



Stream Biological Conditions EA Report


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|------------------------------|-------------------------|----------------------------------|---------------------|---------------------------------------|-------------------------|
| Project Name | H-600 Pipeline Spread C | AFE | 124300131 | Spread | H-600 Pipeline Spread C |
| Contractor | Precision | Report # | 474 | | |
| Environmental Auditor | Jeffrey Arbogast | Date/Time | 12/29/2023 12:36 PM | | |
| Stream ID | S-B42 | Crossing Start Date | 12/29/2023 | Crossing Completion Date | 1/2/2024 |
| Milepost | 97.87 | Pre-Con Assessment Date | 12/18/2023 | Post-Con Assessment Date | 1/3/2024 |
| Station | 5167+59 | Bankfull Width (ft.) | 2.0 | Riffle:Pool Complexes Present? | No |
| State | WV | Stream Classification | Ephemeral | | |
| County | Webster | 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)? <u> N/A </u> Mussel Relocation? <u> N/A </u> | |
| 2 | This question is not applicable in WV. | |
| 3 | Which crossing methods were utilized during the stream crossing? (If so select one or more) Dam & Pump Flume <input checked="" type="checkbox"/> 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? | N/A |
| 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? | See Below |
| 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 | 2 |
| 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 | 3 |

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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 | 1 | |
| Additional Notes | | | | | | |
| <p>There was no flow in S-B42 so a dam and temporary flume was used for this crossing. A ditch dewatering system was set up and was used as needed throughout the stream crossing.</p> <p>Stream S-B42 is in close proximity to multiple other resource crossings. The overlapping buffer areas that intertwine the stream channels and wetland boundaries caused traditional trench breaker placement and the immediate restoration of the buffer zone to be impractical.</p> <p>Expanded notes for question 9: Bentonite trench breakers were built at 12' from the coming in side (CIS) and at 64' from the going away side (GAS) ordinary high water marks. The onsite civil survey crew verified the trench breaker locations.</p> <p>Expanded notes for question 17: The disturbed portion of the 50' riparian zones were restored to pre-construction elevations, seeded, and protected with erosion control devices. The GAS buffer will be restored after the next resource crossing is completed.</p> <p>12/29/2023: Topsoil from the 10' stream buffer zone was stripped and segregated on plastic sheeting in an upland area. Afterward the stream substrate was placed in super sacks and stored in an upland area. Native stream subsoil was separated so it could be used as backfill material. Excavation of the ditch was extended through to the last feature in the area that is to be crossed (S-B45).</p> <p>12/30/2023: With ditching completed, the next section of pipe was lowered in and welded in place.</p> <p>12/31/2023: The trench was backfilled from CIS of S-B35 through to the GAS of S-B39B. The subsoil was brought back to pre-construction elevation in preparation to restore multiple resources after the New Year holiday break.</p> <p>1/1/2024: Holiday break.</p> <p>1/2/2024: The stream substrate was replaced and brought back to pre-construction elevation. The stream banks were reconstructed through the 10' buffer, and all contours, elevations, and other significant points were verified by civil survey. The stream banks were properly seeded prior to installing erosion control blankets, straw mulch, and silt fence. The dam and pump around conveyance system was removed and natural flow was re-established.</p> | | | | | | |
| <p>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.</p> | | | | | | |
| Name | | Signature | | Company | | |
| Jeffrey Arbogast | |  | | SWCA | | |
| | | | | Date | | |
| | | | | 1/3/2024 | | |

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Required Photos

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|  | |  | |
| GPS Location | See caption in photo | GPS Location | See caption in photo |
| Description | Downstream view of permitted impact area during pre-construction assessment. | Description | Downstream view of unimpacted area during pre-construction assessment. S-B42 enters S-B37 under timber mat bridge prior to leaving LOD as S-B37. |
|  | |  | |
| GPS Location | See caption in photo | GPS Location | See caption in photo |
| Description | Downstream view of permitted impact area during post-construction assessment. | Description | Downstream view of unimpacted area during post-construction assessment. S-B42 enters S-B37 under timber mat bridge prior to leaving LOD as S-B37. |
|  | |  | |
| GPS Location | See caption in photo | GPS Location | See caption in photo |
| Description | Standing on the CIS facing the GAS pre-construction. | Description | Standing on the CIS facing the GAS post-construction. |

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Optional Photos

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| GPS Location | See caption in photo | GPS Location | See caption in photo |
| Description | Removing stream substrate and placing it into super sacks. | Description | 10' stream buffer material being removed and hauled to a upland area. |
|  | |  | |
| GPS Location | See caption in photo | GPS Location | See caption in photo |
| Description | Stream subsoil being removed and hauled to an upland area. | Description | Both CIS and GAS bentonite trench breakers. |
|  | |  | |
| GPS Location | See caption in photo | GPS Location | See caption in photo |
| Description | Survey checking stream subsoil elevation. | Description | Stream substrate being spread within the channel. |