Stream Biological Conditions EA Report

Project Name	H-600 Pipeline Spread C	**AFE**	124300131	**Spread**	H-600 Pipeline Spread C
Contractor	Precision			**Report #**	206
Environmental Auditor	Jeffrey Arbogast			**Date/Time**	8/21/2023 1:48 PM

Stream ID	S-L60	**Crossing Start Date**	8/15/2023	**Crossing Completion Date**	8/23/2023
Milepost	68.83	**Pre-Con Assessment Date**	8/12/2023	**Post-Con Assessment Date**	8/26/2023
Station	3634+29	**Bankfull Width (ft.)**	9.6	**Riffle:Pool Complexes Present?**	No
State	WV	**Stream Classification**	Perennial		
County	Braxton	**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 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?	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	Cobble (2-10")	Gravel (0.1-2")
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	2

Additional Notes

Stream S-L60's location is listed on the alignment sheet as being from station no. 3634+29 to 3634+60.

Dry conditions caused S-L60 to stop flowing from 8/20/2023 to 8/24/23. A rain event on 8/25/23 re-established flows of the stream and post construction photos were taken on 8/26/23.

Expanded notes for question 9. A trench breaker was installed on the coming in side of the S-L60 crossing at a distance of 10' from the top of bank as per survey. The going away side breaker will not be constructed until after pipe tie in with adjacent stream (S-LL1) crossing.

Expanded notes for question 17. The 50-foot riparian buffer zone on the coming in side was stabilized with seed and mulch on 08/24/2023. The 50-foot buffer zone on the going away sided will be completed after pipe tie in with adjacent stream (S-LL1) crossing.

8/15/2023: A dam and pump was set up so sheet piling could be installed through the stream and 10' buffer. Topsoil from the going away side of the 10' buffer zone was removed and stored in super sacks. A flume pipe was installed at the end of the day. Well points that were previously installed outside of the stream buffer were being pumped to a dewatering facility on a continuous basis. A crew is scheduled to monitor all pumping operations overnight.

8/16/2023: Well points were installed within stream buffers. The contractor started installing steel piling H beam bracing.

8/17/2023: The contractor finished installing well points and sheet piling bracing. Two new dewatering structures were built to handle additional water from well points. Well point pumping continued throughout the day as well as the flume pipe to channeling stream S-L60 across the trench.

8/18/2023: Well points dewatering of stream S-L60 continued throughout the day. Welding and coating crews began preparing the pipe for the crossing. The loose end of the pipe was excavated on going away side of stream S-LL1.

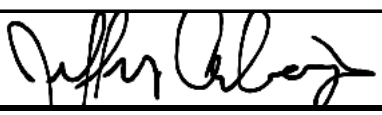
8/19/2023: The ditch was excavated up to the 10' buffer on both sides of stream crossing, the pumps and hoses for dewatering of the trench were setup. The coming in side topsoil from the 10' buffer was segregated and placed in super sacks.

8/21/2023: The top 12" of stream substrate was removed and segregated into super sacks. The subsoil was quickly and easily excavated for the trench line and shortly after the pipe was lowered in. Welds were made on coming in side of the crossing and X-ray made their shots by the end of the day.

8/22/2023: Coating crews finished up from the previous day and trench breaker was installed on coming in side of stream; 10' from top of bank. Weight bags were placed on the pipe and backfilling started.

8/23/2023: The contractor completed the backfill of the stream subsoil and removed the sheet piling, well points, and flume. As a precaution the pump around was re-established prior to replacing stream (S-L60) topsoil to the surveyor specifications. Stream elevation, width, and contour were confirmed via survey data and pre-construction photos. The 10' buffers were stabilized with seed, erosion control blankets and straw. Silt fence was placed 10 feet from top of banks.

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
Jeffrey Arbogast		SWCA	8/26/2023

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Required Photos

GPS Location	See caption in photo
Description	Downstream view of permitted impact area during pre-construction assessment. Pre-construction view looking downstream from upstream LOD.

GPS Location	See caption in photo
Description	Downstream view of unimpacted area during pre-construction assessment. Pre-construction view looking downstream from downstream LOD on top of bridge.

GPS Location	See caption in photo
Description	Downstream view of permitted impact area during post-construction assessment. Post-construction view looking downstream from up stream LOD.

GPS Location	See caption in photo
Description	Downstream view of unimpacted area during post-construction assessment. Post-construction view looking downstream from downstream LOD on top of bridge.

GPS Location	See caption in photo
Description	Pre-construction view from the coming in side of the stream crossing. Sheet piling has been installed up to the 10' buffer.

GPS Location	See caption in photo
Description	Pre-construction view from going away side of crossing.

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Optional Photos

GPS Location	See caption in photo
Description	Post-construction view from the coming in side of the stream crossing.

GPS Location	See caption in photo
Description	Post-construction view from going away side of crossing.

GPS Location	See caption in photo
Description	Stream with flume pipe, sheet piling and well points installed.

GPS Location	See caption in photo
Description	Stream substrate stored in super sacks.

GPS Location	See caption in photo
Description	Weight bags being installed on the pipe.

GPS Location	See caption in photo
Description	Stream substrate being placed back into the stream.