

Boardman River/Lake Tributary, Outfall and Sampling GPS Points

On June 18, 2003 Ball Environmental Associates used Global positioning Systems (GPS) equipment to document the locations of every tributary, culvert, and outfall entering the Boardman River/Lake from Sabin Dam north to the mouth on Grand Traverse Bay. The following are summaries of each GPS location, including code and description.

TR-1 Tributary entering the west side of the river immediately north of Sabin Dam. The substrate consists of sand and gravel bottom.

TR-2 Small, cold, clear and fast moving tributary with a gravel bottom entering the east side of the river immediately north of Sabin Dam.

TR-3 Slow moving tributary on east side of the river approximately 0.5 miles north of Sabin Dam. Substrate consists of a silty bottom.

TR-4 Wide and slow moving tributary enter the river approximately 0.6 miles north of Sabin Dam. Substrate consists of a thick silty bottom.

TR-4a Clear, cold and narrow tributary on east side of river just north of TR-4.

TR-5 Narrow, slow-moving tributary entering the west side of the river approximately 0.7 miles north of Sabin Dam.

KD Keystone Dump. A 55-gallon drum was observed in river approximately 10 feet from shore on the east side. Obvious oxidation/reduction staining was observed along the shore on the sand and rocks representing leachate from the dump.

TR-6 Clear and cold fast moving tributary approximately 6 inches deep entering the west side of river. Located approximately 0.1 miles north of Keystone Dump contamination plume.

TR-7 Clear, cold, deep and fast moving tributary entering the river on the west side at Sabin School.

TR-8 Small, deep and slow moving tributary approximately 4 inches deep and entering the west side of the river along YMCA property. Severe erosion is occurring along the YMCA property shoreline requiring some type of bank stabilization mechanism. Substrate consists of a silt bottom.

TR-9 Slow moving tributary approximately 4 feet wide and 8 inches deep entering the east side of the river across from YMCA property. The substrate consists of a silt/sand bottom.

TR-10 Culvert along YMCA property and entering the river on the west side. Tributary is approximately 1 foot deep and the culvert is 36 inches in diameter. Substrate consists of silt/sand bottom. Grass clippings dumped into waterway south of culvert.

SA-S South side of bridge on South Airport Road.

SA-N North side of bridge on South Airport Road.

C-1 A 3-inch culvert on east side of river and on north side of South Airport Road. Significant flow.

C-2 A 24-inch steel with concrete culvert on south side of Eighth Street bridge. From Eighth Street sample with storm event especially spring or early in rain event after a dry period.

C-3 A 12-inch culvert approximately 4 feet above river off parking area at sheriff's office across from old TC Iron Works property.

C-4 An 18-inch PVC lawn drain tile at the west end of condominiums next to jail and approximately 3.5 feet above the river.

C-5 A 24-inch steel storm drain located east of River's Edge on the east side of Cass Street.

C-6 An 18-inch concrete storm drain approximately 4 feet above the river on the west side of Cass Street and north of the bridge. Dry at the time of visit. Should be sampled in a storm event only. Bank is hardened with concrete.

C-7 A parking lot culvert of sediment catchment at dam direct discharge to flume (no sample point).

C-8 A 36-inch corrugated steel culvert draining from Union Street south of the bridge immediately west of the dam. Storm event sampling only.

C-9 Two 8-inch culverts (one with staining) in concrete wall approximately 4 feet above the river. Five 3-inch culverts in same area. Dry at the time of the visit. Storm event sampling only.

C-10 A 36-inch corrugated metal culvert from Sixth Street/Union Street. It appears to be very old and rusted and submerged in the river.

SO-1 Stormwater outfall immediately west of Post Office parking lot. Storm water from street/alley.

SO-2 Storm water outfall immediately west of Post Office parking lot. Runoff from street.

C-11 A 36-inch corrugated steel culvert located at Park and Sixth Street approximately 3 feet above the river. Storm even sampling only. Observed 3 large sea lampreys in river at this location.

C-12 A storm drain hardened with concrete and with a screen. Evidence of flow during spring and summer 2003, approximately 4 feet above the river and has a concrete flow structure to the river. Located at apartments across from Traverse City State Bank.

C-13 A 12-inch corrugated steel lawn drain tile at apartments across from Traverse City State Bank.

C-14 *First observation of zebra mussels. City-owned, 36-inch corrugated steel, dry culvert on the south side of Front and Wadsworth Streets. Located approximately 2 feet above the river.

C-15 Lawn drain at apartment. One foot above river, 12-inch corrugated steel. Signs of old dump (metal, glass, car parts).

TR-11 Kid's Creek tributary. Could be relandscaped and utilized as a community asset, such as a park.

C-16 City-owned, new 12-inch corrugated steel outfall at northeast corner of Front at bridge and at TC State Bank building. Approximately 2.5 feet above the river.

C-17 Two 4-inch PVC lawn and roof drain at TC State Bank. Approximately 4 feet above the river and dry.

C-18 A 4-inch wet PVC parking lot drain located at MDNR fish ladder.

C-19 A 12-inch storm water outlet located at MDNR fish ladder building.

C-20 An old 48-inch corrugated steel culvert a half-inch above the river located in the city drains area at the transfer station south to river.

C-21 A new 8-inch PVC roof/lawn drain at north side of TC State Bank building approximately 4 feet above the river and dry.

C-22 A 12-inch and 10 inch old steel drain pipes approximately 1.5 feet above the river and dry. Located on the north side of the river across from J&S Hamburg drain in the Hall Street area.

