STREAM BIOLOGICAL CONDITIONS
ENVIRONMENTAL AUDITOR REPORT

Version 2.3

Wetland Studies and Solutions, Inc.® a DAVEY company

Stream ID: S-B21	**Crossing Start Date:** 11/25/2023	**Crossing Completion Date:** 12/20/2023
Milepost: 245.9	**Pre-Con Assessment Date:** 11/24/2023	**Post-Con Assessment Date:** 12/20/2023
Station: 12992+70	**Stream Classification:** Perennial **(Perennial, Intermittent, Ephemeral)**	**Bankfull Width (ft.):** 4
County: Roanoke	**303(d) Impairment Listing:** Not Impaired	**Riffle:Pool Complexes Present?** No

Item #	Resource Crossing Conditions	N/A	YES	NO
1.	Were all applicable resource specific crossing conditions satisfied? Time of Year Restrictions (TOYR)? Yes Fish Relocation? Yes Mussel Relocation? N/A		X	
2.	Is this resource designated a wild or stockable trout stream?			X
3.	Which crossing methods were utilized during the stream crossing? *(Select one or more)* Dam & Pump, Flume, Cofferdam, Conventional Bore, Horizontal Directional Drill (HDD) Bore?	Dam & Pump, Flume		
4.	Was the top 1-foot (12-inches) of streambed substrate segregated and stockpiled separate from trench spoils?		X	
5.	Was excess material not needed for backfill removed and disposed of in an upland area?		X	
6.	Was the top 12-inches of backfill made with clean native stream substrate?		X	
7.	Was the pre-construction survey data provided and utilized during restoration in attempt to re-establish pre-construction contours?		X	
8.	Were any field modifications to the stream implemented by project or regulatory personnel to address potential drainage or bank restoration limitations?			X
9.	Were impervious trench breakers/plugs properly installed within 25-feet of top-of-bank to prevent subsurface erosion to or from the resource area?		X	
10.	Was permanent seed and stabilization material (straw or matting) applied to riparian areas and stream banks prior to re-establishing flow to the impact area of the channel?		X	
11.	Was the time of disturbance minimized by conducting resource work continuously to completion?		X	
12.	Have civil surveys been scheduled to verify as-built conditions meet pre-construction conditions in accordance with the project Mitigation Framework and federal/state permit requirements?		X	
13.	Are bareroot saplings required and/or scheduled to be planted for the dormant season (10/1 – 4/30)?	X		
14.	Did any unauthorized discharges to unpermitted resources occur during the crossing? If so, explain the corrective actions implemented in the Comments section and include additional photos.			X

Item #	Biological Conditions	Pre-Con	Post-Con
15.	**Predominant Substrate Type (select one):** *Bedrock, Boulder (>10"), Cobble (2-10"), Gravel (0.1-2"), Sand (<0.1"), Mud/Silt/Clay*	Mud/Silt/Clay	Mud/Silt/Clay
16.	**Channel Conditions:** **Rating:** *1-Optimal (80-100% stable banks), 2-Suboptimal (60-80% stable banks), 3-Marginal (40-60% stable banks), 4-Poor (20-40% stable banks), 5-Severe (0-20% stable banks, highly eroded or unvegetated banks)*	3 - Marginal	2 - Suboptimal
17.	**Riparian Buffer Zone within ROW and ≤50 ft. from Stream Top-of-Bank:** **Rating:** *1-Optimal (60-100% heavy vegetative cover), 2-Suboptimal (30-60% mixed vegetated coverage), 3-Marginal (<30% vegetative coverage), 4-Poor (Mowed/maintained area or farmland, impervious area, sparsely vegetated coverage, etc.)*	2 - Suboptimal	1 - Optimal
18.	**Instream Habitat Conditions:** **Examples:** *Varied substrate sizes, varied combination of water velocities/depths, presence of woody/leafy debris, stable substrate with low amount of mobile particles, low embeddedness, shade protection, undercut banks, root mats, submerged aquatic vegetation.* **Rating:** *1-Optimal (Habitat conditions present in >50% of resource), 2-Suboptimal (Habitat conditions in 30-50% of resource), 3-Marginal (Habitat conditions in 10-30% of resource), 4-Poor (Habitat conditions in 0-10% of resource)*	3 - Marginal	2 - Suboptimal
19.	**Channel Alterations:** **Examples:** *Straightened channel, non-MVP stream crossings, non-native riprap/rock along banks, concrete/gabions/concrete block, manmade embankments, constrictions w/in channel, livestock or agricultural impacts.* **Rating:** *1-Negligible (unaltered/natural stream), 2-Minor (20-40% of resource disrupted by channel alterations), 3-Moderate (40-80% of resource disrupted), 4-Severe (>80% of resource disrupted)*	1 - Negligible	1 - Negligible

Comments/Remarks

The MVP EI is Chris Seymour, and the Precision Pipeline foreman is Sam Grey.

