0.01	(0.0/0) 0	(0.0/0.0/0) 0.01	(0.0/0.0/0) 0.01	(0.0/0) 0	No	Narrowsburg	Lackawanna

Table 1

From	To	Welland No.	Welland Type ^a	Latitude	Longitude	Crossing Length at Pipeline Centerline (feet)	Acreage Within Temporary Construction Workspaces ^b	Acreage Within Permanent ROW	Total Construction Workspace Welland Impacts ^c (acres)	Modified Final USACE Temporary Impacts	Modified Final USACE Permanent Impacts ^e	Exceptional Value	USGS Topographic Map Quad	Township
8.03	8.06	W12b	PFO	41.5014	-75.0671	43	0.02	0.04	0.06	0.03	0.03	Yes - proximity to HQ waters (UNT to West Falls Creek)	Narrowburg	Lackawaxen
8.05	8.06	W13b	PEN ^d	41.5010	-75.0671	34	0.02	0.04	0.06	0.06	0	Yes - proximity to HQ waters (UNT to West Falls Creek)	Narrowburg	Lackawaxen
8.21	8.34	W24b	PEN ^d /PFO	41.4999	-75.0632	(186/25) 221	(0.04/0.09) 0.13	(0.13/0.12) 0.25	(0.17/0.21) 0.38	(0.13/0.19) 0.32	(0.0/0.06) 0.06	Yes - proximity to HQ waters (UNT to West Falls Creek)	Narrowburg/ Rowland	Lackawaxen
8.33	8.38	W29b	PEN ^d	41.4987	-75.0601	522	0.06	0.60	0.66	0.66	0	No	Rowland	Lackawaxen
8.94	9.01	W28b	PEN ^d /PSS/PFO	41.4956	-75.0514	(166/0/0) 166	(0.09/0/0.05) 0.14	(0.21/0/0.01) 0.22	(0.30/0/0.06) 0.36	(0.30/0/0.06) 0.36	(0/0/0) 0	No	Rowland	Lackawaxen
9.25	9.27	W25b	PEN ^d	41.4937	-75.0466	13	0.04	0.04	0.08	0.08	0	Yes - proximity to HQ waters (UNT to Westcreek Creek)	Rowland	Lackawaxen
9.28	9.29	W26b	PEN ^d	41.4934	-75.0454	18	0.02	0.02	0.04	0.04	0	Yes - proximity to HQ waters (UNT to Westcreek Creek)	Rowland	Lackawaxen
9.51	9.52	W37a	PEN ^d	41.4923	-75.0421	33	0.01	0.03	0.04	0.04	0	No	Rowland	Lackawaxen
9.55	9.66	W38a	PEN ^d /PFO	41.4918	-75.0411	(222/0) 222	(0.09/0.04) 0.13	(0.26/0) 0.26	(0.35/0.04) 0.39	(0.18/0.13) 0.31	(0/0.08) 0.08	Yes - proximity to HQ waters (UNT to O'Donnell Creek)	Rowland	Lackawaxen
10.39	10.39	W39a	PEN ^d	41.4861	-75.0275	16	0.02	0.02	0.04	0.04	0	Yes - proximity to HQ waters (Lackawaxen River)	Rowland	Lackawaxen
10.59	10.59	W26a	PEN ^d /PFO	41.4844	-75.0245	(16/0) 16	(0.01/0) 0.01	(0.02/0) 0.02	(0.03/0) 0.03	(0.01/0.01) 0.02	(0/0.01) 0.01	Yes - proximity to HQ waters (UNT to Lackawaxen River)	Rowland	Lackawaxen
10.60	10.66	W27a	PEN ^d /PFO	41.4838	-75.0241	(69/0) 69	(0.03/0) 0.03	(0.07/0) 0.07	(0.10/0) 0.10	(0.05/0.03) 0.08	(0/0.02) 0.02	No	Rowland	Lackawaxen
10.78	10.80	W28a	PEN ^d	41.4819	-75.0223	7	0.02	0.01	0.03	0.03	0	No	Rowland	Lackawaxen
11.90	11.91	W30a	PEN ^d /PFO	41.4672	-75.0146	(51/0) 51	(0.05/0) 0.05	(0.06/0) 0.06	(0.11/0) 0.11	(0.08/0.03) 0.11	(0/0) 0	No	Rowland	Lackawaxen
Project Totals ^d :							3.18	6.09	9.27	7.96	1.31			
PEN ^d :							1.22	3.15	4.37	4.02	0.00			
PSS:							1.11	1.55	2.66	2.37	0.29			
PFO:							0.85	1.39	2.24	1.57	1.02			
Potential Hydrostatic Test Water Withdrawal Sites														
Cortina Lake	W1x	PSS	41.5300	-75.0880	N/A	0.04	0	0.04	0.04	0	0	Yes - proximity to HQ waters (Cortina Lake)	Narrowburg	Lackawaxen
Access Route														

Table 1

Orion Project

Approximate Milepost	Welland No.	Welland Type ^a	Latitude	Longitude	Crossing Length at Pipeline Centerline (feet)	Acreage Within Temporary Construction Workspace ^{b,c}	Acreage Within Permanent ROW	Total Construction Workspace Welland Impacts ^d (acres)	Modified ^e Final USACE Temporary Impacts	Modified ^e Final USACE Permanent Impacts ^e	Exceptional Value	USGS Topographic Map Quad	Township
From	To												
TAR-8	W11b	PSS	41.5097	0.04	N/A	0.04	0	0.04	0.04	0	Yes - proximity to HQ waters (UNT to West Falls Creek)	Narrowsburg	Ladkawaxen
Project Totals ^{d,f}													
						3.26	6.09	9.35	8.04	1.31			
PEM:						1.22	3.15	4.37	4.02	0			
PSS:						1.19	1.55	2.74	2.45	0.29			
PFO:						0.85	1.39	2.24	1.57	1.02			

Notes:

PEM = Palustrine Emergent; PSS = Palustrine Scrub-Shrub; PFO = Palustrine Forested

^a Wetland type based on field survey determination.^b Consists of wetlands within the 25-foot-wide temporary construction ROW.^c Vegetation maintenance along the permanent ROW in wetlands will be restricted to a 10-foot-wide corridor centered on the Loops to be maintained in a herbaceous state. In addition, trees within 15 feet of the Loops that are greater than 15 feet in height may be selectively cut. Therefore, this column represents the acreage of forested wetlands within a 30-foot-wide corridor that will be permanently converted to emergent or scrub-shrub wetlands, and acreage of scrub shrub wetlands in 10-foot-wide corridor that will be maintained in an herbaceous state.^d Wetland impact acreage for each wetland has been rounded to the nearest hundredth, resulting in slight variation between the sum of the figures listed in the table and the Project Total presented. Project Total presented is based on total acres calculated using GIS spatial analysis, taken out to additional decimal places for each wetland, and then the grand total rounded (4%, rounding occurred only once, at end).^e Acreage from A1 WS included.^f All wetlands will be crossed using the open cut construction method, except W11b that will be crossed using the push-pull construction method. Refer to the site-specific drawings included in Attachment 7B.

