

Appendix E2

Pennsylvania Waters Crossed by the Project Workspace in the Delaware River Basin - Desktop Review Waterbodies Only

MP <sup>a</sup>	County	Latitude <sup>1</sup>	Longitude <sup>1</sup>	Waterbody Name <sup>2</sup>	Waterbody ID <sup>3</sup>	Waterbody ID Method <sup>4</sup>	FERC Class <sup>5</sup>	Water Type <sup>6</sup>	Stream Type <sup>7</sup>	Chapter 93 Designated or Existing Use <sup>8</sup>	Wild Trout <sup>9</sup>	ATW <sup>10</sup>	Upstream Drainage (acres)	Crossing Width <sup>11</sup>	Areas Affected <sup>12</sup>		Instream Cons. Period <sup>13</sup>	Pipeline Crossing Method <sup>14</sup>	Temp. Equip. Bridge	Alignment Sheet, Plan Sheet, or Figure#
															Temp. ROW	Perm. ROW				
<b>PennEast Mainline - Upper Delaware River Basin</b>																				
15.7, AR-031C	Luzerne	41.21788	-75.73333	UNT to Bear Creek	PA-NHD-028	Desktop Survey	Minor	RPW	P	HQ-CWF, MF	-	-	<100	11***	0.008	0.000	6/1-9/30	N/A	Yes	000-03-01-033
21.8, AR-033	Luzerne	41.14844	-75.67744	Stony Run	PA-NHD-039	Desktop Survey	Int.	RPW	I	HQ-CWF, MF	III	-	2000	12***	0.008	0.000	6/1-9/30	N/A	Yes	000-03-03-019.1
23.4, AR-034C	Carbon	41.10861	-75.68615	UNT to Lehigh River	PA-NHD-124	Desktop Survey	Minor	RPW	I	HQ-CWF, MF	III	-	<100	5***	0.004	0.000	6/1-9/30	N/A	Yes	000-03-03-019.4
25.0, AR-034	Carbon	41.09944	-75.68344	UNT to Lehigh River	PA-NHD-040	Desktop Survey	Minor	RPW	P	HQ-CWF, MF	III	-	339	9***	0.013	0.000	6/1-9/30	N/A	Yes	000-03-03-020.1
29.2R2, AR-036A	Carbon	41.05151	-75.61700	UNT to Tunkhannock Creek	PA-NHD-125	Desktop Survey	Minor	RPW	P	HQ-CWF, MF	III	-	<100	6***	0.004	0.000	6/1-9/30	N/A	Yes	000-03-03-022.1
29.2R2, AR-036A	Carbon	41.05063	-75.60381	UNT to Tunkhannock Creek	PA-NHD-125	Desktop Survey	Minor	RPW	P	HQ-CWF, MF	III	-	<100	6***	0.004	0.000	6/1-9/30	N/A	Yes	000-03-03-022.1
29.2R2, AR-036A	Carbon	41.05020	-75.59959	UNT to Tunkhannock Creek	PA-NHD-125	Desktop Survey	Minor	RPW	P	HQ-CWF, MF	III	-	<100	6***	0.004	0.000	6/1-9/30	N/A	Yes	000-03-03-022.1
32.8R2, AR-038	Carbon	41.00857	-75.61535	UNT to Mud Run	S-SUR-044	Desktop Survey	Minor	RPW	P	HQ-CWF, MF	III	-	<100	5	0.007	0.000	6/1-9/30	N/A	Yes	000-03-01-066
36.1	Carbon	40.96232	-75.63004	Yellow Run	PA-NHD-049	Desktop Survey	Minor	RPW	P	EV, MF	III	-	518.4	3	0.001	0.003	6/1-9/30	Dry Crossing	Yes	000-03-01-073
39.6R2	Carbon	40.92001	-75.61865	UNT to Pine Run	PA-NHD-054	Desktop Survey	Minor	RPW	P	EV, MF	III	-	<100	5	0.002	0.002	6/1-9/30	Dry Crossing	Yes	000-03-01-080
40.1R2	Carbon	40.91343	-75.61355	UNT to Pine Run	PA-NHD-057	Desktop Survey	Minor	RPW	P	EV, MF	III	-	<100	5	0.003	0.006	6/1-9/30	Dry Crossing	Yes	000-03-01-081
41.1	Carbon	40.90309	-75.60081	UNT to White Oak Run	PA-NHD-060	Desktop Survey	Minor	RPW	I	EV, MF	III	-	76.8	3	0.002	0.003	6/1-9/30	Dry Crossing	Yes	000-03-01-083
41.2	Carbon	40.90302	-75.59949	UNT to White Oak Run	PA-NHD-061	Desktop Survey	Minor	RPW	I	EV, MF	III	-	96	4	0.002	0.005	6/1-9/30	Dry Crossing	Yes	000-03-01-083
41.2	Carbon	40.90302	-75.59949	UNT to White Oak Run	PA-NHD-063	Desktop Survey	Minor	RPW	I	EV, MF	III	-	56.32	4	0.002	0.005	6/1-9/30	Dry Crossing	Yes	000-03-01-083
