



# Stream Biological Conditions EA Report


<b>Project Name</b>	H-600 Pipeline Spread D	<b>AFE</b>	124300132	<b>Spread</b>	H-600 Pipeline Spread D
<b>Contractor</b>	Precision	<b>Report #</b>	324		
<b>Environmental Auditor</b>	Todd Grant	<b>Date/Time</b>	10/27/2023 8:54 PM		
<b>Stream ID</b>	S-I36	<b>Crossing Start Date</b>	10/27/2023	<b>Crossing Completion Date</b>	11/9/2023
<b>Milepost</b>	127.04	<b>Pre-Con Assessment Date</b>	10/27/2023	<b>Post-Con Assessment Date</b>	11/11/2023
<b>Station</b>	6707+80	<b>Bankfull Width (ft.)</b>	55.0	<b>Riffle:Pool Complexes Present?</b>	Yes
<b>State</b>	WV	<b>Stream Classification</b>	Perennial		
<b>County</b>	Nicholas	<b>303(d) Impairment Listing</b>	No		

### Resource Post-Crossing Conditions

1	Were all applicable resource specific crossing conditions satisfied?	Yes
	Time of Year Restrictions (TOYR)? <u>Yes</u> Mussel Relocation? <u>No</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 <input checked="" type="checkbox"/> Flume <input checked="" 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?	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)?	Yes
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




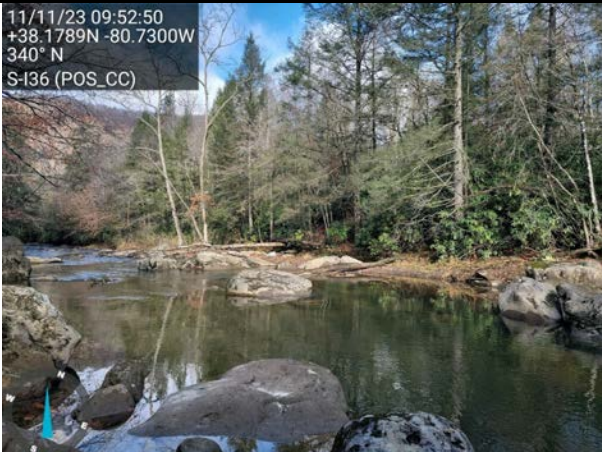


### Biological Conditions

		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	Cobble (2-10")	Cobble (2-10")
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	1
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

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<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	1	
<b>Additional Notes</b>						
Expanded Notes for question 1: Stream S-I36 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.						
<p>10/27/2023 to 10/31/2023 - The crossing of stream S-I36 commenced with the construction of the flume and dam/pump around conveyance system. Several modifications were needed to control the volume of stream water from the first attempts. Two hydric 12" pumps were add to the original six 8" pumps to manage the pump around. The 42" flume pipe that reached from the main upstream dam to the first of 2 back flow dams located under the travel lane bridge was replaced with a longer 42" flume pipe that extended past the bridge. The second back flow dam was constructed to accommodate the longer flume pipe and create a larger void area of water for the trenching area. The main upstream dam was constructed with sandbags in super sacks, individual sandbags and clear plastic lining. The workspace between the dams was observed to have a steady flow of water entering at several points and road plates were driven into the streambed behind the upstream dam in an attempt to slow some of the water that was bypassing the dam. Turbidity curtains were installed upstream in an attempt to control the leaf litter that continuously clogged the suction hoses. Pump around discharge hoses were extended further down stream to minimize the amount of back flow. Pump around and dewatering activities were managed and conducted around the clock, throughout the crossing. Once the trench area water was pumped down, survey recorded the location of the previously submerged large boulders and streambed elevations. The large boulders in the steam banks and streambed were removed and segregated in an upland area. The extremely large boulder in the center of the stream on the ditch line that was too large to move was authorized to be broken into smaller pieces and removed from the streambed. The removal of the substrate on 10/30/23 was delayed due to a rain event moving into the area.</p> <p>11/1/2023 - The top 12 inches of the stream bank soil and the top 12 plus inches of the streambed substrate were removed and segregated in an upland area. The streambed substrate mainly consisted of cobble and large boulder before hitting bedrock, which required hammering.</p> <p>11/2/2023 to 11/6/2023 - Ditch excavation continued for several days with the hammering of bedrock.</p> <p>11/7/23 - Interval spaced sandbags were placed on the bottom of the trench prior to the pipe being lowered in and surveyed. Saddle weights were installed prior to padding the pipe with sifted subsoil and constructing trench breakers with AquaBlok and bags of bentonite. Backfilling continued for the remainder of the day.</p> <p>11/8/23 - Once backfilling of the subsoil was complete, the top 12 inches of stream bank soil and the top 12 inches of streambed substrate, including cobble and large boulders that were removed prior to construction, were returned to the channel in the same or close proximity to the original location. A large boulder that was excavated during trenching and manageable by the excavator was used to replace the predominant large boulder seen in the #5 during construction photo. All elevations, contours, and boulder locations were verified by civil survey to preconstruction specifications. Flow was reestablished and the banks were stable. The contractor was not able to finish the 10ft. buffer zone on either bank by the end of the day due to the amount of work to remove the flume, pumps/suction lines, and 3 dams from the streambed.</p> <p>11/9/23 - Survey verified that the 10ft. buffer zones on both side of stream S-I36 were restored to preconstruction elevations and contours. Erosion Control Devices (ECDs) were installed along both sides of the creek's embankment including silt fence and straw blankets.</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.						
<b>Name</b>		<b>Signature</b>		<b>Company</b>		
Todd Grant				SWCA		
				Date		
				11/11/2023		

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**Required Photos**

			
<b>GPS Location</b>	See photo above	<b>GPS Location</b>	See photo above
<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.
			
<b>GPS Location</b>	See photo above	<b>GPS Location</b>	See photo above
<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.
			
<b>GPS Location</b>	See photo above	<b>GPS Location</b>	See photo above
<b>Description</b>	View of contractor setting first super sacks of sand for dam construction. This is the #5 photo mention in the additional notes section.	<b>Description</b>	View of boulders from stream segregated on plastic in upland area.

<b>Optional Photos</b>	
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 <p>10/27/2023 16:54:42 +38.179034,-80.729747 190° S S-I36 (Dur_TG)</p>	 <p>10/28/2023 10:48:29 +38.178886,-80.729916 81° E S-I36 (Dur_TG)</p>
<b>GPS Location</b> See photo above	<b>GPS Location</b> See photo above
<b>Description</b> View of dam with flume pipe installed to assist pump around pumps during dam construction.	<b>Description</b> View of turbidity curtains being installed to divert floating leaf litter away from suction hoses.
 <p>11/7/23 11:53:27 38.1792N 80.7296W 195° S S-I36 (Dur_RG)</p>	 <p>10/29/2023 14:54:36 +38.178511,-80.730164 98° E S-I36 (Dur_TG)</p>
<b>GPS Location</b> See photo above	<b>GPS Location</b> See photo above
<b>Description</b> Installation of saddle weights.	<b>Description</b> View of a large boulder being removed from the instream workspace.
 <p>11/7/23 12:49:27 38.1787N 80.7299W 334° NW S-I36 (Dur_RG)</p>	 <p>11/8/23 10:23:25 38.1790N 80.7298W 110° E S-I36 (Dur_RG)</p>
<b>GPS Location</b> See photo above	<b>GPS Location</b> See photo above
<b>Description</b> Padding of the pipe on the going away side of S-I36.	<b>Description</b> Survey verifying elevations in the streambed on the coming in side of S-I36.