Stream Biological Conditions EA Report

Project Name	H-600 Pipeline Spread E	**AFE**	124300134	**Spread**	H-600 Pipeline Spread E
Contractor	Price Gregory			**Report #**	246
Environmental Auditor	Jessica Yeager			**Date/Time**	9/20/2023 9:10 AM

Stream ID	S-I26	**Crossing Start Date**	9/26/2023	**Crossing Completion Date**	10/6/2023
Milepost	141.26	**Pre-Con Assessment Date**	9/20/2023	**Post-Con Assessment Date**	10/6/2023
Station	7458+33	**Bankfull Width (ft.)**	5.1	**Riffle:Pool Complexes Present?**	No
State	WV	**Stream Classification**	Intermittent		
County	Greenbrier	**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) Dam & Pump 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?	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?	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	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	4
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	3

Additional Notes

Pre-Construction Notes
Pre-Construction Meeting (9/18/2023 @ 1300)
Pre-Construction Completed (9/20/2023)
Bank full width measured at OHWM takes at the centerline. Riparian corridor saturated on RDB.
15. Substrate type not evenly distributed throughout reach - predominant substrate likely a small particulate (sand) with mix of rock in the cobble range.

Day 1(9/26/2023)
Upstream dam put in place for flume. Stream substrate removed (Photo 1) and placed in upland area (Photo 2). Site prepared for blasting.

Day 2 (9/27/2023)
Blasting in resource area (Photo 3). Trenching through aquatic resource and adjacent riparian area (Photo 4).

Day 3 and Day 4 (9/28/2023 and 9/29/2023)
Activities on-going outside of OHWM including trenching, hammering, placement of pipe upgradient of resource area, coating, welding, and x-ray.

Day 5 (9/30/2023)
Began placing fill in some portions of trench outside aquatic resource. Pipe put in trench at aquatic resource crossing (Photo 5). Welding and x-ray completed on one end of the pipe.

Day 6 and Day 7 (10/2/2023 and 10/3/2023)
Work in trench both inside and outside aquatic resource area included: placement of sandbags and dirt pillows, fitting pipe, cutting and welding, x-ray.

Day 8 and Day 9 (10/4/2023 and 10/5/2023)
X-ray completed (10/4/2023). Installed dirt pillows, trench breakers and backfilling in aquatic resource area (Photo 6) and in areas upgradient of resource. Restoration delayed due to survey availability.

Day 10 (10/6/2023)
No flow upgradient of aquatic resource. Buffer restored with segregated soil. Channel prepared and stream substrate was restored. Survey checked elevations. Contouring was completed using hand tools. Curlex and seeding was completed in buffer outside of OHWM. Resource fenced to reduce foot traffic while construction ongoing.

Post Construction Notes
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 no 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
Jessica Yeager	Jessica L Yeager	Potesta	10/6/2023

