

# STREAM BIOLOGICAL CONDITIONS ENVIRONMENTAL AUDITOR REPORT

Version 2.3



|                          |  |   |
|--------------------------|--|---|
| <b>Stream ID:</b> S-GH15 | <b>Crossing Start Date:</b> 03/05/2024   | <b>Crossing Completion Date:</b> 03/08/2024 |
| <b>Milepost:</b> 252.1   | <b>Pre-Con Assessment Date:</b> 03/05/2024   | <b>Post-Con Assessment Date:</b> 03/08/2024 |
| <b>Station:</b> 13321+47 | <b>Stream Classification:</b> Intermittent<br>(Perennial, Intermittent, Ephemeral) | <b>Bankfull Width (ft.):</b> 4              |
| <b>County:</b> Franklin  | <b>303(d) Impairment Listing:</b> Not Impaired                                     | <b>Riffle:Pool Complexes Present?</b> No    |

| Item # | Resource Crossing Conditions   | N/A        | YES | NO |
|--------|--|------------|-----|----|
| 1.     | Were all applicable resource specific crossing conditions satisfied?<br>Time of Year Restrictions (TOYR)? <u>N/A</u> Fish Relocation? <u>N/A</u> Mussel Relocation? <u>N/A</u>               |            | X   |    |
| 2.     | Is this resource designated a wild or stockable trout stream?  |            |     | X  |
| 3.     | Which crossing methods were utilized during the stream crossing? <i>(Select one or more)</i><br>Dam & Pump, Flume, Cofferdam, Conventional Bore, Horizontal Directional Drill (HDD) Bore?    | Dam & Pump |     |    |
| 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.    | <b>Predominant Substrate Type (select one):</b><br><i>Bedrock, Boulder (&gt;10"), Cobble (2-10"), Gravel (0.1-2"), Sand (&lt;0.1"), Mud/Silt/Clay</i>  | Mud/Silt/Clay  | Cobble (2-10") |
| 16.    | <b>Channel Conditions:</b><br><b>Rating:</b> 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   | 1 - Optimal    |
| 17.    | <b>Riparian Buffer Zone within ROW and ≤50 ft. from Stream Top-of-Bank:</b><br><b>Rating:</b> 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.)  | 1 - Optimal    | 1 - Optimal    |
| 18.    | <b>Instream Habitat Conditions:</b><br><b>Examples:</b> 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.<br><b>Rating:</b> 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) | 1 - Optimal    | 1 - Optimal    |
| 19.    | <b>Channel Alterations:</b><br><b>Examples:</b> 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.<br><b>Rating:</b> 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 |

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## Comments/Remarks

This resource was initially crossed from 11/04/23-11/09/23 and the official report was submitted on 11/10/23. This report documents the effort to repair channel erosion that occurred within the stream after the crossing was completed.

3/5/24: The MVP EI was Austin Malnar. A meeting was held to discuss the observed accelerated erosion within the resource and proposed remediation plan. The grading and remediation plan was designed by MVP personnel (John Brcic & Austin Malnar) and reviewed by the WSSI auditor team. The guidance utilized for the remediation design was specification MVP-ES25 *Riprap Streambank Protection with Optional Live Stakes*. WSSI auditors were consulted regarding the use of the remaining native rock from a previous resource crossing (S-D11) within the same watershed (North Fork Blackwater River). This material source was deemed appropriate for the remediation effort. Pre-construction photos were taken, and a pre-construction auditor assessment was performed prior to the start of work.

Channel erosion was noted in the middle of the stream bank and the erosion continued to worsen with every rain event. The restoration plan includes shaving the cut bank down, grading the vertical drop to a more gradual slope, armoring the stream bed and banks with native rock from S-D11, and stabilizing the stream bed and banks with biodegradable jute matting.


Item #4: No trench spoils were associated with the remediation effort, and all work was performed aboveground.

A dam & pump were installed upstream and a dam, energy dissipator, and pump were installed downstream. A secondary dam was installed at the centerline of the stream to account for groundwater accumulation and the upstream pump was reinstalled at the midstream dam. The existing curlex covering the banks was removed to expose the unstable soil. The left cut bank was shaved back by hand, and the soil was restored in a stair-step configuration. This creates a more gradual slope on the bank while restoring the section that eroded previously. The right bank was shaved back, and the vertical drop in the stream bed was graded to a gradual slope to enhance channel stability.