Table 2 Orion Project Waterbody Resources – Wayne County, PA

Waterbody No.	Waterbody Name	Waterbody Type	Latitude	Longitude	Water Depth (feet)	Crossing Width (feet)	Linear Distance of Waterbody in ROW (feet)	Temporary Stream Impact (square feet)	Floodway Impact (acres)	Pennsylvania Code, Chapter 92, Designated Water Uses and Water Quality Criteria ³	PAFBC Stream Designation ⁴	In-Stream Work Window	Statewide Existing Use Classification	Proposed Crossing Method and Structure ⁵	USGS Topographic Map Quad	Township
0.17	Unnamed tributary to Jordan Orchard Brook	Perennial	41.5627	-75.1909	0.25	10	114	1,140	0.288	HQ-CWF	Drains to Water being considered for Wild Trout Designation (Jordan Orchard Brook)	January 1 through September 30, if designated	N/A	Dry	White Mills	Berlin
0.24	Unnamed tributary to Jordan Orchard Brook	Perennial	41.5622	-75.1895	0.42	5	117	585	0.435	HQ-CWF	Drains to Water being considered for Wild Trout Designation (Jordan Orchard Brook)	January 1 through September 30, if designated	N/A	Dry	White Mills	Berlin
1.93	Unnamed tributary to Swamp Brook	Perennial	41.5497	-75.1623	0.33	4	75	300	0.183	HQ-CWF	Drains to Approved Trout Waters/Trot Stocked Fishery (Lackawanna River)	June 16 through February 28	N/A	Dry	White Mills	Berlin
2.36	Unnamed tributary to Swamp Brook	Intermittent	41.547	-75.1569	0.33	4	196	784	0.357	Drains to HQ-CWF (Unnamed tributary to Swamp Brook)	Drains to Approved Trout Waters/Trot Stocked Fishery (Lackawanna River)	June 16 through February 28	N/A	Dry	White Mills	Berlin
2.37	Swamp Brook	Perennial	41.5462	-75.1554	1.16	20	329	6,580	0.577	HQ-CWF	Drains to Approved Trout Waters/Trot Stocked Fishery (Lackawanna River)	June 16 through February 28	N/A	Dry	White Mills	Berlin
3.65	Unnamed tributary to Hartlemane Creek	Intermittent	41.5343	-75.1359	0.33	3	93	279	0.213	Drains to HQ-CWF (Unnamed tributary to Hartlemane Creek)	Drains to Approved Trout Waters/Trot Stocked Fishery (Mashoke Creek)	No in-stream construction restriction	N/A	Dry	White Mills	Berlin

Access Roads

TAB 6	Unnamed tributary to Hartlemane Creek	Epheumal	41.5266	-75.1313	0.16	2	55	0	0	Drains to HQ-CWF (Unnamed tributary to Hartlemane Creek)	Drains to Approved Trout Waters/Trot Stocked Fishery (Mashoke Creek)	No in-stream construction restriction	N/A	Existing Culvert	White Mills	Berlin
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Notes:

1. N/A = Not applicable
2. Crossing width is average bank-to-bank width at time of survey.
3. The Pennsylvania Code 92.91, Drainage List A (Commonwealth of Pennsylvania 2015b). These designations/classifications are only applicable to the Commonwealth and not the United States Army Corps of Engineers.
4. Class A Wild Trout Waters (PAFBC 2015a), Naturally Reproducing Trout Waters (PAFBC 2015b), and Approved Trout Waters (PAFBC 2015c). These designations/classifications are only applicable to the Commonwealth and not the United States Army Corps of Engineers.
5. Wild Trout Enhancement Program (PAFBC 2015d).
6. Fisheries and other classifications include:
- Approved Trout Waters – waters containing significant portions that are open to public fishing and are stocked with trout by PAFBC.
- CWF – Cold Water Fishes (designated use) – maintenance or propagation, or both, of fish species including the family Salmonidae and additional forms and fauna which are indigenous to a cold water habitat.
- EV – Exceptional Value Waters (designated use) – surface waters having quality which exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water by satisfying 25 P.A. Code §93.4(b).
- HQ – High Quality Waters (designated use) – surface waters having quality which exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water by satisfying 25 P.A. Code §93.4(b).
- TR – Trout Stocking – Maintenance of stocked trout from February 15 to July 31 and maintenance and propagation of fish species and additional flora and fauna which are indigenous to a warm water habitat.
- Wild Brook Trout Enhancement Program – waters open to fishing year-round (on closed season), where trout stock may be killed or taken in possession, and where current trout salmonid permit is required. No other restrictions are associated with waters designated as part of the Wild Brook Trout Enhancement Program.
- Wild Trout Waters – streams sections supporting naturally reproducing populations of trout. This is a biological designation that has no bearing on management of the waters, and these streams may also be stocked with hatchery trout by PAFBC.
7. Stream Crossing Method:
- Open cut – in stream construction allowing continuous flow through work zone.
- Dry – in stream construction allowing flow by means of flow through or around a relatively dry work zone during construction. Any stream with no perceptible flow at the time of construction will be open cut.
8. The number for stream crossings based on Orion Project Plan requirements restricted by PAFBC or PAFBC, watershed crossings will be constructed during the following time windows unless adjusted based on specific state permissions or prohibitions:
- EV and Naturally Reproducing Trout Streams – January 1 through September 30
- Wild Trout Waters – June 16 through February 28

