# Stream Biological Conditions EA Report

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| **Project Name** | H-600 Pipeline Spread D | **AFE** | 124300132 | **Spread** | H-600 Pipeline Spread D |
| **Contractor** | Precision | | | **Report #** | 443 |
| **Environmental Auditor** | Kyle Gillow | | | **Date/Time** | 12/19/2023 10:47 AM |

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|---|---|---|---|---|---|
| **Stream ID** | S-H99 | **Crossing Start Date** | 12/19/2023 | **Crossing Completion Date** | 12/21/2023 |
| **Milepost** | 115.99 | **Pre-Con Assessment Date** | 12/14/2023 | **Post-Con Assessment Date** | 12/21/2023 |
| **Station** | 6124+16 | **Bankfull Width (ft.)** | 4.0 | **Riffle:Pool Complexes Present?** | No |
| **State** | WV | **Stream Classification** | Perennial | | |
| **County** | Nicholas | **303(d) Impairment Listing** | No | | |

| | Resource Post-Crossing Conditions | |
|---|---|---|
| 1 | Were all applicable resource specific crossing conditions satisfied? | N/A |
| | Time of Year Restrictions (TOYR)? N/A Mussel Relocation? N/A | |
| 2 | This question is not applicable in WV. | |
| 3 | Which crossing methods were utilized during the stream crossing? (If so select one or more)<br>Dam & Pump X Flume X Cofferdam Conventional Bore Horizontal Directional Drill (HDD) Bore | |
| 4 | Was the top 1-foot (12-inches) of streambed substrate segregated and stockpiled separate from trench spoils? | Yes |
| 5 | Was excess material not needed for backfill removed and disposed of in an upland area? | Yes |
| 6 | Was the top 12-inches of backfill made with clean native stream substrate? | Yes |
| 7 | Was the pre-construction survey data utilized during restoration in attempt to re-establish pre-construction contours? | Yes |
| 8 | Were any field modifications to the stream implemented by project or regulatory personnel to address potential drainage or bank restoration limitations? | No |
| 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? | Yes |
| 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? | Yes |
| 11 | Was the time of disturbance minimized by conducting resource work continuously to completion? | Yes |
| 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? | Yes |
| 13 | Are bareroot saplings required and/or scheduled to be planted for the dormant season (10/1 - 4/30)? | N/A |
| 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. | No |

| | 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-Sub-optimal (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 | 1 | 1 |
| 17 | **Riparian Buffer Zone within ROW and ≤50 ft. from Stream Top-of-Bank: Rating:** 1-Optimal (60-100% heavy vegetative cover), 2-Sub-optimal (30-60% mixed vegetated coverage), 3-Marginal (<30% vegetative coverage), 4-Poor (Mowed/maintained area or farmland, impervious area, sparsely vegetated coverage, etc.) | 1 | 4 |

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| | Biological Conditions Continued | Pre-Con | Post-Con |
|---|---|---|---|
| 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, Varied combination of water velocities, 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) | 1 | 2 |
| 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 | 2 |

## Additional Notes

12/19/23 – Prior to any ground disturbance, a dam and pump around conveyance system were installed using a 2” submersible pump due to the low flow volume. The top 12” of stream substrate was placed into super sacks and stockpiled in an upland area during construction. Once trenching was completed, the trench was lined with interval spaced sandbags for the pipe to rest on. After the pipe that extended from the coming in side (CIS) loose end to 50’ past the stream channel on the going away side (GAS) was lowered in, it was observed that the CIS end section of pipe would need to be cut out and re-engineered to make the tie in weld.

12/20/23 – After the CIS section of pipe was cut out, re-engineered, and lowered back into the ditch, welding operations began on the section closest to the stream on the CIS of the stream. Once the first weld was completed and in the process of making the tie in weld on the CIS loose end, trench breakers were installed on the CIS and GAS of the stream. Padding of the pipe and backfilling of the trench were completed to approximately 25’ on either side of the stream channel by the end of the day.

12/21/23 - The top 12” of soil for the 10’ buffer zones, stream banks, and stream channel were restored and verified by survey to pre-construction specifications. The proper seed mix and curlex were applied to the disturbed areas along the stream banks with silt fence at the 10’ buffer zones on the CIS and GAS of the stream. The pump around conveyance system was removed and the streams natural flow was re-established. The stream channel and banks were secured out to the 25’ buffer area, and the 50’ buffer zones will be completed after the Christmas break.

In accordance with the Mountain Valley Pipeline Comprehensive Stream and Wetland Monitoring, Restoration and Mitigation Framework, 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.

| Name | Signature | Company | Date |
|---|---|---|---|
| Kyle Gillow |  | SWCA | 12/21/2023 |

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## Required Photos


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|---|---|
| **GPS Location** | See caption in photo. |
| **Description** | Downstream view of permitted impact area during pre-construction assessment. |


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|---|---|
| **GPS Location** | See caption in photo. |
| **Description** | Downstream view of unimpacted area during pre-construction assessment. |


| | |
|---|---|
| **GPS Location** | See caption in photo. |
| **Description** | Downstream view of permitted impact area during post-construction assessment. |


| | |
|---|---|
| **GPS Location** | See caption in photo. |
| **Description** | Downstream view of unimpacted area during post-construction assessment. |


| | |
|---|---|
| **GPS Location** | See caption in photo. |
| **Description** | Crew removing the top 12” of stream substrate. |


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|---|---|
| **GPS Location** | See caption in photo. |
| **Description** | Crew bagging the top 12” of stream substrate to be stored in the upland during construction. |

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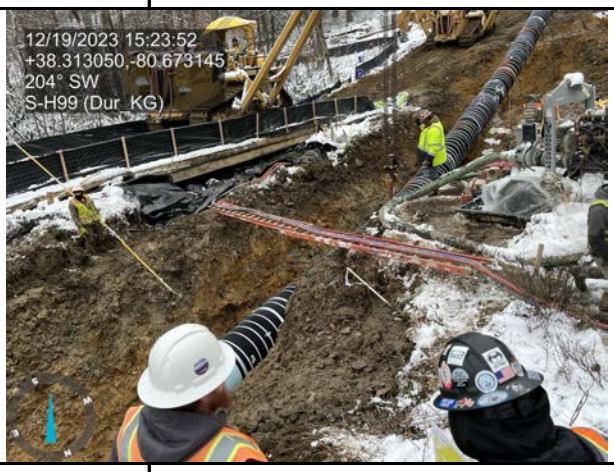
## Optional Photos


| GPS Location | See caption in photo. |
|---|---|
| Description | Crew trenching through feature S-H99. |


| GPS Location | See caption in photo. |
|---|---|
| Description | Crew continuing to dig trench for the stream section. |




| GPS Location | See caption in photo. |
|---|---|
| Description | Lowering in stream section of pipe. |


| GPS Location | See caption in photo. |
|---|---|
| Description | Padding and backfilling feature. |


| GPS Location | See caption in photo. |
|---|---|
| Description | Crew returning the top 12” of stream substrate back through the feature. |


| GPS Location | See caption in photo. |
|---|---|
| Description | Environmental crew re-establishing the 10’ buffer zones. |