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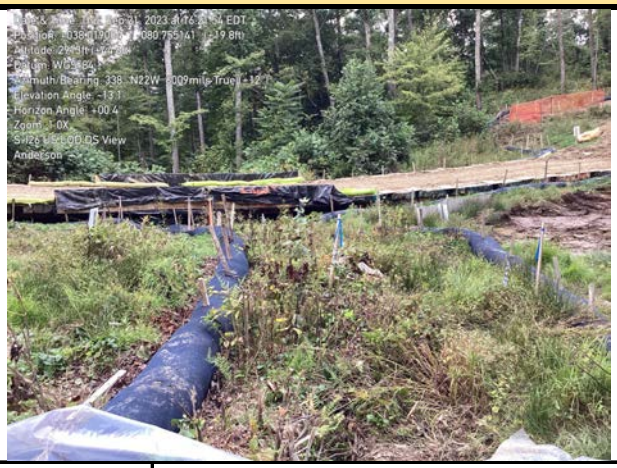
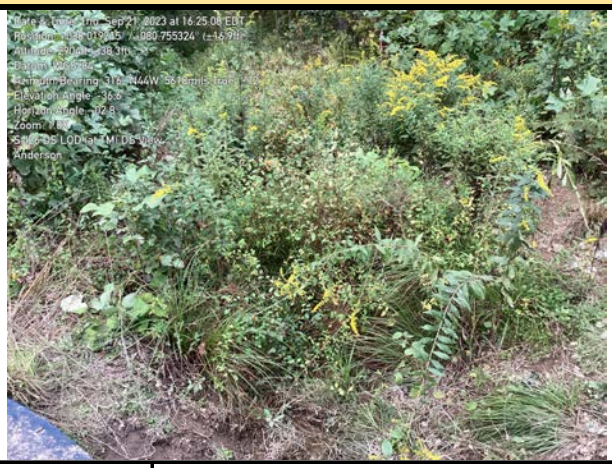
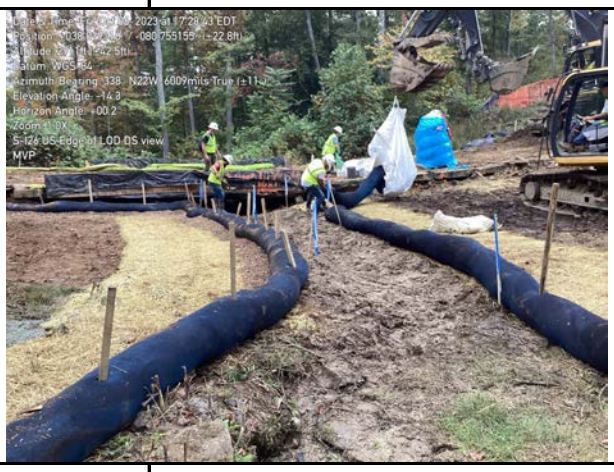
Required Photos



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

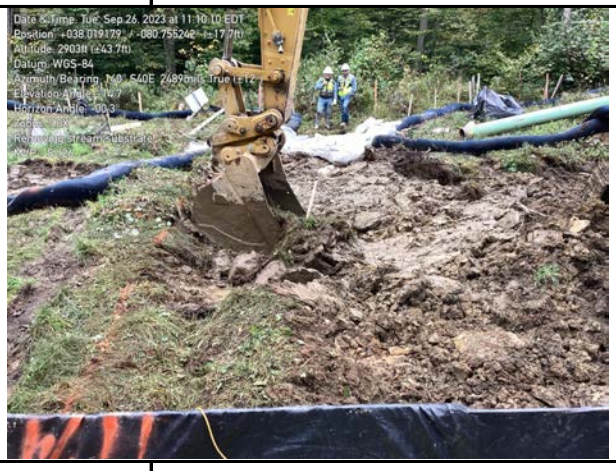


GPS Location	See Photo
Description	Downstream view of unimpacted area during pre-construction assessment.

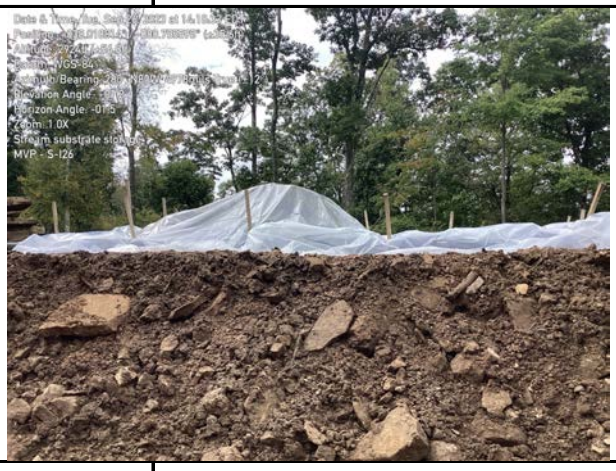


GPS Location	See Photo
Description	Downstream view of permitted impact area during post-construction assessment.

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



GPS Location	See Photo
Description	Photo 1: Removal of stream substrate.



GPS Location	See Photo
Description	Photo 2: Stream substrate segregated and stored in upland area.