Table 2. Orion Project Waterbody Resources – Pike County, PA

Waterbody No.	Waterbody Name	Waterbody Type	Latitude	Longitude	Water Depth (feet)	Crossing Width (feet)	Linear Distance of Waterbody in ROW (feet)	Temporary Stream Impact (square feet)	Temporary Recovery Impact (acres)	Pennsylvania Code, Chapter 93, Designated Water Uses and Water Quality Criteria ^a	PAFBC Stream Designation ^a	In-Stream Work Window	Streamwide Existing Use Classification ^b	Proposed Crossing Methodology ^c	USGS Topographic Map Quad	Township
Pipelines:																
4.32	SI1a tributary to Rattlesnake Creek	ephemeral	41.5288	-75.1260	0.16	2	78	156	0.278	Drains to HQ-CWF (Unnamed tributary to Rattlesnake Creek)	Drains to Approved Trout Waters/Trou Stocked Fishery (Masthope Creek)	No in-stream construction restriction	N/A	Temporary Road Crossing Only	White Mills	Lackawanna
4.37	SI2a tributary to Rattlesnake Creek	intermittent	41.5284	-75.1259	0.33	2	42	84	0.180	Drains to HQ-CWF (Unnamed tributary to Rattlesnake Creek)	Drains to Approved Trout Waters/Trou Stocked Fishery (Masthope Creek)	No in-stream construction restriction	N/A	Dry	White Mills	Lackawanna
4.56	SI5a Tinkling Creek	perennial	41.5263	-75.1230	1	6	105	630	0.254	HQ-CWF	Being considered for Wild Trout Designation	January 1 through September 30, if designated	N/A	Dry	Narrowburg	Lackawanna
6.43	SI6 tributary to West Falls Creek	perennial	41.5087	-75.0965	N/A ^d	10	82	820	0.230	Drains to HQ-CWF (West Falls Creek)	Drains to Water being considered for Wild Trout Designation (West Falls Creek)	January 1 through September 30, if designated	N/A	Open cut (weir/dry if feasible)	Narrowburg	Lackawanna
6.94	SI8b tributary to West Falls Creek	ephemeral	41.5058	-75.0869	0.25	1	477	477	1.033	Drains to HQ-CWF (West Falls Creek)	Drains to Water being considered for Wild Trout Designation (West Falls Creek)	January 1 through September 30, if designated	N/A	Dry	Narrowburg	Lackawanna
7.66	SI4b tributary to West Falls Creek	perennial	41.5028	-75.0743	0.66	15	101	1,515	0.256	HQ-CWF	Drains to Water being considered for Wild Trout Designation (West Falls Creek)	January 1 through September 30, if designated	N/A	Dry	Narrowburg	Lackawanna
7.84	SI0b tributary to West Falls Creek	perennial	41.5018	-75.0707	0.5	1	82	82	0.193	Drains to HQ-CWF (West Falls Creek)	Drains to Water being considered for Wild Trout Designation (West Falls Creek)	January 1 through September 30, if designated	N/A	Dry	Narrowburg	Lackawanna
8.04	SI6 tributary to West Falls Creek	perennial	41.5012	-75.0674	1	12	86	1,032	0.183	HQ-CWF	Drains to Water being considered for Wild Trout Designation (West Falls Creek)	January 1 through September 30, if designated	N/A	Dry	Narrowburg	Lackawanna
8.06	SI9b tributary to West Falls Creek	perennial	41.5011	-75.0670	0.5	2	88	176	0.217	Drains to HQ-CWF (Unnamed tributary to West Falls Creek)	Drains to Water being considered for Wild Trout Designation (West Falls Creek)	January 1 through September 30, if designated	N/A	Dry	Narrowburg	Lackawanna
8.28	SI2b tributary to West Falls Creek	perennial	41.5008	-75.0630	2	8	90	720	0.213	Drains to HQ-CWF (West Falls Creek)	Drains to Water being considered for Wild Trout Designation (West Falls Creek)	January 1 through September 30, if designated	N/A	Dry	Narrowburg/Round	Lackawanna
9.26	SI3b tributary to Westfall Creek	perennial	41.4937	-75.0465	1	3	62	186	0.181	Drains to HQ-CWF (Unnamed tributary to Westfall Creek)	N/A (Drains to Delaware River)	No in-stream construction restriction	N/A	Dry	Round	Lackawanna
9.27	SI4b tributary to Westfall Creek	perennial	41.4935	-75.0464	1	3	75	225	0.310	Drains to HQ-CWF (Unnamed tributary to Westfall Creek)	N/A (Drains to Delaware River)	No in-stream construction restriction	N/A	Dry	Round	Lackawanna
9.28	SI5b tributary to Westfall Creek	ephemeral	41.4932	-75.0460	0.1	3	195	585	0.420	Drains to HQ-CWF (Unnamed tributary to Westfall Creek)	N/A (Drains to Delaware River)	No in-stream construction restriction	N/A	Temporary Road Crossing Only	Round	Lackawanna
9.59	SI1a tributary to O'Donnell Creek	intermittent	41.4920	-75.0403	0.33	3	36	108	0.187	Drains to HQ-CWF (O'Donnell Creek)	Drains to Approved Trout Waters/Trou Stocked Fishery (Lackawanna River)	January 1 through February 28	N/A	Temporary Road Crossing Only	Round	Lackawanna
10.40	SI3a O'Donnell Creek	perennial	41.4866	-75.0269	0.50	4	ATWS only	80	0.047	HQ-CWF	Drains to Approved Trout Waters/Trou Stocked Fishery (Lackawanna River)	January 16 through February 28	N/A	Temporary Road Crossing Only	Round	Lackawanna

Table 2

Orion Project

Midpoint	Water-body No.	Water-body Name	Water-body Type	Latitude	Longitude	Water Depth (feet)	Crossing Width* (feet)	Linear Distance of Waterbody in ROW (feet)	Temporary Stream Impact (square feet)	Temporary Roadway Impact (square feet)	Pennsylvania Code, Chapter 93, Designated Water Uses and Water Quality Criteria ¹	PAPBC Stream Designation ²	In-Stream Work Window	Statewide Existing Use Classification ³	Proposed Crossing Method and Timing for Crossing ⁴	USGS Topographic Map Q road	Township
10.40	SLK	Unimproved tributary to Lackawanna River	Flowing Ditch	41.4872	-75.0238	2	2	61	0	0	Drains to HQ-TSF (Lackawanna River)	Drains to Approved Trout Waters/Trout Stocked Fishery (Lackawanna River)	June 16 through February 28	N/A	Avoided	Rowland	Lackawanna
10.41	S22a	Lackawanna River	Perennial	41.4861	-75.0271	4	250	111 (an additional 130 ft is in ATWS)	27,750	4,538	HQ-TSF	Approved Trout Waters/Trout Stocked Fishery/Amateur Stock	June 16 through February 28	N/A	Porta Dam with Open Cut (see) contingency	Rowland	Lackawanna
10.59	SL8a	Unimproved tributary to Lackawanna River	Epithermal	41.4843	-75.0246	0.25	1	76	76	0.233	Drains to HQ-TSF (Lackawanna River)	Drains to Approved Trout Waters/Trout Stocked Fishery (Lackawanna River)	June 16 through February 28	N/A	Dry	Rowland	Lackawanna
11.66	SL9a	Unimproved tributary to Lords Creek	Epithermal	41.4705	-75.0167	0.08	1	129	129	0.241	Drains to HQ-CWF (Lords Creek)	Drains to Approved Trout Waters/Trout Stocked Fishery (Lackawanna River)	June 16 through February 28	N/A	Dry	Rowland	Lackawanna
12.51	S20a	Lords Creek	Perennial	41.4659	-75.0044	3	6	134	804	0.222	HQ-CWF	Drains to Approved Trout Waters/Trout Stocked Fishery (Lackawanna River)	June 16 through February 28	N/A	Dry	Rowland	Lackawanna
Access Roads																	
TAR 7	SLB	Unimproved tributary to Turney Creek	Perennial	41.5143	-75.1168	0.5	4	0	0	0	Drains to HQ-CWF (Turney Creek)	Drains to Water being considered for Wild Trout Designation (Turney Creek)	January 1 through September 30, if designated	N/A	Existing Culvert	Narrowburg	Lackawanna
TAR 8	SLB	Unimproved tributary to West Falls Creek	Perennial	41.5099	-75.0926	1	6	0	0	0	Drains to HQ-CWF (West Falls Creek)	Drains to Water being considered for Wild Trout Designation (West Falls Creek)	January 1 through September 30, if designated	N/A	Existing Culvert	Narrowburg	Lackawanna
TAR 8	SLC	Unimproved tributary to West Falls Creek	Perennial	41.5087	-75.0965	N/A ⁵	10	20	200	0.044	Drains to HQ-CWF (West Falls Creek)	Drains to Water being considered for Wild Trout Designation (West Falls Creek)	January 1 through September 30, if designated	N/A	Temporary Culvert Upgrade	Narrowburg	Lackawanna

NOTE:

N/A = Not applicable

* Crossing width is average bank-to-bank width at time of survey.

¹ The Pennsylvania Code §93.91, Drainage List A (Commonwealth of Pennsylvania 2015b). These designations/ classifications are only applicable to the Commonwealth and not the United States Army Corps of Engineers.² Class A Wild Trout Waters (PAFBC 2015b). Naturally Reproducing Trout Waters (PAFBC 2015b), and Approved Trout Waters (PAFBC 2015b). These designations/ classifications are only applicable to the Commonwealth and not the United States Army Corps of Engineers.³ Wild Trout Enhancement Program (PAFBC 2015b).⁴ Fictitious and other classifications include:

Approved Trout Waters - waters containing significant portions that are open to public fishing and are stocked with trout by PAFBC.

