

Scene 23 · MS4 Assessment

Black Branch 2

City of Lebanon TN

36.17012, -86.26988 · Generated October 22, 2026

OVERALL SCORE

4.2

Poor



Front: Looking downstream, a narrow stream channel is visible with standing/slow-moving water reflecting bare winter trees overhead. The channel is heavily choked with fallen branches, vines, and woody debris. On the left bank, there appears to be angular rock/rubble material that could be placed concrete or rubble rather than natural stone, forming a crude bank stabilization. Dense dormant vegetation lines both sides.

Right: Looking toward the right bank (left bank when facing downstream), dense dormant shrubs and vines dominate the view. The vegetation is extremely thick with tangled branches typical of invasive bush honeysuckle and Japanese honeysuckle. Some green herbaceous growth visible at ground level. Mature trees visible in background with a few evergreen cedars. No water or channel directly visible in this direction.

Back: Looking upstream, the narrow stream channel flows through a confined corridor with angular rubble/rock material along banks. The stream bed shows shallow flowing water over rocky substrate. A person in high-visibility safety gear is visible on the bank — this is the survey crew member. Beyond the channel, an open agricultural field is visible to the right, and deciduous/cedar trees line the bank to the left. The angular, flat-surfaced rubble along the stream bank has characteristics strongly suggestive of broken concrete rather than natural rock — uniform gray color, flat surfaces, angular breaks, and proximity to agricultural infrastructure.

Left: Looking toward the left bank (right bank when facing downstream), a red agricultural barn/pole building is prominently visible with open agricultural fields beyond. Large angular concrete blocks/rubble are clearly visible at the base of the bank near the water. These are unmistakably broken concrete — rectangular blocks with flat surfaces, sharp angular edges, and uniform gray color. Green grass and some herbaceous growth visible near the barn. The buffer between the agricultural structures and the stream is very narrow, likely under 25 feet.

Assessment Scores

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

Urgency: MEDIUM TERM 6 12 MONTHS

Detailed Observations · Scene 23

Black Branch at position #23 is a severely impaired small headwater stream flowing through an agricultural landscape. The channel is moderately incised with 3-6 foot banks, disconnected from its floodplain, and dominated by silt/mud substrate from agricultural runoff. The right bank (left when facing downstream) has a critically deficient riparian buffer with an agricultural barn within 20-25 feet of the channel. Broken concrete debris has been dumped along banks as informal stabilization — this represents unpermitted fill material. The left bank has a wider buffer but is dominated by invasive bush honeysuckle and Japanese honeysuckle. MS4 compliance concerns include buffer violations and unpermitted bank filling.

Primary Stressors

sedimentation, bank erosion, riparian loss

Channel Assessment

Metric	Score	Notes
Channel Condition	4	Channel shows evidence of incision with moderate-high banks relative to its small size. Broken concrete has been placed along banks as crude stabilization. Channel appears moderately altered but retains some natural characteristics. Downcutting evidence visible from bank heights relative to apparent bankfull indicators.
Hydrologic Alteration	3	Channel appears moderately to deeply incised with 3-6 foot banks on this narrow stream, suggesting disconnection from its floodplain. The incision is likely driven by agricultural land use changes and increased runoff from surrounding fields. Flooding of the adjacent field appears infrequent.
Sediment Deposition	3	Significant fine sediment (silt and mud) visible on channel bed. The substrate appears heavily embedded with fine sediment. Pool areas appear partially filled. Agricultural runoff is the likely sediment source. Estimated 30-50% of channel bottom affected.

Bank Assessment

Side	Stability	Veg. Protection	Erosion	Notes
Left	4	5	1_25_percent	Left bank protected primarily by dense invasive shrub growth. Bank stability is moderate but dependent on invasive species root mass. Any invasive removal program should include a bank stabilization component.
Right	3	3	26_50_percent	Right bank is the more impaired bank with limited buffer, agricultural encroachment, and informal concrete dumping used as stabilization. Bank is moderately unstable with active erosion. Agricultural barn is within approximately 25 feet of the stream channel.

Riparian Assessment

Metric	Score/Value	Notes
Canopy Cover	5	In winter dormancy, the bare deciduous canopy provides minimal shade currently. During growing season, the mature trees visible in the up face would provide moderate shade (estimated 40-60%). However, the one-sided nature of the canopy (primarily from left bank trees) limits full channel shading. Score reflects growing season potential.
Left Buffer Width	25 50ft	Score: 5/10
Right Buffer Width	under 10ft	Score: 2/10
TDEC 30ft Buffer Met?	L: Yes / R: No	Right bank buffer is severely deficient. Agricultural barn and field encroach within the 30-foot buffer zone. Buffer restoration on the right bank would require setback of agricultural activities. Left bank buffer exists but requires invasive species management to restore native riparian function. Per TDEC MS4 permit section 4.2.5.4, buffer compliance is not met on the right bank.

Water Quality & Infrastructure · Scene 23

Water Quality Indicators

Metric	Score	Notes
Water Appearance	4	Water is turbid with brown coloration. Visibility appears to be approximately 0.5-1 foot. The turbidity may be partially due to recent precipitation but the silt substrate likely maintains elevated turbidity. Slightly better than the worst category as some bed features are visible in shallow areas.
Nutrient Enrichment	7	Algae: minor
Manure/Waste	7	No direct evidence of manure or waste discharge visible. Agricultural land adjacent appears to be crop field rather than pasture. However, the barn structure on the right bank is close to the stream and could be a potential livestock shelter, though no livestock are visible. No manure or waste pipes observed.
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	perennial
Gradient	low_flat

Management Recommendations

Action	Priority	Timeline
Document concrete debris dumping along right bank as potential unpermitted fill in stream buffer. Investigate whether ARAP permit was obtained for bank stabilization activities.	high	90_days
Document right bank buffer deficiency. Agricultural barn and field encroach within TDEC 30-foot minimum buffer zone.	medium	90_days
Map this reach as part of outfall inventory — no stormwater outfalls identified at this position but agricultural drainage patterns should be documented.	medium	annual

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