



# Stream Biological Conditions EA Report


<b>Project Name</b>	H-600 Pipeline Spread C	<b>AFE</b>	124300131	<b>Spread</b>	H-600 Pipeline Spread C
<b>Contractor</b>	Precision	<b>Report #</b>	472		
<b>Environmental Auditor</b>	Jeffrey Arbogast	<b>Date/Time</b>	12/29/2023 12:45 PM		
<b>Stream ID</b>	S-B45	<b>Crossing Start Date</b>	12/29/2023	<b>Crossing Completion Date</b>	1/5/2024
<b>Milepost</b>	97.90	<b>Pre-Con Assessment Date</b>	12/28/2023	<b>Post-Con Assessment Date</b>	1/6/2024
<b>Station</b>	5168+92	<b>Bankfull Width (ft.)</b>	3.0	<b>Riffle:Pool Complexes Present?</b>	No
<b>State</b>	WV	<b>Stream Classification</b>	Ephemeral		
<b>County</b>	Webster	<b>303(d) Impairment Listing</b>	No		

### Resource Post-Crossing Conditions

1	Were all applicable resource specific crossing conditions satisfied?	N/A
	Time of Year Restrictions (TOYR)? <u>  N/A  </u> Mussel Relocation? <u>  N/A  </u>	
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 <input checked="" type="checkbox"/> 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	<b>Predominant Substrate Type (select one):</b> Bedrock, Boulder (>10"), Cobble (2-10"), Gravel (0.1-2"), Sand (<0.1"), Mud/Silt/Clay	Mud/Silt/Clay	Mud/Silt/Clay
16	<b>Channel Conditions: Rating:</b> 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	<b>Riparian Buffer Zone within ROW and ≤50 ft. from Stream Top-of-Bank: Rating:</b> 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

<b>AFE</b>	124300131	<b>Date/Time</b>	12/29/2023 12:45 PM	<b>Report #</b>	472	
<b>Biological Conditions Continued</b>					<b>Pre-Con</b>	<b>Post-Con</b>
18	<b>Instream Habitat Conditions:</b> 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	<b>Channel Alterations:</b> 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	
<b>Additional Notes</b>						
<p>There was no flow in S-B45 so a dam and temporary flume was used for this crossing. A ditch dewatering system was set up and used on an as needed basis throughout the stream crossing.</p> <p>Stream S-B45 is in close proximity to multiple other resource crossings. The overlapping buffer areas that intertwine the stream channels and wetland boundaries caused traditional trench breaker placement and the immediate restoration of the buffer zone to be impractical.</p> <p>Expanded notes for question 9: Bentonite trench breakers were built at 69' from the coming in side (CIS) and at 5' from the going away side (GAS) ordinary high water marks. The onsite civil survey crew verified the trench breaker locations.</p> <p>Expanded notes for question 17: Due to the proximity to the timber mat travel lane the GAS 50' buffer will not be completed until after hydro testing and final restoration.</p> <p>12/29/2023: Topsoil from the 10' stream buffer zone was stripped and segregated on plastic sheeting in an upland area. Afterward the stream substrate was placed in super sacks and stored in an upland area.</p> <p>12/30/2023: Excavation of the ditch was completed through S-B45 and the native stream subsoil was removed and stored in an upland area for use as backfill. The next pipe section was lowered in and welded.</p> <p>12/31/2023: The trench was backfilled from CIS of S-B35 through to the GAS of S-B39B. The subsoil was brought back to pre-construction elevation in preparation to restore multiple resources after the New Year holiday break.</p> <p>1/1/2024: Holiday break.</p> <p>1/2/2024: Multiple adjacent resource crossings were completed (S-B35, S-B36, S-B37, S-B38 and W-B35).</p> <p>1/3/2024: The next two pipe sections were made up and the ditch was extended enough for them to be lowered in the next day.</p> <p>1/4/2024: The final two sections of pipe that extend through the last three stream crossings (S-B39B, S-B39A/B46 and S-B45) were lowered in and welded by the end of the day.</p> <p>1/5/2024: The ditch was backfilled using the native material removed during the excavation of the trench prior to restoring the streams substrate to the channel. The stream bank on the CIS was reconstructed through the 10' buffer, as well as on the GAS, with the exception of the portion next to the timber mat travel lane; due to it's close proximity. This area will be restored after testing and the removal of travel lane. All contours, elevations, and other significant points were verified by civil survey. The stream banks were properly seeded prior to installing erosion control blankets, straw mulch, and silt fence. The dam and flume was removed and natural flow was re-established.</p>						
<p>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.</p>						
<b>Name</b>		<b>Signature</b>		<b>Company</b>		
Jeffrey Arbogast				SWCA		
				<b>Date</b>		
				1/6/2024		

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**Required Photos**

 <p>12/28/2023 10:39:18 +38.493216, -80.560633 318° NW S-B45 (Pre-JA)</p>		 <p>12/28/2023 07:51:21 +38.493662, -80.560901 293° NW S-B39B (Pre-JA)</p>	
<b>GPS Location</b>	See Caption in Photo	<b>GPS Location</b>	See Caption in Photo
<b>Description</b>	Downstream view of permitted impact area during pre-construction assessment.	<b>Description</b>	Downstream view of unimpacted area during pre-construction assessment. S-B45 merges with S-B39B under the timber mat travel lane prior to leaving the LOD as S-B39B.
 <p>01/06/2024 08:59:20 +38.493262, -80.560576 323° NW S-B45 (Post-JA)</p>		 <p>01/06/2024 08:54:08 +38.493634, -80.560899 293° NW S-B39B (Post-JA)</p>	
<b>GPS Location</b>	See Caption in Photo	<b>GPS Location</b>	See Caption in Photo
<b>Description</b>	Downstream view of permitted impact area during post-construction assessment.	<b>Description</b>	Downstream view of unimpacted area during post-construction assessment. S-B45 merges with S-B39B under the timber mat travel lane prior to leaving the LOD as S-B39B.
 <p>12/29/2023 09:06:13 +38.493254, -80.560737 150° SE S-B45 (Dur-JA)</p>		 <p>12/29/2023 11:23:15 +38.493232, -80.560859 318° NW S-B45 (Dur-JA)</p>	
<b>GPS Location</b>	See Caption in Photo	<b>GPS Location</b>	See Caption in Photo
<b>Description</b>	Stream substrate being placed in super sacks.	<b>Description</b>	10' buffer topsoil being removed.

**Optional Photos**

			
<b>GPS Location</b>	See Caption in Photo	<b>GPS Location</b>	See Caption in Photo
<b>Description</b>	Subsoil being removed and hauled to an upland area.	<b>Description</b>	Lowering in.
			
<b>GPS Location</b>	See Caption in Photo	<b>GPS Location</b>	See Caption in Photo
<b>Description</b>	GAS trench breaker. Backfill has started.	<b>Description</b>	Survey checking subsoil elevation.
			
<b>GPS Location</b>	See Caption in Photo	<b>GPS Location</b>	See Caption in Photo
<b>Description</b>	Stream substrate being returned.	<b>Description</b>	Topsoil being spread on CIS buffer zone.