# Stream Biological Conditions EA Report

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| **Project Name** | H-600 Pipeline Spread F | **AFE** | 124300135 | **Spread** | H-600 Pipeline Spread F |
| **Contractor** | Price Gregory | | | **Report #** | 476 |
| **Environmental Auditor** | Charles Haden | | | **Date/Time** | 1/2/2024 11:10 AM |

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|---|---|---|---|---|---|
| **Stream ID** | S-E40 | **Crossing Start Date** | 1/3/2024 | **Crossing Completion Date** | 1/15/2024 |
| **Milepost** | 192.20 | **Pre-Con Assessment Date** | 1/2/2024 | **Post-Con Assessment Date** | 1/15/2024 |
| **Station** | 10148+20 | **Bankfull Width (ft.)** | 11.5 | **Riffle:Pool Complexes Present?** | No |
| **State** | WV | **Stream Classification** | Perennial | | |
| **County** | Monroe | **303(d) Impairment Listing** | Fecal, Biological, Iron | | |

| | 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 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? | See Below |
| 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 | Cobble (2-10") | Cobble (2-10") |
| 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 | 2 | 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.) | 4 | 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 | 1 |
| 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

Pre-Construction Notes
Pre-Construction Assessment- 1/2/2024
15. Predominant substrate is cobble/gravel with some sand and fine gravel. Cobble is slightly embedded in finer sediments.
16. Overall banks are stable within the LOD; however, there is a ~15' section on left descending bank with near vertical bank angles and limited vegetative coverage.
17. Riparian zone on both sides of resource is mowed/maintained agricultural field.
The confluence with S-E41 occurs on the ROW near the pipeline centerline. Timber mat bridge in place.

1/3/2024 - Installed pump-around system including the placement of road plates and sanbags both upstream and downstream. Top 12" of substrate excavated (Photo 1) and stored in an upland area on coming-in side (northern). Checked stream substrate and riparian topsoil piles were segregated and stored properly. Rebuilt upstream dam due to seepage. Drilled and prepped for blasting through aquatic resource and adjacent riparian buffers.
1/4/2024 - Addressed seepage around US dam. Pump-around system in use. Continued to drill (Photo 2) and prepare for blasting. Placed blasting mats. Stopped pumps. Blasted. Removed blasting mats and restarted pumps.
1/5/2024 - Frosty conditions. Pump-around system in use. Excavated trench (Photo 3). Placed sandbags into trench for padding (Photo 4). Lowered pipe into trench in aquatic resource area (Photo 5). Made cut. Aligned pipe and began weld.
1/6/2024 - Rain out. Pump-around system in use. Checked and photographed aquatic resource.
1/7/2024 - Flooding overnight. Pump-around system in use. Trench full of water. Actively pumping water from trench. Repaired ECDs and other structures. Added pumps. Welded outside of aquatic resource area. X-rayed.
1/8/2024 - Continued site cleanup from flooding event. Pump-around system in use. Lined up pipe for welding, made cut and started weld. X-rayed. Prepped site for second storm event.
1/9/2024 - Rain out. Pump-around system in use.
1/10/2024 - Site flooded during storm. Water pumped from trench. Pump-around system in use. General site clean-up. No work in aquatic resource or in trench outside of aquatic resource area.
1/11/2024 - Water actively being pumped from trench. Pump-around system in use. River weights removed. Sandblasted, jeeped, recoated, and added rock guard. Survey onsite.
1/12/2024 - Water actively being pumped from trench. Pump-around system in use. Rain/Hail. Survey onsite checking elevations. River weights added to trench. Site prepped for storm.
1/13/2024 - Pump-around system in use. Constructed trench breakers (Photo 6). Backfilled trench with padding dirt. Backfilled trench in aquatic resource area with subsoil.
1/14/2024 - Finished backfilling trench in aquatic resource area. Contoured subsoil (Photo 7). Added topsoil to buffers. Survey onsite, shot elevations (Photo 8). Removed plates. Seeded*. Added curlex to a portion of buffer.
1/15/2024 - Completed adding curlex to 10-foot buffer and removed sandbags from backs of channel as well as other equipment and hoses.

Post Construction Notes
*10. Permanent seed was applied after flow was established to the impact area of the channel. This was done out of sequence due to poor weather conditions and concerns with forecasted weather.
16., 17. Crossing and riparian areas have been recently restored. These areas will be monitored until 80% vegetative cover has been achieved and areas that do not have 80% vegetative cover within 30 days will be reseeded.
19. Does not include timber mats that remain in place for travel lane.

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 |
|---|---|---|---|
| Charles Haden | Charles Haden | Potesta | 1/15/2024 |

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**Required Photos**


| GPS Location | See Photo |
|---|---|
| Description | Downstream view of permitted impact area during pre-construction assessment. |

| GPS Location | See Photo |
|---|---|
| Description | Downstream view of unimpacted area during pre-construction assessment. |


| GPS Location | See Photo |
|---|---|
| Description | Downstream view of permitted impact area during post-construction assessment. |

| GPS Location | See Photo |
|---|---|
| Description | Downstream view of unimpacted area during post-construction assessment. |

| GPS Location | See Photo |
|---|---|
| Description | Photo 1: Excavation of top 12 inches of substrate. |

| GPS Location | See Photo |
|---|---|
| Description | Photo 2: Continuing to drill to prepare for blasting in aquatic resource area. |

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## Optional Photos


| GPS Location | See Photo |
|---|---|
| Description | Photo 3: Excavating trench in aquatic resource area. |


| GPS Location | See Photo |
|---|---|
| Description | Photo 4: Placed sandbags into trench in aquatic resource area. |


| GPS Location | See Photo |
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| Description | Photo 5: Bringing in pipe to lower into trench in aquatic resource area. |


| GPS Location | See Photo |
|---|---|
| Description | Photo 6: Construction of trench breakers. |


| GPS Location | See Photo |
|---|---|
| Description | Photo 7: Contouring subsoil before adding topsoil and substrate. |


| GPS Location | See Photo |
|---|---|
| Description | Photo 8: Survey checking elevations. |