

Scene 24 · MS4 Assessment

Black Branch 2

City of Lebanon TN

36.17014, -86.26997 · Generated October 22, 2026

OVERALL SCORE

3.5

Poor



Front: Looking downstream, a very narrow, shallow stream channel flows through a deciduous forest corridor. The channel bed is dominated by flat, angular stones that appear to be concrete rubble rather than natural bedrock. A red metal barn or agricultural structure is visible on the left bank. Bare deciduous trees line both sides with some early spring green growth in the understory.

Right: The right bank (left bank when facing downstream) rises steeply into a wooded hillside. A large fallen tree with moss-covered trunk and exposed root wad is prominent. The hillside is covered with bare deciduous trees and dense understory brush. Early spring green growth (possibly invasive honeysuckle) is visible at ground level. The bank shows moderate slope with leaf litter covering the ground.

Back: Looking upstream, the narrow channel extends through the wooded corridor with shallow flowing water visible over a rocky/rubble bed. A large moss-covered fallen log spans across the left bank area. The channel appears slightly wider upstream with more visible water flow. Both banks are lined with bare deciduous trees. Some litter (possibly blue/purple fabric or plastic) is visible on the left bank among the debris. An open field or pasture area is faintly visible through the trees on the far right.

Left: The left bank direction reveals a large red metal barn/agricultural building very close to the stream. An open gravel or dirt area surrounds the barn entrance with mowed grass/pasture beyond. Angular stone and concrete rubble is piled along the bank edge between the stream and the barn. Some trash (blue plastic, black plastic sheeting) is visible among the rubble. Several trees including eastern red cedars stand between the barn and the stream channel.

Assessment Scores

Component	Score	Visual	Rating
Channel Condition	2		poor
Hydrologic Alteration	3		Poor
Sediment Deposition	4		Fair
Left Bank Stability	3		Poor
Right Bank Stability	5		Fair
Left Vegetative Protection	3		Poor
Right Vegetative Protection	5		Fair
Riparian Canopy Cover	5		Fair
Floodplain Vegetation	2		Poor
Water Appearance	5		Fair
Nutrient Enrichment	7		Good
Epifaunal Substrate	-		-

Urgency: IMMEDIATE

Detailed Observations · Scene 24

Black Branch at this location (Scene #24) is severely impaired, primarily due to illegal dumping of construction and demolition concrete debris in the channel and along the left bank. The natural substrate has been completely replaced by broken concrete slabs, eliminating pool-riffle morphology and degrading macroinvertebrate and fish habitat. A red metal agricultural barn is located within 20-30 feet of the channel on the left bank, well within the TDEC minimum 30-foot riparian buffer, and the left bank buffer is functionally absent. The right bank maintains a reasonable wooded hillside buffer. Invasive shrubs (likely bush honeysuckle) are colonizing the understory. This reach requires enforcement action regarding the concrete dumping and a comprehensive restoration plan to remove debris and restore natural channel function.

Primary Stressors

channelization, sedimentation, riparian loss, bank erosion

Channel Assessment

Metric	Score	Notes
Channel Condition	2	Channel bed is dominated by dumped concrete rubble. The left bank has been armored with stacked concrete debris. The channel shows evidence of incision and the natural substrate has been completely replaced by artificial material. While not formal channelization, the concrete dumping has fundamentally altered channel character.
Hydrologic Alteration	3	The stream shows moderate incision with banks 3-6 feet high relative to the narrow channel. The agricultural building and gravel area very close to the channel suggest floodplain has been modified. Concrete rubble placement may have altered flow patterns and connectivity.
Sediment Deposition	4	Fine sediment has accumulated between and over the concrete rubble fragments. The artificial substrate traps sediment. Some natural sediment deposition is evident but assessment is complicated by the concrete rubble dominating the bed.

Bank Assessment

Side	Stability	Veg. Protection	Erosion	Notes
Left	3	3	26_50_percent	Left bank heavily impacted by adjacent agricultural building. Concrete rubble dumping along bank is both informal stabilization and an environmental concern. The barn is approximately 20-30 feet from the channel, well within the riparian buffer zone. Trash and debris (plastic) mixed with rubble.
Right	5	5	1_25_percent	Right bank is in substantially better condition than the left bank. Wooded hillside provides natural stabilization. Fallen tree and root wad may provide some habitat value. No artificial modifications observed.

Riparian Assessment

Metric	Score/Value	Notes
Canopy Cover	5	Currently in early spring with bare deciduous canopy, shade is approximately 25-40%. During full leaf-on conditions, shade would increase to perhaps 50-70% from the deciduous trees. The right bank provides better canopy coverage than the compromised left bank. Cedar trees on the left provide some year-round shade.
Left Buffer Width	under 10ft	Score: 2/10
Right Buffer Width	50 100ft	Score: 7/10
TDEC 30ft Buffer Met?	L: No / R: Yes	Left bank buffer is non-compliant with TDEC MS4 permit section 4.2.5.4 requirements. The red metal barn/agricultural structure is within the 30-foot minimum buffer. Concrete rubble dumping within the buffer zone constitutes an additional violation. Right bank buffer appears adequate.

Water Quality & Infrastructure · Scene 24

Water Quality Indicators

Metric	Score	Notes
Water Appearance	5	Water is shallow enough that the entire bottom is visible, so clarity assessment is limited by depth rather than turbidity. The water has a slight brownish tint which could be natural tannins or fine sediment. No obvious discoloration, sheen, or film is visible. The very shallow depth makes clarity assessment less meaningful.
Nutrient Enrichment	7	Algae: minor
Manure/Waste	7	No direct evidence of manure or livestock waste in the stream. However, the agricultural barn is very close to the channel, and open pasture/field is visible nearby. No livestock are visible and no direct manure is observed, but the proximity of agricultural operations is a concern.
Surface Contamination	-	Sheen: No · Foam: No · Odor: none

Stormwater Infrastructure

No outfall detected at this location.

Instream Habitat

Metric	Score	Notes
Epifaunal Substrate	-	

Stream Characteristics

Field	Value
Stream Type	intermittent
Gradient	moderate

Management Recommendations

Action	Priority	Timeline
Document and report illegal dumping of construction and demolition concrete debris in stream channel	critical	immediate
Investigate agricultural structure encroachment within riparian buffer zone for compliance with local stormwater and buffer ordinances	high	30_days
Complete outfall mapping upstream and downstream to identify any contributing storm drain connections	medium	90_days
Assess agricultural operation for uncontrolled runoff to stream and need for BMPs	medium	90_days

Terrain360 - terrain360.com/trail/black-branch-2/scene/24/analysis