41.3	Carbon	40.90288	-75.59672	UNT to White Oak Run	PA-NHD-062	Desktop Survey	Minor	RPW	I	EV, MF	III	-	83.2	6	0.003	0.007	6/1-9/30	Dry Crossing	Yes	000-03-01-083
41.6	Carbon	40.90078	-75.59228	White Oak Run	PA-NHD-056	Desktop Survey	Minor	RPW	P	EV, MF	III	-	691.2	7	0.004	0.008	6/1-9/30	Dry Crossing	Yes	000-03-01-084
42.1R2	Carbon	40.89660	-75.58407	UNT to Wild Creek	PA-NHD-065	Desktop Survey	Minor	RPW	P	EV, MF	III	-	<100	5	0.004	0.008	6/1-9/30	Dry Crossing	Yes	000-03-01-085
44.8R2, AR-045	Carbon	40.87490	-75.54425	UNT to Hunter Creek	PA-NHD-070	Desktop Survey	Minor	RPW	I	HQ-CWF, MF	III	-	<100	7***	0.003	0.000	6/1-9/30	N/A	Yes	000-03-01-090
44.8R2	Carbon	40.87430	-75.54435	UNT to Hunter Creek	PA-NHD-070	Desktop Survey	Minor	RPW	I	HQ-CWF, MF	III	-	<100	7	0.037	0.008	6/1-9/30	Dry Crossing	Yes	000-03-01-090
49.3R2	Carbon	40.82414	-75.51666	Aquashicola Creek	PA-NHD-079	Desktop Survey	Minor	RPW	P	HQ-CWF, MF	III	ATW	14931	35	0.008	0.020	6/1-9/30	Dry Crossing	Yes	000-03-01-100
53.3	Northampton	40.79917	-75.49402	UNT to Indian Creek	S-SUR-081	Desktop Survey	Minor	RPW	P	CWF, MF	III	-	<100	7	0.004	0.008	6/1-9/30	Dry Crossing	Yes	000-03-01-107
53.4	Northampton	40.79907	-75.49282	UNT to Indian Creek	S-SUR-082	Desktop Survey	Minor	RPW	P	CWF, MF	III	-	<100	4	0.002	0.005	6/1-9/30	Dry Crossing	Yes	000-03-01-107
54.3	Northampton	40.78988	-75.48126	Indian Creek	PA-NHD-084	Desktop Survey	Int.	RPW	P	CWF, MF	III	ATW	1651	15	0.009	0.018	6/1-9/30	Dry Crossing	Yes	000-03-01-109
56.7	Northampton	40.77182	-75.44719	UNT to Hokendauqua Creek	PA-NHD-088	Desktop Survey	Minor	RPW	P	CWF, MF	III	-	851.2	22	0.005	0.020	6/1-9/30	Dry Crossing	Yes	000-03-01-114
58.5	Northampton	40.75520	-75.42302	UNT to Monocacy Creek	PA-NHD-089	Desktop Survey	Minor	RPW	I	HQ-CWF, MF	III	-	243.2	16	0.009	0.018	6/1-9/30	Dry Crossing	Yes	000-03-01-117
66.9	Northampton	40.69194	-75.30571	UNT to Monocacy Creek	PA-NHD-098	Desktop Survey	Minor	RPW	I	HQ-CWF, MF	III	-	83.2	2	0.001	0.002	6/1-9/30	Dry Crossing	Yes	000-03-01-134
70.4	Northampton	40.65089	-75.28258	UNT to Lehigh River	S-SUR-100	Desktop Survey	Minor	RPW	P	CWF, MF	-	-	1056	6	0.000	0.000	6/1-9/30	HDD	No	000-03-01-141
70.9	Northampton	40.64303	-75.27928	Lehigh Canal	PA-NHD-104	Desktop Survey	Int.	RPW	P	WWF, MF	-	-	864000	67	0.000	0.000	6/1-9/30	HDD	No	000-03-01-142
71.1	Northampton	40.64144	-75.28344	Lehigh River	PA-NHD-099	Desktop Survey	Major	TNW <sup>a</sup>	P	WWF, MF	-	-	864000	305	0.000	0.000	6/1-9/30	HDD	No	000-03-01-143
72.2, AR-074	Northampton	40.62809	-75.26987	UNT to Bull Run	S-SUR-112	Desktop Survey	Minor	RPW	P	CWF, MF	III	-	<100	3	0.002	0.000	6/1-9/30	N/A	Yes	000-03-01-145
76.5, AR-079	Bucks	40.59414	-75.21180	UNT to Cook Creek	PA-NHD-120	Desktop Survey	Minor	RPW	P	EV, MF	III	-	<100	10***	0.007	0.000	6/1-11/30	N/A	Yes	000-03-03-055
<b>Hellertown Lateral - Upper Delaware River Basin</b>																				
0.2	Northampton	40.62984	-75.28129	Bull Run	PA-NHD-110	Desktop Survey	Int.	RPW	P	CWF, MF	III	-	550	12	0.015	0.040	6/1-9/30	Dry Crossing	Yes	000-03-01-229
<b>Compressor Station - Upper Delaware River Basin</b>																				
Carbon					(none)															
<b>Total Desktop Surveyed Waterbodies Affected</b>														<b>620</b>	<b>0.177</b>	<b>0.186</b>				