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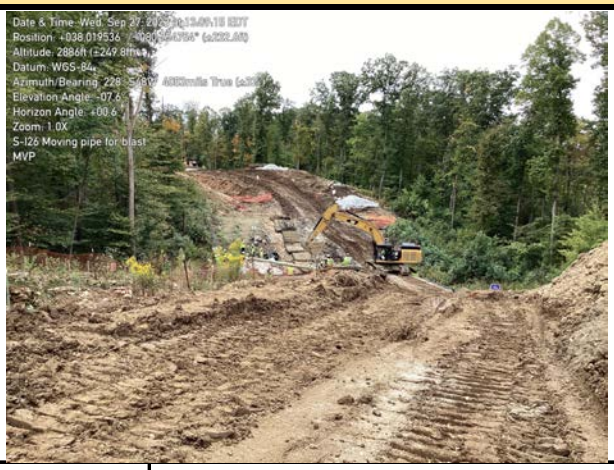
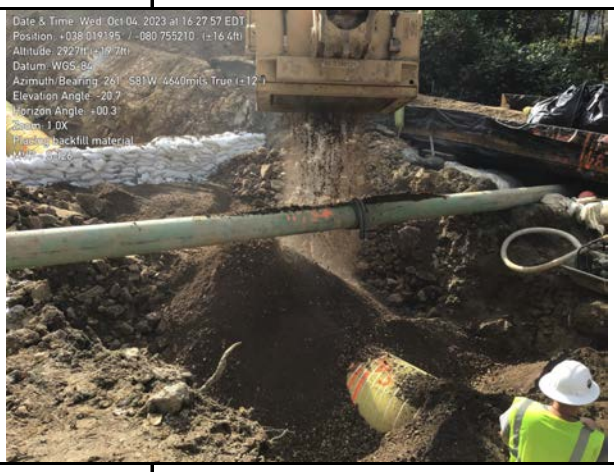
Optional Photos



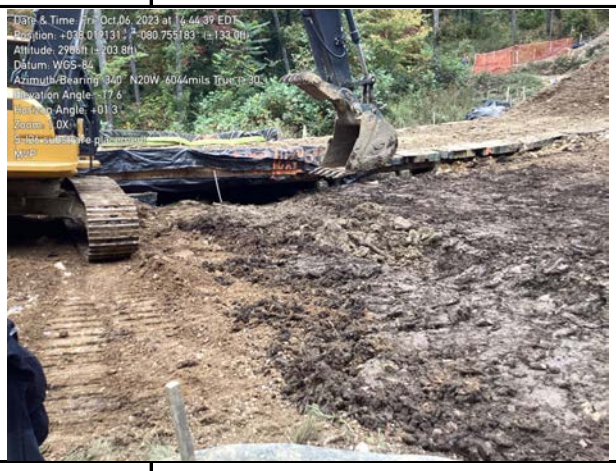
GPS Location	See Photo
Description	Photo 3: Preparing to blast at aquatic resource crossing.

GPS Location	See Photo
Description	Photo 4: Trenching through aquatic resource.

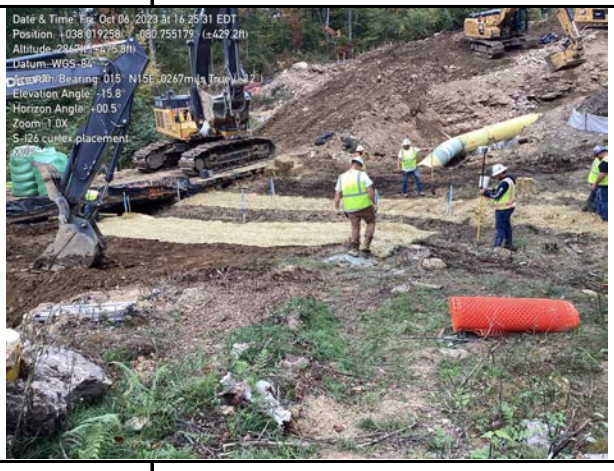
GPS Location	See Photo
Description	Photo 5: Placement of pipe in aquatic resource.



GPS Location	See Photo
Description	Photo 6: Installing trench breaks and backfilling trench in aquatic resource area.



GPS Location	See Photo
Description	Photo 7: Restoring riparian and stream substrate.



GPS Location	See Photo
Description	Photo 8: Stream survey and placement of Curlex outside of OHWM.