Stream Biological Conditions EA Report

Project Name	H-600 Pipeline Spread D	**AFE**	124300132	**Spread**	H-600 Pipeline Spread D
Contractor	Precision			**Report #**	314
Environmental Auditor	Scott Wessel			**Date/Time**	10/23/2023 8:06 PM

Stream ID	S-L38	**Crossing Start Date**	10/24/2023	**Crossing Completion Date**	10/29/2023
Milepost	124.73	**Pre-Con Assessment Date**	10/23/2023	**Post-Con Assessment Date**	10/29/2023
Station	6585+84	**Bankfull Width (ft.)**	3.0	**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?	See Below
	Time of Year Restrictions (TOYR)? Yes 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	Bedrock, Boulder (>10")	Bedrock, Boulder (>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	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	3
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

Expanded Notes for question 1: Stream S-L38 has a time of year restriction (TOYR) prohibiting construction between Sept. 15th to March 31st. A waiver has been obtained from the appropriate agencies to allow construction within this window.

10/24/23 – A flume and a pump/dam conveyance system were set up and used throughout the crossing in an as needed basis. The top 12" of stream substrate was placed into labeled super sacks while the topsoil from the stream banks were removed and segregated in an upland area on the going away side (GAS) of the crossing. After blasting activities were conducted in the resource area and buffer zones on the coming in side (CIS) and GAS of the crossing, trenching began.

10/25/23 – Trenching operations continued with the use of a rock hammer and by the end of the day trenching was completed.

10/26/23 - Pipe preparations on the GAS of S-L38 continued with welding, x-ray, and rock shield installation activities. The ditch water was pumped to a dewatering structure on the GAS of the crossing prior to the ditch being lined with sandbags. Dewatering of the ditch continued throughout the crossing on an as needed basis.

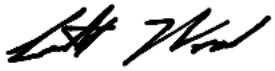
10/27/23 – Once the section of pipe for the stream crossing was lowered in, bentonite trench breakers were installed within 25 feet of the high water mark on both the CIS and GAS of S-L38 prior to padding and backfilling beginning.

10/28/23 – Once the backfilling of the pipe section for stream S-L38 was completed, the stream banks and buffer zones were restored using previously segregated topsoil. Erosion control blankets were installed along with proper seed mixture for the 10ft. buffer zone, and super silt fence was installed outside the buffer zone area on the CIS and GAS. The streams top 12 inches of substrate material will be added tomorrow.

10/29/23 – Survey verified that the top 12" of substrate for S-L38 between the high water marks of the stream channel were restored to pre-construction elevations and contours. The pump and dam was removed, and flow was restored to resource.

Numbers 17 and 18 were rated "4" and "3" due to lack of vegetation in the impact area following the completion of crossing and restoration efforts. The disturbed area for stream S-L38 has been properly stabilized and the disturbed area has been 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
Scott Wessel		SWCA	10/29/2023

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Required Photos

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

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

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

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

GPS Location	See GPS in above photo.
Description	Pump and dam being installed for stream S-L38.

GPS Location	See GPS in above photo.
Description	Large boulders and substrate material being segregated on the GAS of stream.

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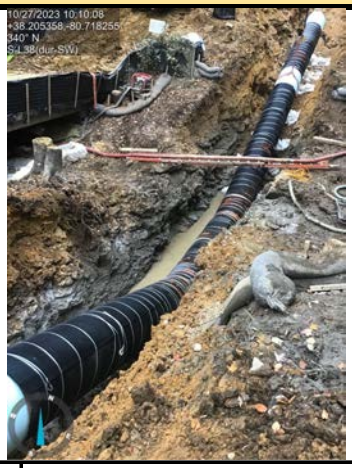
Optional Photos

GPS Location	See GPS in above photo.
Description	Trench being lined with sandbags and dewatering operations.



GPS Location	See GPS in above photo.
Description	Pipe section being installed. Ditch water was being pumped out utilizing dewatering structure.

GPS Location	See GS in above photo.
Description	Pipe being padded on the CIS after breakers were installed.

GPS Location	See GPS in above photo.
Description	Breaker being installed on the CIS of resource.

GPS Location	See GPS in above photo.
Description	Erosion control blanket and super silt fence installed on the CIS of S-L38.

GPS Location	See GPS in above photo.
Description	Pump and dam being removed once S-L38 was completed.