



Stream Biological Conditions EA Report


Project Name	H-600 Pipeline Spread C	AFE	124300131	Spread	H-600 Pipeline Spread C
Contractor	Precision	Report #	469		
Environmental Auditor	Jeffrey Arbogast	Date/Time	12/19/2023 7:49 AM		
Stream ID	S-B34	Crossing Start Date	12/19/2023	Crossing Completion Date	12/22/2023
Milepost	97.84	Pre-Con Assessment Date	12/18/2023	Post-Con Assessment Date	12/22/2023
Station	5166+20	Bankfull Width (ft.)	30.0	Riffle:Pool Complexes Present?	No
State	WV	Stream Classification	Perennial		
County	Webster	303(d) Impairment Listing	No		

Resource Post-Crossing Conditions

1	Were all applicable resource specific crossing conditions satisfied? Time of Year Restrictions (TOYR)? <u> N/A </u> Mussel Relocation? <u> N/A </u>	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 <input checked="" type="checkbox"/> Flume <input type="checkbox"/> Cofferdam <input type="checkbox"/> Conventional Bore <input type="checkbox"/> Horizontal Directional Drill (HDD) Bore <input type="checkbox"/>	
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")	Cobble (2-10")
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	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





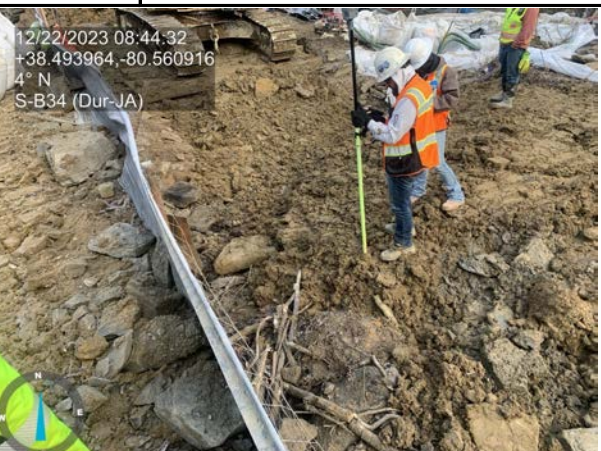
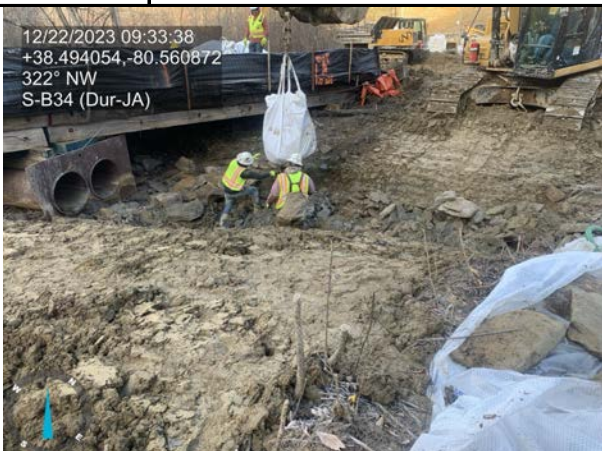
AFE	124300131	Date/Time	12/19/2023 7:49 AM	Report #	469	
Biological Conditions Continued					Pre-Con	Post-Con
18	Instream Habitat Conditions: Examples: Varied substrate sizes, varied combination of water velocities & depths, presence of woody/leafy debris, stable substrate with low amount of mobile particles, 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	1	
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						
<p>Stream S-B34 location is listed on the alignment sheet as being from station number 5166+20 to 5166+51.</p> <p>A dam and pump around was built prior to any disturbance within the 10' stream buffer. A ditch dewatering system was set up and was used as needed throughout the stream crossing.</p> <p>Expanded notes for question 9: The bentonite trench breakers were verified by survey to have been built at 4' and 3' from the high water mark on the coming in side (CIS) and going away side (GAS) of the stream, at station numbers 5166+16 and 5166+54, respectively.</p> <p>Expanded notes for question 17: Stream S-B34 has multiple resource crossings within close proximity, which prevented the restoration of the stream's 50' buffer zones until after those crossings are completed.</p> <p>12/19/2023: A dam and pump around conveyance system was installed.</p> <p>12/20/2023: Topsoil from the 10' stream buffer zone was stripped and segregated on plastic sheeting in an upland area. Stones from the streambed that were large enough to influence flow were set aside so that they could be returned to their place in the channel during restoration. The top 12" of the stream substrate was placed in super sacks while the native stream subsoil was segregated in an upland area during construction so it could be used as stream backfill material during restoration.</p> <p>12/21/2023: After the ditch excavation was completed, the stream section of pipe was lowered in, and the weld on the CIS was completed. After x-ray activities were completed, the bentonite trench breakers were installed on either side of the stream. The native subsoil material was used to backfill the stream section of the ditch to within 12" of the streambed pre-construction elevation.</p> <p>12/22/2023: The stream substrate was returned and the significant stones that had been removed prior to excavation were returned to their place in the streambed. The stream banks were reconstructed through the 10' buffer, and 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. (Ref. MVP Restoration and Rehabilitation Plan Sections 2.1 and 3.5) The dam and pump around conveyance system 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>						
Name		Signature		Company		
Jeffrey Arbogast				SWCA		
				Date		
				12/22/2023		

AFE 124300131	Date/Time 12/19/2023 7:49 AM	Report # 469
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Required Photos

			
GPS Location	See Caption in Photo	GPS Location	See Caption in Photo
Description	Downstream view of permitted impact area during pre-construction assessment.	Description	Downstream view of unimpacted area during pre-construction assessment. Standing on timber mat bridge.
			
GPS Location	See Caption in Photo	GPS Location	See Caption in Photo
Description	Downstream view of permitted impact area during post-construction assessment.	Description	Downstream view of unimpacted area during post-construction assessment. Standing on timber mat bridge.
			
GPS Location	See Caption in Photo	GPS Location	See Caption in Photo
Description	10' buffer material being removed.	Description	Stream subsoil being placed in super sacks.

Optional Photos		
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 <p>12/20/2023 15:57:55 +38.494420,-80.561244 153° SE S-B34 (Dur-JA)</p>		 <p>12/21/2023 13:38:53 +38.494376,-80.561218 153° SE S-B34 (Dur-JA)</p>	
GPS Location	See Caption in Photo	GPS Location	See Caption in Photo
Description	Stream subsoil being removed.	Description	Stream section of pipe lowered in.
 <p>12/21/2023 16:41:27 +38.493679,-80.561016 5° N S-B34 (Dur-JA)</p>		 <p>12/21/2023 20:10:04 +38.494172,-80.561082 172° S S-B34 (Dur-JA)</p>	
GPS Location	See Caption in Photo	GPS Location	See Caption in Photo
Description	Bentonite trench breakers	Description	Backfilling with native subsoil
 <p>12/22/2023 08:44:32 +38.493964,-80.560916 4° N S-B34 (Dur-JA)</p>		 <p>12/22/2023 09:33:38 +38.494054,-80.560872 322° NW S-B34 (Dur-JA)</p>	
GPS Location	See Caption in Photo	GPS Location	See Caption in Photo
Description	Survey verifying stream subsoil elevation.	Description	Stream substrate being returned to the channel.