Notes:

a. All route deviations implemented after the September 2015 FERC Filing are denoted with an "R" and indicate a milepost equation. Mileposts with an "R1" indicate route deviations implemented and provided to FERC prior to the issuance of the Draft Environmental Impact Statement. Mileposts with an "R2" indicate route deviations implemented as part of this September 2016 Supplemental Filing. All mileposts without an "R" indicate that the route has not changed since the September 2015 Application.

1. Latitude and Longitude are in Decimal Degrees (dd) North American Datum (nad83).
2. Waterbody names were based on United States Geological Service (USGS) National Hydrology Database (NHD) Data (USGS, 2014) and PA Code Ch. 93 data (PSIE, 2013).
3. Waterbody IDs were generated during field delineation or were assigned based on USGS National Hydrology Database (NHD) Data (USGS, 2014) to the closest northern milepost.
4. Waterbody identification method includes features classified as Field Delineation which were identified during field survey and features classified as Desktop Survey which were identified during a desktop evaluation.
5. Wetland and Waterbody Construction and Mitigation Procedures (FERC, 2013).

FERC classifies waterbodies as any natural or artificial stream, river, or drainage with perceptible flow at the time of crossing, and other permanent waterbodies such as ponds and lakes: "minor waterbody" (Minor) includes all waterbodies less than or equal to 10 feet wide at the water's edge at the time of crossing; "intermediate waterbody" (Intermediate) includes all waterbodies greater than 10 feet wide but less than or equal to 100 feet wide at the water's edge at the time of crossing; and "major waterbody" (Major) includes all waterbodies greater than 100 feet wide at the water's edge at the time of crossing. FERC Classifications for NHD waterbodies were determined by measuring the distance of the waterbody at the crossing point using aerial photographs. If the stream was not visible on the aerial photograph the stream was designated as minor, with a crossing distance of "<10" feet. Classification may change based on conditions at time of construction.