11/24/23: The pre-construction meeting was held, and the pre-construction assessment was made. The anticipated start date to dig up the pipe for engineering is Monday, 11/25. The pre-existing dewatering structure was constructed parallel to the ROW to have the additional space required to extend the trench pit. -A. Thorpe

11/25/23: A portion of W-B24-PSS was excavated to expose the top of the pipe for engineering access. After the engineers finished their work, the equipment and timber mats were removed, the exposed wetland was strawed, and the topsoil pile was covered with Curlex. -A. Thorpe

11/26/23: The survey crew verified the wetland and stream contours with stakes. The dewatering structure continues to function properly. -A. Thorpe

11/27/23: The pre-existing bore pit and trench box was partially backfilled to reroute the timber mat bridge for easier equipment access. -A. Thorpe

11/28/23 & 11/29/23: Work continued on the B25 crossings within the ROW. -A. Thorpe

11/30/23: The crew completed Erosion and Sediment (E&S) tasks to prepare for the upcoming rain. -A. Thorpe

12/1/23: The crew was able to work in the upland for half the day due to inclement weather. -N. Filip

12/2/23: The remainder of the timber mats were removed from W-B24-PSS and the area was stabilized with straw mulch. -A. Thorpe

12/4/23-12/13/23: Work continued on W-B25-PEM-1 within the ROW. -A. Thorpe

12/14/23: An informal pre-construction meeting was held to refresh the plan for this crossing. The fish relocation was completed, and the fish nets were removed after both dams, and the pump around were successfully installed. The Coming In Side (CIS) buffer was stripped and W-B24-PEM was topsoiled. Equipment mats were placed on the stripped wetland to remove the CIS 10-foot buffer for S-B21. The top 12-inches of stream bed substrate was removed and segregated separately from the trench spoils. Another dam was constructed upstream of the downstream dam to denote the undisturbed stream boundary. The other half of the topsoil for W-B24-PSS was excavated (the first half was excavated on 11/25/23) as well as the Going Away Side (GAS) 10-foot buffer for S-B21. Trench excavation began within all three resources. -A. Thorpe

12/15/23: Excavation was completed, and the GAS trench box was installed. The ditch line was padded, and the pipe was lowered into the trench. Welding of the pipe began. -A. Thorpe

12/16/23: QA/QC was completed on the weld. The pipe was padded with dirt and the impervious trench breakers on the CIS and GAS were constructed with bentonite bags. The stream section was completely backfilled with subsoil (not to grade) and the area was stabilized for the upcoming rain. The dams were built higher and extra pumps are on hand if they are needed. The pumps will be watched overnight during the inclement weather. -A. Thorpe

12/18/23: Final restoration of the stream began. Survey shot the banks and thalweg to grade, and the top 12-inches of fill was made with clean, native stream bed substrate. The banks were seeded with riparian seed mix and stabilized with Curlex. The dams and pumps were removed, and flow was returned to the stream. Restoration of W-B24-PEM was completed, and restoration of W-B24-PSS began. -S. Frost

12/19/23: Restoration of W-B24-PSS continued. The stream flow remains stable. The post-construction assessment will be conducted, and pictures will be taken upon completion of the restoration to the adjacent wetlands. -A. Thorpe

12/20/23: The post-construction assessment was made, and pictures were taken. -A. Thorpe

No impacts to the biological conditions were observed. No unauthorized discharges were observed or reported during construction.

In accordance with the Mountain Valley Pipeline Consent Decree, Case No. CL18006874-00, (Issued October 11, 2019) this independent report was completed to document the on-site monitoring of instream invertebrate and fisheries resources during all construction activity related to waterbody and wetland crossings, and document instream conditions and any impacts to the resources.

This report was written by	Alessandra Thorpe *Print Name*	 *Signature*	12/20/2023 *Date*

Required Photos

Photo Description: Downstream view of permitted impact area during pre-construction assessment.

Photo Description: Conditions of the downstream area outside the ROW during pre-construction assessment.

Photo Description: Downstream view of permitted impact area during post-construction assessment.

Photo Description: Conditions of the downstream area outside the ROW during post-construction assessment.

Optional Additional Photos

Photo Description: An overview of the dewatering structure.

Photo Description: The fish relocation being conducting prior to the resource crossing.

Photo Description: Excavation of the streambed substrate.

Photo Description: Backfilling of the stream substrate.