

Alternative Analysis Table  
Wetland Resources  
Bucks County

| Wetland ID and Crossing Number <sup>1</sup> | State Wetland Classification <sup>2</sup> | Cowardin Classification <sup>3</sup> | Milepost <sup>4</sup> | Latitude  | Longitude  | Primary Pipeline Crossing Method <sup>5</sup> | Secondary Pipeline Crossing Method <sup>5</sup> | Tertiary Pipeline Crossing Method <sup>5</sup> | Geology Constraints | Topography Constraints | Insufficient Workspace to Stage Trenchless | Practicality | Other (See Justification) | Implementing Trenchless Technology | Routing to Minimize | Crossing at Narrowest Location | Co-Locating | Reducing LOD | Minimizing Construction Duration | Adhering to Construction Timing Windows | Implementing BMPs | Justification   |
|---|---|--------------------------------------|-----------------------|-----------|------------|---|---|--|---------------------|------------------------|--|--------------|---------------------------|------------------------------------|---------------------|--------------------------------|-------------|--------------|----------------------------------|---|-------------------|---|
| 110714_JC_001_PFO                           | Other                                     | PFO1                                 | 77.5                  | 40.584304 | -75.196829 | CL - HDD                                      | -   | -  |                     |                        |  | X            | X                         | X                                  |                     |                                |             |              |                                  |   | X                 | Crossing via Delaware River HDD to minimize impacts to wetland complex. |

Notes:

1. In instances where a wetland is crossed by the proposed pipeline or workspace multiple times, crossing numbers (e.g. "-1", "-2") have been added to the Wetland ID.

2. Resource Value Definitions: Pennsylvania Exceptional Value Wetland as defined by PA Code §105.17 (relating to special criteria for projects affecting important wetlands). Criteria are:

(ix) Serves as habitat for fauna or flora listed as "threatened" or "endangered"

(x) Is hydrologically connected to or located within a 1/2-mile from habitat for fauna or flora listed as "threatened" or "endangered" and wetland dependent;

(xi) Located in or along the floodplain of the reach or tributaries of a wild trout stream or waters listed as exceptional value;

(xii) Located along an existing public or private drinking water supply.

3. Wetland Cover Type based on Cowardin, 1979

Key: PEM1 = palustrine emergent, persistent; PEM2 = palustrine emergent, non-persistent; PFO1 = palustrine forested, broad-leaved deciduous; PFO4 = palustrine forested, needle-leaved evergreen; PSS1 = palustrine scrub-shrub, broad-leaved deciduous; PSS3 = palustrine scrub-shrub, broad-leaved evergreen.

4. All route deviations implemented after the FERC Certificate Application are denoted with an "R" and indicate a MP equation. MPs with an "R1" indicate route deviations implemented and provided to FERC prior to the issuance of the DEIS. MPs with an "R2" indicate route deviations implemented as part of the September 2016 Route Update. MPs with an "R3" indicate route deviations implemented post-FERC Certificate issuance. All MPs without an "R" indicate that the route has not changed since the Certificate Application.

5. Crossing Type Key for Wetlands:

- CL-Bore = Pipeline centerline crosses under wetland. Construction method is bore.

- CL-HDD = Pipeline centerline crosses under wetland. Construction method is HDD.

- CL-Open Cut = Pipeline centerline impacts wetland. Construction method is open cut.

- Matted = Wetland will be matted for temporary equipment crossing.

- N/A = Not affected by pipeline construction.

- N/A-Workspace = Pipeline trench does not impact wetland.

- "-" = No alternative construction method is proposed.