CWF - Cold Water Fishes (designated use) - maintenance or propagation of brook, lake, or whitefish, or rainbow trout, or any of the family Salmonidae and additional flora and fauna which are indigenous to a cold water habitat.

EV - Exceptional Value Waters (designated use) - waters of high biological value which require special management and protection to maintain and propagate native fish, shellfish, and wildlife and recreation in and on the water by satisfying 25 P.A. Code §93.4(b).

HQ - High Quality Waters (designated use) - waters of high biological value which require special management and protection to maintain and propagate native fish, shellfish, and wildlife and recreation in and on the water by satisfying 25 P.A. Code §93.4(b).

RQ - River Quality Waters (designated use) - waters of high biological value which require special management and protection to maintain and propagate native fish, shellfish, and wildlife and recreation in and on the water by satisfying 25 P.A. Code §93.4(b).

Wild Trout Waters - waters open to fishing year-round (no closed season), where no trout stock may be killed or had in possession, and where current trout salmon permit is required. No fee restrictions are associated with waters designated as part of the Wild Brook Trout Enhancement Program.

Wild Trout Waters - streams serious supporting naturally reproducing populations of trout. This is a biological designation that has no bearing on management of the waters, and these streams may also be stocked with hatchery trout by PAFBC.

⁵ Streambed Existing Use Classification (PADEF 2015b).⁶ Proposed Crossing Methods:

Open Cut - In stream excavation allowing continuous flow through work zone.

Dry - Streams with perceptible flow will be crossed using a dam and pump method, enabling bypass of flow through or around a relatively dry work zone during construction. Any stream with no perceptible flow at the time of construction will be open cut.

Time window for stream crossings based on Orion Project Plan requirements restricted by PADEF or PAFBC. Waterbody crossings will be constructed during the following time windows unless indicated based on specific state permissions or prohibitions.

EV and Naturally Reproducing Trout Streams - January 1 through September 30

Wild Trout Waters - June 16 through February 28

TGP – Orion Pipeline Project Loop 322 Wayne and Pike Counties, Pennsylvania Project Area Impacts			
Project Area	Features	Impact Area (acres) Temp/Perm Conv.	Total Area within Project Area in Acres
1-322	W1aPEM	0.17/0	0.209
	S1a	0.026/0	
	S4a	0.013/0	
2-322	W6aPEM	0.03/0	0.03
3-322	W5aPEM	0.17/0	0.27
	W5aPSS	0.02/0	
	W5aPFO1	0/0.04	
	W5aPFO2	0.04/0	
4-322	W3aPEM	0.42/0	1.79
	W3aPFO1	0/0.09	
	W3aPFO2	0.02/0	
	W9aPEM	0.08/0	
	W9aPFO1	0/0.12	
	W9aPFO2	0.08/0	
	W10aPEM	0.74/0	
	W10aPFO1	0/0.09	
	W10aPFO2	0.15/0	
5-322	W11aPFO1	0/0.21	0.527
	W11aPFO2	0.31/0	
	S6a	0.007/0	
6-322	W16aPEM	0.57/0	1.129
	W16aPFO1	0/0.09	
	W16aPFO2	0.03/0	
	S9a	0.018/0	
	S8a	0.151/0	
	W15aPEM	0.20/0	
	W15aPFO1	0/0.05	
	W15aPFO2	0.02/0	
7-322	W14aPEM	0.37/0	3.836
	W14aPFO1	0/0.11	
	W14aPFO2	0.05/0	
	W12aPEM	0.16/0	
	W12aPSS1	0/0.02	
	W12aPSS2	0.31/0	
	W12aPFO1	0/0.14	
	W12aPFO2	0.10/0	

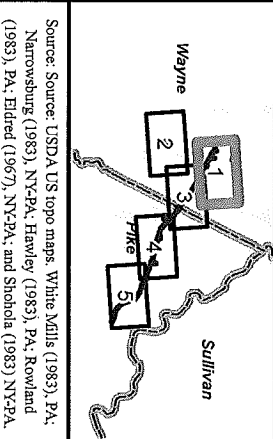
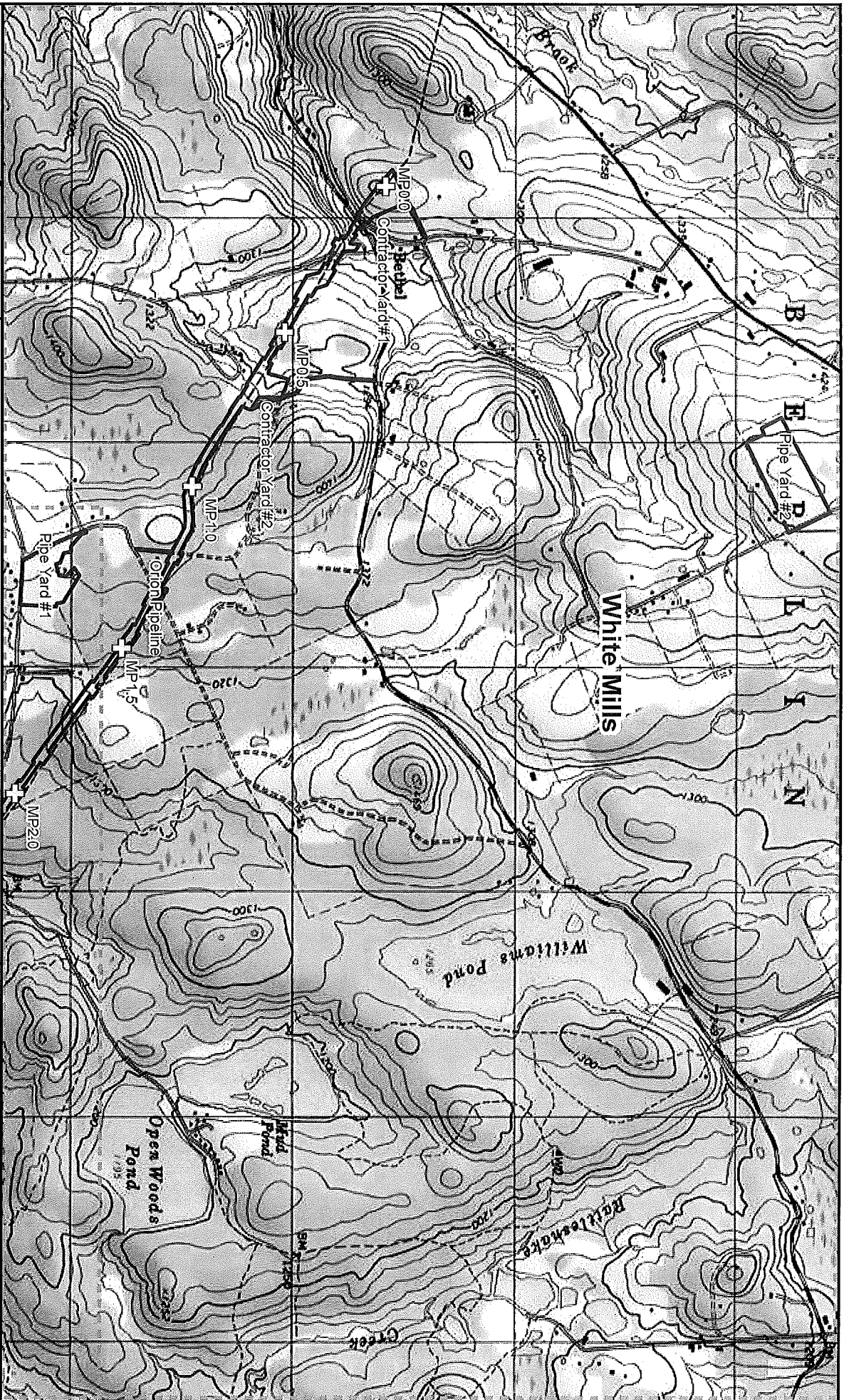
TGP – Orion Pipeline Project Loop 322 Wayne and Pike Counties, Pennsylvania Project Area Impacts			
Project Area	Features	Impact Area (acres) Temp/Perm Conv.	Total Area within Project Area in Acres
	W21aPEM	0.01/0	
	W20aPEM	1.53/0	
	W20aPFO1	0/0.39	
	W20aPFO2	0.64/0	
	S13a	0.006/0	
8-322	W19aPEM	0.33/0	1.22
	W19aPFO1	0/0.07	
	W19aPFO2	0.11/0	
	S11a	0.004/0	
	S12a	0.002/0	
	W24aPEM	0.34/0	
	W24aPFO	0.06/0	
	S15a	0.014/0	
	W23aPEM	0.29/0	
9-322	W22aPEM	0.14/0	0.14
10-322	W3bPEM	0.04/0	0.04
11-322	W4bPEM	0.29/0	3.409
	W5bPEM	0.02/0	
	W6bPEM	0.12/0	
	W7bPEM	0.48/0	
	W10bPEM	0.05/0	
	W11bPEM	0.03/0	
	W11bPSS1	0/0.23	
	W11bPSS2	1.82/0	
	W11bPFO1	0/0.15	
	W11bPFO2	0.20/0	
	S5c	0.019/0	
12-322	W20bPFO1	0/0.06	1.081
	W20bPFO2	0.05/0	
	S18b	0.011/0	
	W19bPSS	0.07/0	
	W19bPFO1	0/0.39	
	W19bPFO2	0.5/0	
13-322	W17bPEM	0.05/0	1.065
	W17bPSS1	0/0.04	
	W17bPSS2	0.23/0	

