Stream Biological Conditions EA Report

Project Name	H-600 Pipeline Spread D	**AFE**	124300132	**Spread**	H-600 Pipeline Spread D
Contractor	Precision			**Report #**	235
Environmental Auditor	Todd Grant			**Date/Time**	9/11/2023 9:07 PM

Stream ID	S-B29	**Crossing Start Date**	9/11/2023	**Crossing Completion Date**	9/22/2023
Milepost	107.20	**Pre-Con Assessment Date**	9/8/2023	**Post-Con Assessment Date**	9/23/2023
Station	5660+38	**Bankfull Width (ft.)**	7.0	**Riffle:Pool Complexes Present?**	No
State	WV	**Stream Classification**	Perennial		
County	Webster	**303(d) Impairment Listing**	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) 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	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	2

Additional Notes

9/11/2023- The contractor commenced the crossing of stream S-B29. The stream was impacted during blasting activities of the upland portion of the ROW on the coming in side (CIS) of the stream buffer zone. The contractor immediately had everyone on-site set up a dam and pump at the upstream LOD to minimize sediment laden water from flowing downstream. A second sandbag dam was built under the equipment bridge isolating the impacted portion of the stream. The contractor then installed a pump to drain the impacted area so that the foreign material could be removed. The water in the impacted section was pumped to the dewatering structure. The contractor crew made every effort to remove all foreign material from the streambed and embankment by hand. The top 12" of topsoil was removed from the streambanks and the earth covered culvert over the ditch line. The top 12" of streambed substrate, along with the substrate under the culvert was segregated in super sacks and placed in an upland area. A flume pipe was installed as necessary so the dam and pump could be removed at the end of each workday.

9/12/2023- The contractor perforated the ditch line for blasting activities from stream S-B29 through wetland W-B28, across the county road, and up the going away side (GAS) slope. West Virginia DEP visited the area to inspect the cleanup of the previous day's impact to stream S-B29.

9/13/2023- Blasting activities were completed in stream S-B29 and raised material was removed to re-install flume.

9/14/2023- The contractor commenced with ditching in the adjacent wetland W-B28 and spent most of the day working on a system to control ground water entering the ditch.

9/15/2023- The contractor completed ditch excavation from wetland W-B28 through stream S-B29 to the loose pipe on CIS.

9/16/2023- The contractor lowered in the pipe section under stream S-B29 and completed the weld on the CIS.

9/18/2023- The flume pipe for S-B29 remained in place and ditching through the adjacent wetland was completed.

9/19/2023- The contractor lowered in the pipe to complete the crossing from stream S-B29 across wetland W-B28 and completed welding.

9/20/2023- The contractor conducted welding, coating and cathodic protection activities on GAS of stream S-B29.

9/21/2023- The contractor began backfilling the adjacent wetland and prepared materials to complete the crossing of stream S-B29.

9/22/2023- The trench breaker at Sta. #5660+23 was installed, and the pipe was padded and backfilled. Stream bank contours and the stream bed elevations were verified by the survey crew and preconstruction photos. The top 12 inches of stream bed substrate was replaced. A new culvert was placed in the stream and the stream channel was temporarily lined with plastic to catch and prevent mixing of stream bank topsoil with stream bed substrate during bank restoration. Numbers 17, and 18 were rated poor due to the lack of vegetation in the disturbed permitted impact area following the completion of the crossing and restoration efforts. Number 19 was rated minor due to embankments around culvert being reconstructed during restoration. The S-B29 stream banks and stream bed substrate have been properly stabilized and the disturbed area seeded with the appropriate permanent seed mix in accordance with Appendix B: Restoration Work Plan of the Mountain Valley Pipeline Comprehensive Stream and Wetland Monitoring, Restoration, and Mitigation Framework.

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
Todd Grant	Todd R. Grant	SWCA	9/23/2023

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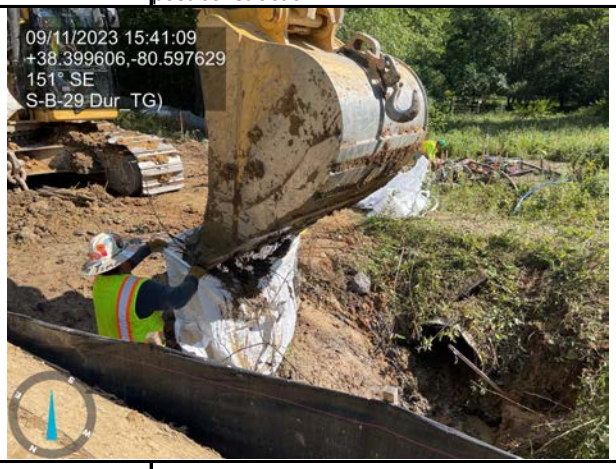
Required Photos

GPS Location	See photo above
Description	Downstream view of permitted impact area during pre-construction assessment. Looking downstream form upstream LOD pre-construction.

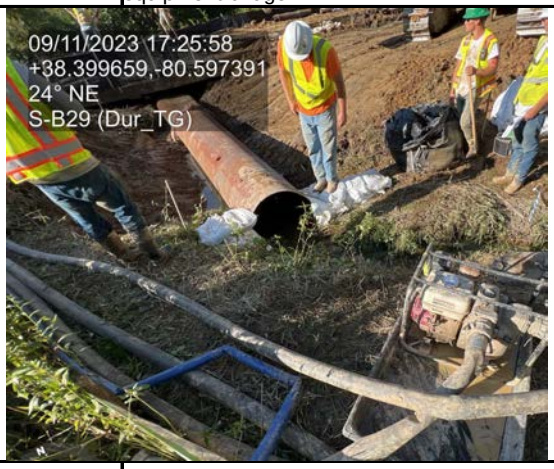
GPS Location	See photo above
Description	Downstream view of unimpacted area during pre-construction assessment. View of downstream flow from LOD at center of equipment bridge.

GPS Location	See photo above
Description	Downstream view of permitted impact area during post-construction assessment. Looking downstream form upstream LOD post-construction..

GPS Location	See photo above
Description	Downstream view of unimpacted area during post-construction assessment. View of downstream flow from LOD at center of equipment bridge.



GPS Location	See photo above
Description	View of contractor segregating streambed substrate into super sacks.



GPS Location	See photo above
Description	View of flume pipe installed in S-B29 after removal of dam and pump.

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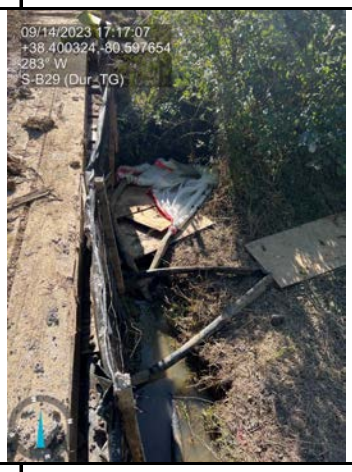
Optional Photos

GPS Location	See photo above
Description	View of the ditch under the stream S-B29 flume pipe.

GPS Location	See photo above
Description	View of the pipe extending under the flume pipe for stream S-B29.

GPS Location	See photo above
Description	View of dam and pump equipment and flume pipe being re-installed following blasting activities through stream S-B29.



GPS Location	See photo above
Description	View of the pump around discharge at downstream LOD.

GPS Location	See photo above
Description	View of survey activities during stream bank restoration.

GPS Location	See photo above
Description	View of contractor environmental crew stabilizing stream banks and culvert.