6. Section 10 waters per Army Corps of Engineers Data (USACE, 2010), Section 404 Guidelines (USACE, 2011).

Key:

TNW\* = Traditional Navigable Waters, including territorial seas. TNW also refers to Section 10 waters per Army Corps of Engineers data; all other waterbodies fall under Section 404 guidelines (USACE, 2010; USACE, 2011)

RPW = Relatively Permanent Waters (RPWs) that flow directly or indirectly into TNWs

NRPW = Non-RPWs that flow directly or indirectly into TNWs

7. USGS National Hydrology Database (NHD) Data (USGS, 2014).

For delineated streams, perennial/intermittent/ephemeral determinations were made, and based on channel definition, i.e., having a defined bed and bank, and, as directed by PADEP (Mackowski, personal comm. 2012), by determination of stream flow using geomorphic, hydrological and biological indicators, utilizing the North Carolina Division of Water Quality (2005) identification methods as guidelines. For NHD waterbodies, perennial/intermittent/ephemeral designations were assigned in the NHD data layer.

Key:

P = Perennial

I = Intermittent

E = Ephemeral

8. Pennsylvania Code Ch. 93 Designated Use (Pennsylvania Code 2014) and Pennsylvania Statewide Existing Use Classifications (PADEP 2014). In instances where a stream has both a Designated Use and an Existing Use Designation, the Existing Use Designation is listed.

Key:

EV = Exceptional Value Waters

HQ = High Quality Waters. Surface water that meets one or more to the conditions listed in 93.4b.

CWF = Cold Water Fishes. Maintenance or propagation, or both, to fish species including the family Salmonidae and additional flora and fauna, which are indigenous to a cold water habitat.

WWF = Warm Water Fishes. Maintenance and propagation to fish species and additional flora and fauna, which are indigenous to a warm water habitat.

MF = Migratory Fishes. Passage, maintenance, and propagation to anadromous and catadromous fishes and other fishes, which ascend to flowing waters to complete their life cycle.

9. Wild Trout Waters, Natural Reproduction, July 2016 (PFBC, 2016a), Class A Wild Trout Waters, July 2016 (PFBC, 2016b).

Wild Trout Waters include:

I = Class A Wild Trout Streams: Streams that support a population to naturally produced trout to sufficient size and abundance to support a long-term and rewarding sport fishery.

II = Wilderness Trout Streams: Wilderness trout stream management is based upon the provision to a wild trout fishing experience in a remote, natural, and unspoiled environment where man's disruptive activities are minimized.

III = Wild Trout Streams: Stream sections supporting naturally reproducing populations to trout. A wild trout stream section is a biological designation that does not determine how it is managed; therefore, these streams may also be stocked with hatchery trout by the Commission.

10. Approved Trout Streams (PFBC, 2016d).

ATW = Approved Trout Waters

TS= Trout Stocked Streams

11. Crossing width based on waters at time to delineation or aerial photography for NHD waters and may vary at time to construction. Direct Impacts to waterbodies will be limited to the trenching activities will be limited to the trenching activities associated with the installation to the pipeline. Trenches are typically less than 25 feet wide. Every attempt to preserve the integrity to the stream flow, bed, and banks outside to the trench will be undertaken.

12. Acreages that are presented in this table may differ from those presented in federal and state permit applications due to agency-specific calculation methods.

13. Per FERC Guidelines, or State restrictions where more strict – see Resource Report 3

14. Dry crossing methods include: 1) Flumed Crossing and 2) Dam and Pump Crossing; Modified Dry crossing method (Mainline crew completes trenching using Flumed or Dam and Pump method, then flume is installed; lowering-in crew removes flume and completes lowering-in of pipe and backfilling of waterbody using Flumed or Dam and Pump Method); Wet crossing method or Open Cut Crossing (trenching and backfilling in the waterbody-not including blasting or other rock breaking measures-is complete within 24 hours).

\*\*\* Waterbody does not cross centerline. Crossing width measured along construction ROW.