TGP – Orion Pipeline Project Loop 322 Wayne and Pike Counties, Pennsylvania Project Area Impacts			
Project Area	Features	Impact Area (acres) Temp/Perm Conv.	Total Area within Project Area in Acres
	S14b	0.035/0	
	W16bPSS	0.08/0	
	W16bPFO1	0/0.13	
	W16bPFO2	0.12/0	
	W15bPSS1	0/0.02	
	W15bPSS2	0.16/0	
	W15bPFO1	0/0.01	
	W15bPFO2	0.03/0	
	S10b	0.002/0	
	W14bPSS	0.01/0	
	W12bPFO1	0/0.03	
	W12bPFO2	0.03/0	
	W13bPEM	0.06/0	
	S6b	0.024/0	
	S9b	0.004/0	

TGP – Orion Pipeline Project Loop 323 Pike County, Pennsylvania Project Area Impacts			
Project Area	Features	Impact Area (acres) Temp/Perm Conv.	Total Area within Project Area in Acres
1-323	W24bPEM	0.13/0	1.057
	W24bPFO1	0/0.06	
	W24bPFO2	0.19/0	
	S22b	0.017/0	
	W29bPEM	0.66/0	
2-323	W28bPEM	0.30/0	0.36
	W28bPFO	0.06/0	
3-323	W25bPEM	0.08/0	0.142
	W26bPEM	0.04/0	
	S23b	0.004/0	
	S24b	0.005/0	
	S25b	0.013/0	
4-323	W37aPEM	0.04/0	0.43
	W38aPEM	0.18/0	
	W38aPFO1	0/0.08	
	W38aPFO2	0.13/0	
	S21a	0.002/0	
5-323	W39aPEM	0.04/0	0.679
	S22a	0.637/0	
	S23a	0.002/0	
	S1x	0/0	
6-323	W26aPEM	0.01/0	0.132
	W26aPFO1	0/0.01	
	W26aPFO2	0.01/0	
	S18a	0.002/0	
	W27aPEM	0.05/0	
	W27aPFO1	0/0.02	
	W27aPFO2	0.03/0	
7-323	W28aPEM	0.03/0	0.03
8-323	S19a	0.003/0	0.003
9-323	W30aPEM	0.08/0	0.11
	W30aPFO	0.03/0	
10-323	W31aPEM	0.02/0	0.02
11-323	W32aPEM	0.1/0	0.148
	W32aPFO1	0/0.01	
	W32aPFO2	0.02/0	

TGP – Orion Pipeline Project Loop 323 Pike County, Pennsylvania Project Area Impacts			
Project Area	Features	Impact Area (acres) Temp/Perm Conv.	Total Area within Project Area in Acres
1-323	W24bPEM	0.13/0	1.057
	W24bPFO1	0/0.06	
	W24bPFO2	0.19/0	
	S22b	0.017/0	
	W29bPEM	0.66/0	
2-323	W28bPEM	0.30/0	0.36
	W28bPFO	0.06/0	
12-323	W33aPEM	0.02/0	0.02

TGP – Orion Pipeline Project Appurtenant Facilities Wayne and Pike Counties, Pennsylvania Project Area Impacts			
Project Area	Features	Impact Area (acres) Temp/Perm Conv.	Total Area within Project Area in Acres
Pipe Yard No.1	W1cPEM	0.01/0	0.03
	W4cPEM	0.01/0	
	W5cPEM	0.01/0	
TAR-8	W11bPSSAR	0.04/0	0.045
	S5cAR	0.005/0	
Corilla Lake	W1x	0.04/0	0.04



Source: USDA US topo maps, White Mills (1983), PA; Narrowsburg (1983), NY-PA; Hawley (1983), PA; Rowland (1983), PA; Eldred (1967), NY-PA; and Shohola (1983), NY-PA.