The restored bank's slopes were compacted by hand to ensure stability, and jute matting was installed on both banks and the stream bed. Native stream bed rocks were configured in the stream bed to enhance stabilization. The survey team was on-site and verified the grade was consistent with pre-construction conditions. To further enhance the stability of the temporarily impacted resource, the remainder of the pre-existing curlex was removed, the banks were re-seeded, and curlex was placed over the jute matting. All dams were removed, and flow was returned to the stream. Post-construction photos and the auditor assessment were completed shortly after work was completed in the resource. -A. Thorpe

3/8/24: The top layer of rocks was removed from the stream bed until only one layer of rock remained. The rocks were placed into Super Saks that will be removed from the buffer zone until such time as they can be reinstalled after the removal of the timber mat bridge. Post-Construction photos were taken and a post-construction assessment was completed. -A. Thorpe

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 | Alex Thorpe<br><i>Print Name</i> | <br><i>Signature</i> | 03/08/2024<br><i>Date</i> |
|----------------------------|----------------------------------|--|---------------------------|

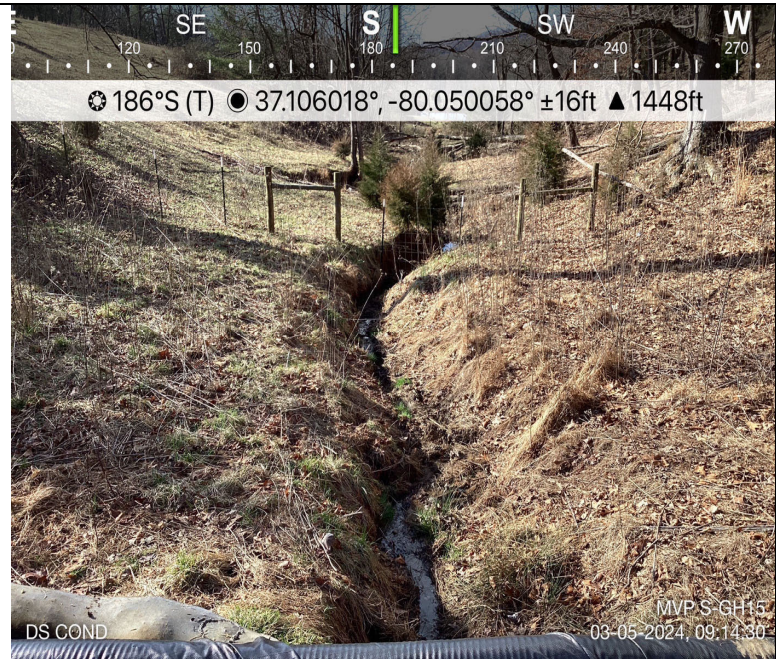
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## Required Photos



**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.

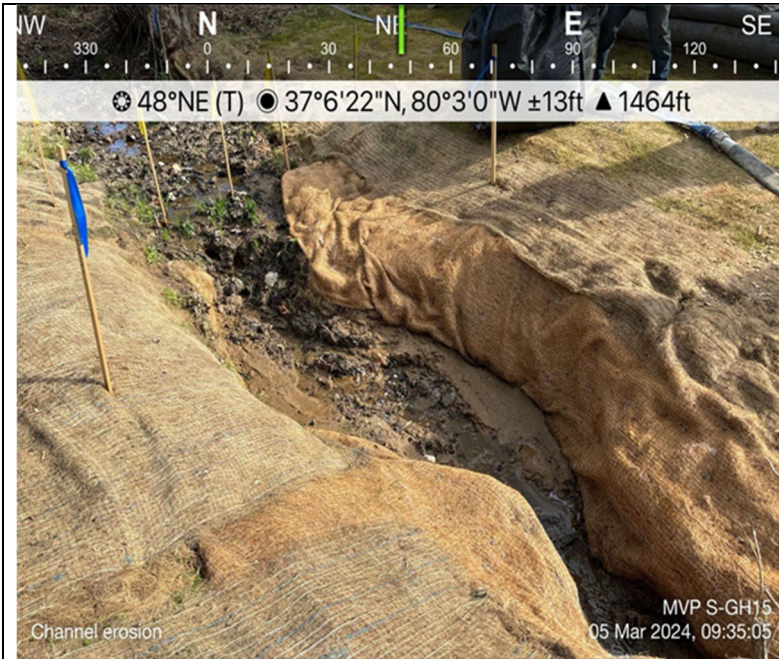


**Photo Description:** Conditions of the downstream area outside the ROW during post-construction assessment.

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## Optional Additional Photos



**Photo Description:** Channel erosion in the stream bed that has worsened over time.



**Photo Description:** Both banks were graded to a more gradual slope and compacted.



**Photo Description:** The stream bed and its banks were stabilized with biodegradable jute.



**Photo Description:** Native stream bed rock from S-D11 crossing was placed in the stream bed to enhance stabilization.