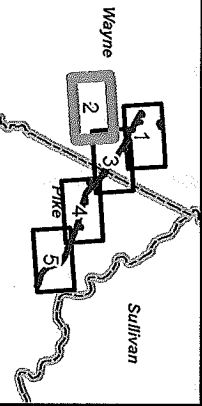
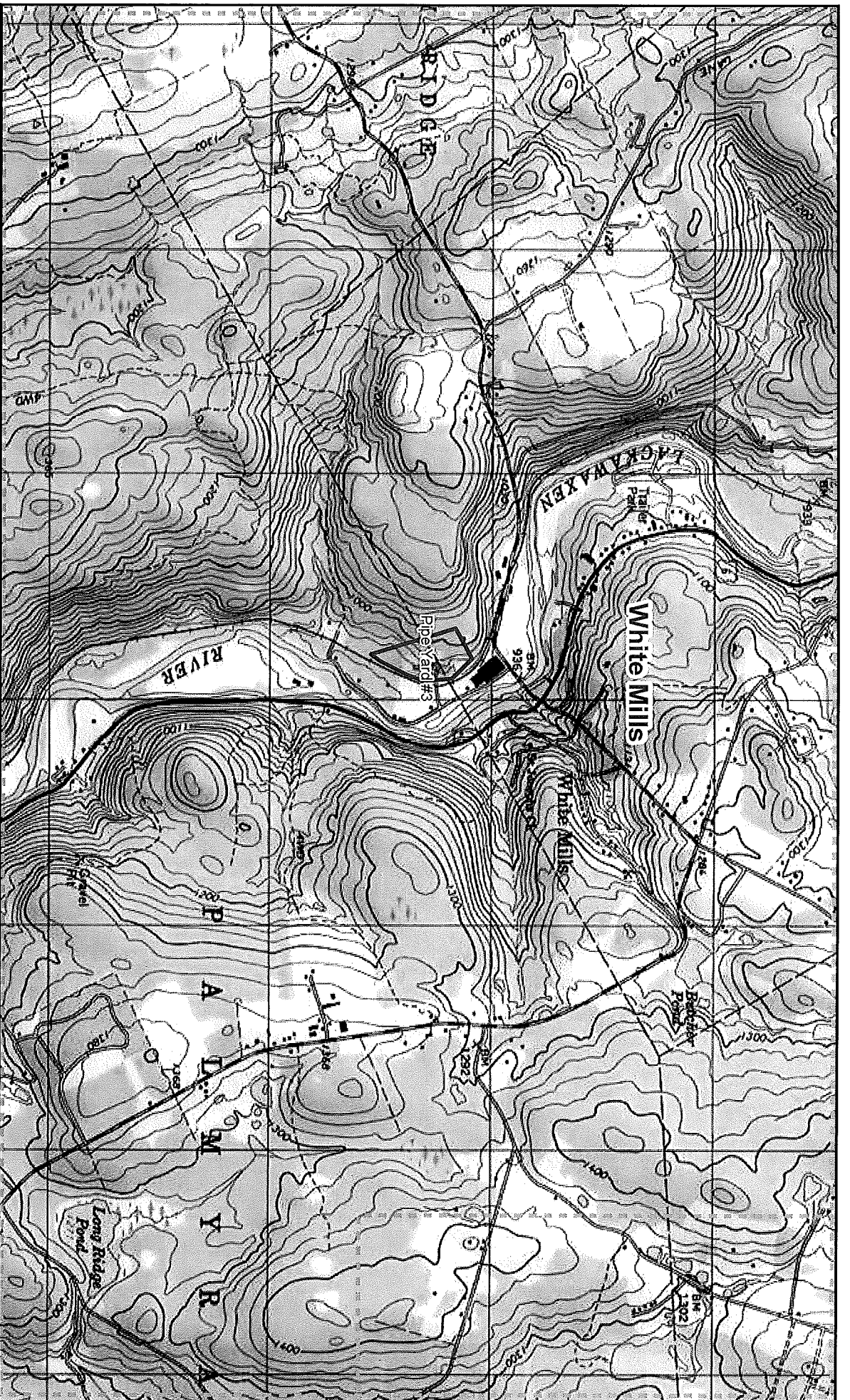
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- Mile Posts
- Limits of Disturbance
- USGS Topo Boundary
- Page Boundary

0 1,000 2,000 Feet

USGS Location Site Map for
Orion Project
Wayne and Pike Counties, Pennsylvania

Prepared For:	Tennessee Gas Pipeline Company, LLC. <small>a Kinder Morgan company</small>	Sheet 1 of 5
Prepared By:	TETRA TECH	Date: 9/30/2015



Source: Source: USDA US topo maps, White Mills (1983), PA, Narrowsburg (1983), NY-PA, Hawley (1983), PA, Rowland (1983), PA, Eldred (1967), NY-PA, and Shohola (1983) NY-PA

Legend



Mile Posts



Limits of Disturbance



USGS Topo Boundary



0 1,000 2,000 Feet

USGS Location Site Map for

Orion Project

Wayne and Pike Counties, Pennsylvania

Prepared

For:

Tennessee Gas Pipeline Company, LLC.
a tetrastar company

Sheet 2 of 5

Prepared

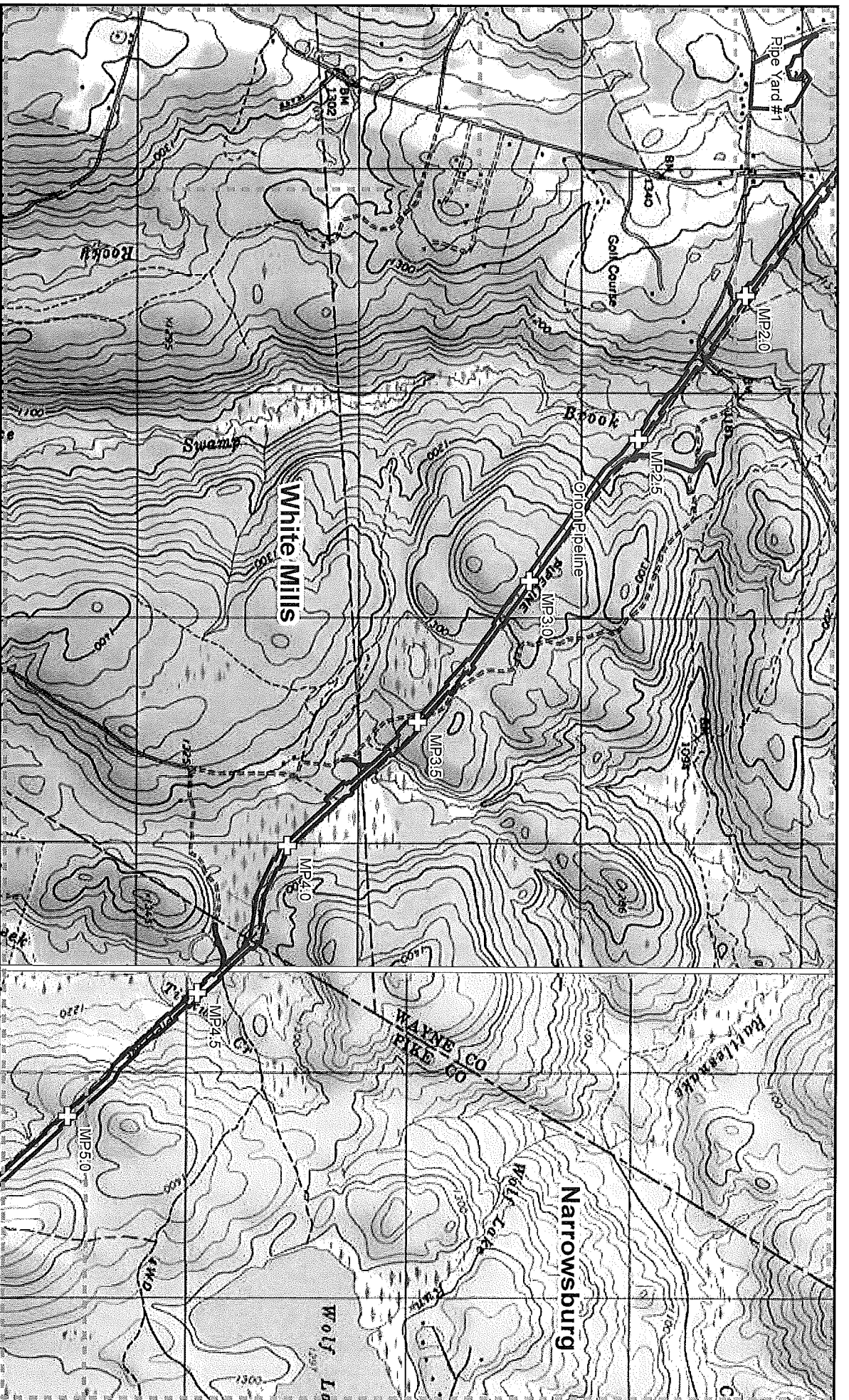
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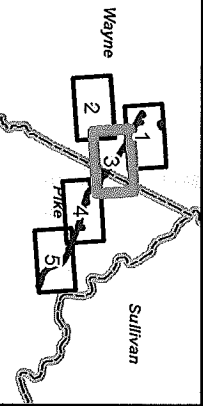
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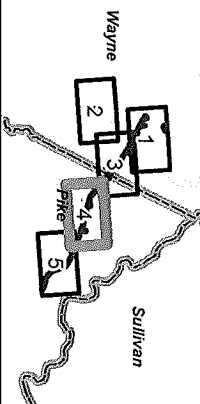
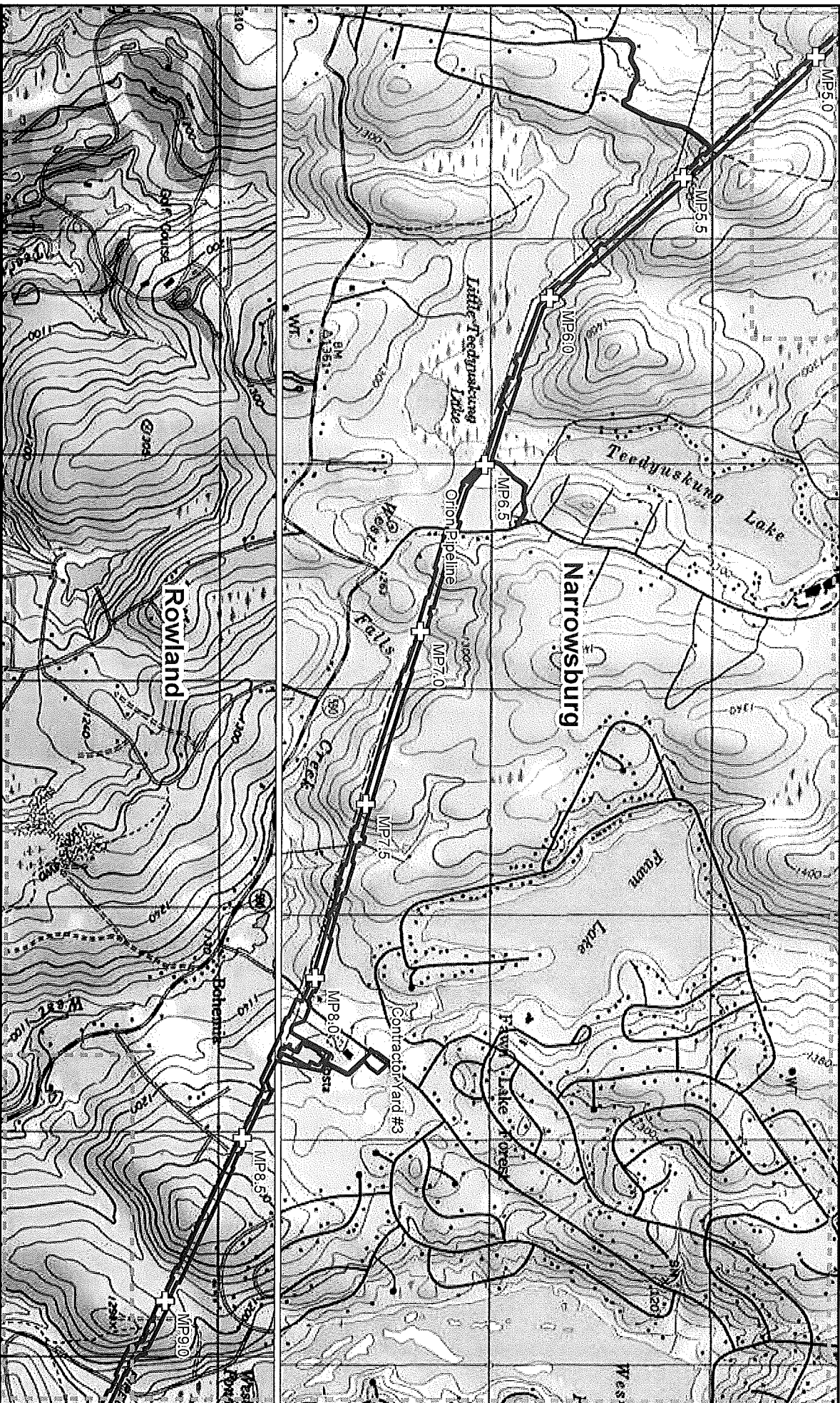
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9/30/2015



Source: Source: USDA US topo maps, White Mills (1983), PA, Narrowsburg (1983), NY-PA, Hawley (1983), PA, Rowland (1983), PA, Eldred (1967), NY-PA, and Shohola (1983) NY-PA





Source: Source: USDA US topo maps, White Mills (1983), PA; Narrowsburg (1983), NY-PA; Hawley (1983), PA; Rowland (1983), PA; Elford (1967), NY-PA; and Shohola (1983) NY-PA.

Legend

⊕ Mile Posts

▬ Limits of Disturbance

▬ USGS Topo Boundary

0 1,000 2,000 Feet

North Arrow

USGS Location Site Map for

Orion Project

Wayne and Pike Counties, Pennsylvania

Prepared For:

Tennessee Gas Pipeline Company, LLC



2.1000000000000000

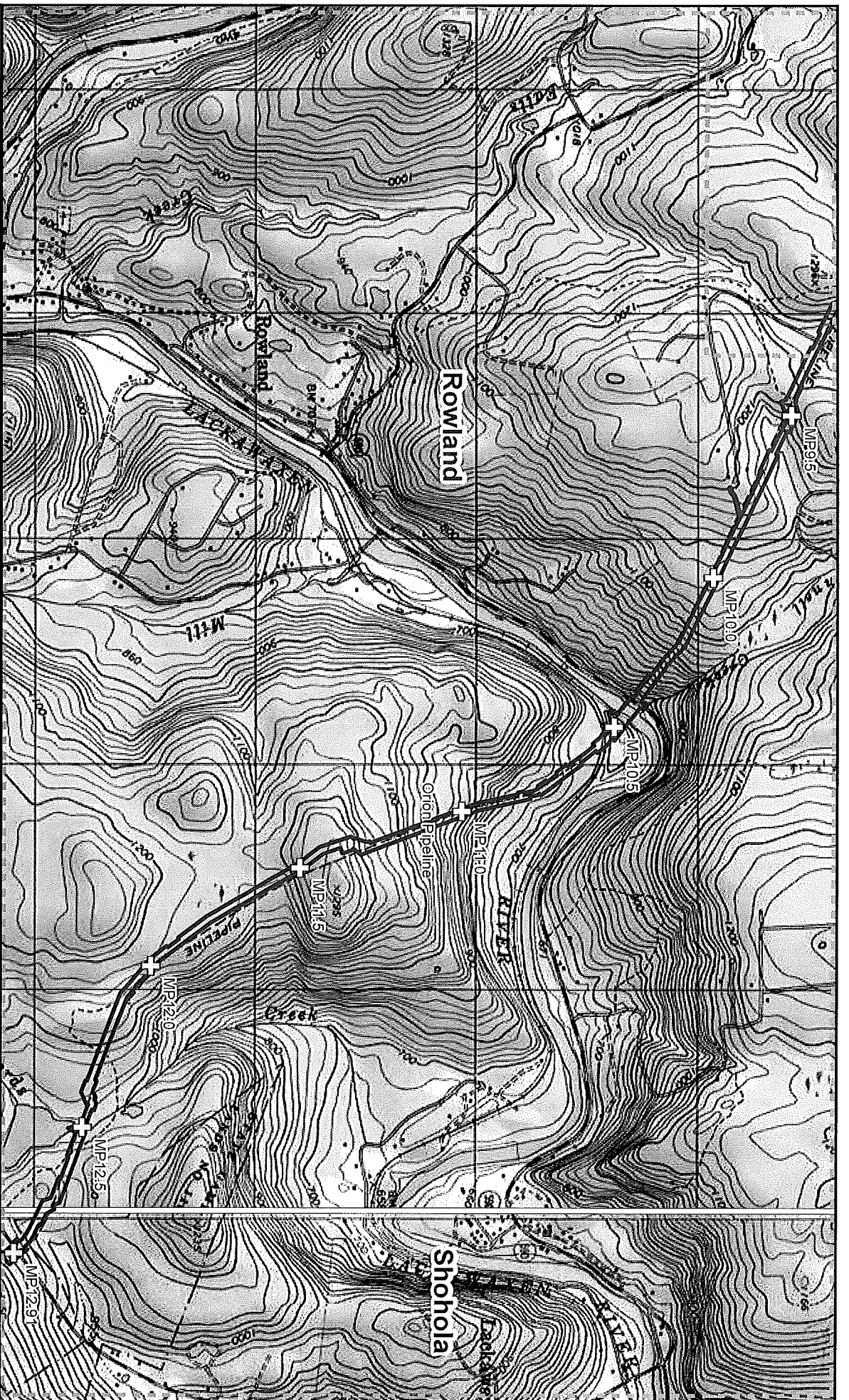
Prepared By:

TETRA TECH



Date:

9/30/2015



Legend



Mile Posts



Limits of Disturbance



USGS Topo Boundary



Page Boundary



0 1,000 2,000
Feet

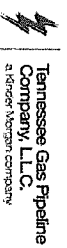
USGS Location Site Map for

Orion Project

Wayne and Pike Counties, Pennsylvania

Prepared

For:



Sheet 5 of 5

Prepared

By:

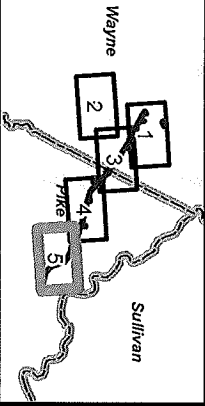


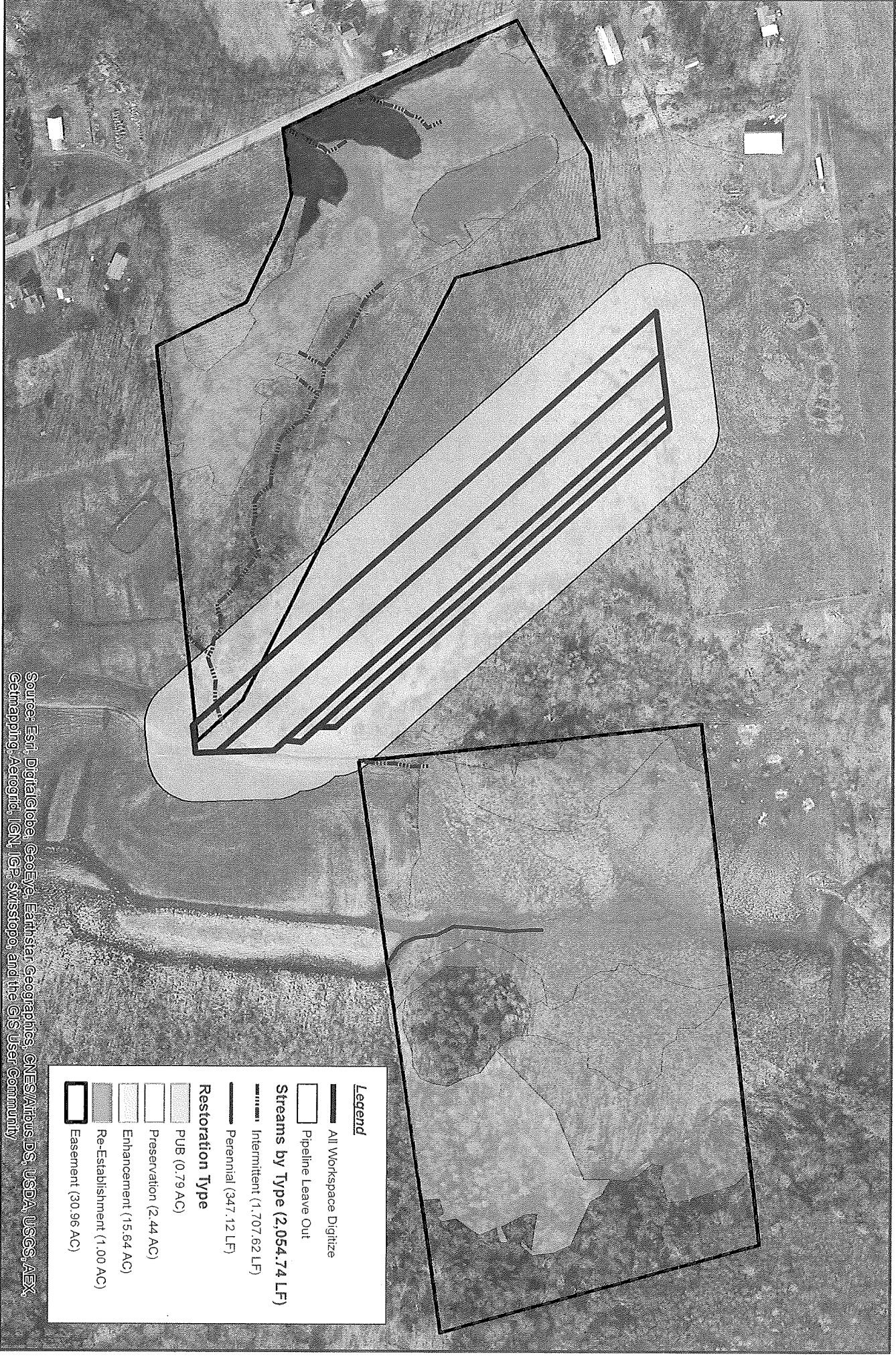
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Date:

9/30/2015

Source: Source: USDA US topo maps, White Mills (1983), PA; Narrowsburg (1983), NY-PA; Hawley (1983), PA; Rowland (1983), PA; Eldred (1967), NY-PA; and Shohola (1983), NY-PA.





Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aergrid, IGN, IGP, swisstopo, and the GIS User Community

Legend

- All Workspace Digitize
- Pipeline Leave Out

Streams by Type (2,054.74 LF)

- Intermittent (1,707.62 LF)
- Perennial (347.12 LF)

Restoration Type

- PUB (0.79 AC)
- Preservation (2.44 AC)
- Enhancement (15.64 AC)
- Re-Establishment (1.00 AC)
- Easement (30.96 AC)

LACKAWAXEN CREEK RESTORATION SITE
WAYNE COUNTY, PENNSYLVANIA

Date: 3/31/2016

Drawn by: NGO

Checked by: xxxxxxxx

PipelineLeaveOut.mxd