C-22a A 24-inch city drain at J&S Hamburg next to overflow parking structure to the east.

C-23 Old steel 6-inch pipe from former Grand Traverse Auto, source unknown, dry however distinct, strong paint odor exists. Two 55-gallon and two 40-gallon drums were observed in center of river bed. Also observed tires, bottles and other various items.

C-24 Old steel 40-inch and an old ceramic 4 inch located at former Grand Traverse Auto. A 50-gallon drum was observed.

C-25 One new 10-inch block poly corrugated drain, one (1) new 6-inch PVC. Roof drain? Source unknown? Dry at time of visit. One 10-inch at 2 feet above river, one 6-inch at 3.0 feet above river.

C-26 One dry 24-inch catchment at Old Kent Building parking lot.

C-27 Four culverts at Old Kent Building (1 running, 3 dry). Ornate brick work observed in river at river edge from old building façade.

C-28 One 8-inch dry culvert from OKB drive thru? At north side of the river.

C-29 Old 24-inch ceramic beneath Union Street bridge, south side. Also, new 24-inch concrete at southeast corner of bridge behind ski shop, dry 6 feet above river.

C-30 One 4-inch and one 8-inch old steel culvert along north bank from farmer's market parking lot, dry.

SO-3 Spillway at west side farmer's market parking

C-31 New 8-inch concrete with metal spillway form farmer's market parking lot, dry, 2.5 feet above river.

C-32 One old ceramic 6-inch culvert behind former Ray's Coffee at 3.5 feet above river, one new 8-inch PVC at 6 feet above river, one 8-inch concrete east of foot bridge at 5.5 feet above river.

C-33 One 16-inch concrete culvert in concrete wall at park area behind Andrew Kan at 4 feet above river, dry on south side.

C-34 One 10-inch PVC culvert 4 feet above river at parking area on concrete wall behind Fetish and Shag retail stores.

C-35 One 6-inch concrete culvert in concrete wall 5 feet above river, dry, behind Vintagy in parking lot.

C-36 One 8-inch PVC culvert wet behind Osiris Bead Shop parking lot, 4 feet above river.

C-37 One 6-8-inch concrete culvert in concrete wall immediately south of C-36.

- C-38 One 18-inch concrete culvert in concrete wall, dry, in parking area behind Captain's Quarters.
- C-39 One 18-inch concrete culvert, running fast, immediately east of C-38.
- C-40 One 8-inch PVC, wet behind Mackinac Brewery.
- C-41 One 18-inch corrugated metal on north side at farmer's market parking area, 3.5 feet above river, dry.
- C-42 Several 20-inch concrete drains at Cass Street bridge north side of river in southeast corner of farmer's market parking lot, 2 feet above river, dry.
- C-43 Two 24-inch (1 and 3 feet above river) corrugated metal culverts from Front and Cass, south side of Cass bridge, both dry.
- C-44 Two 8-inch PVC culverts running fast from roof top of Old NW Bank building, south side of river.
- C-45 One 8-inch PVC culvert, dry 4 feet above river behind Nutcracker in concrete wall along alley on south side of river.
- C-46 One 10-inch ceramic tile culvert on south side of river, dry, 2 feet above river, from rooftop, behind Cherry Stop in alley.
- C-47 One 6-inch ceramic rooftop drain on south side, 3 feet above, dry, behind south side of river behind Toy Harbor in steel barrier.
- C-48 One 18-inch concrete culvert, dry, at southeast corner of foot bridge, dry, south side of river, behind Backcountry Outfitters, city stormwater drain.
- C-49 One 6-inch ceramic rooftop drain, dry, 2 feet above river.
- C-50 One 8-inch ceramic rooftop drain at State Theater in steel wall, dry, 3 feet above river.
- C-51 One 6-inch steel culvert, running, from rooftop of Horizon Books.
- C-52 One 18-inch ceramic culvert, dry, at Horizon Books, 2 feet above river. Had conversation with Horizon employee, he commented on a sewer/waste odor that occurs each night around 10 pm.
- C-53 One 6-inch old steel rooftop drain from former Firestone building, 2 feet above river. A 55-gallon drum and other various garbage observed.

- C-54 One 4-inch old pipe from former Firestone building, on south side of river, dry, 2 feet above river.
- C-55 One 6-inch steel pipe at former Firestone building, dry, near Park Street, 2 feet above river.
- C-56 One 18-inch concrete beneath Park Street bridge, south side of river, dry.
- C-57 One 12-inch concrete culvert on north side of river from parking lot east of Chamber of Commerce, 2 feet above the river.
- C-58 An unknown culvert to river from parking area east of Chamber of Commerce building.
- C-59 An unknown culvert to the river from parking area east of Chamber of Commerce.
- C-60 One 16-inch concrete culvert from City of Traverse City parking lot, east of foot bridge, and east of Chamber of Commerce building.
- C-61 Four drains below Park Street Bridge
- C-62 Park Street bridge. Southeast corner at the law offices
- C-BF One 36-inch culvert at the base of Boardman Avenue (with Front Street), south side of river, running constantly, already sampled.
- C-64 One 24-inch concrete culvert at deck of TC public park, south side of river, between Paesano's and Real Estate One office (old culvert: on east side)
- C-65 Under bridge of Grandview Parkway, 8 drains to river from bridge surface, four on each side.
- C-66 One 18-inch steel culvert, 2 feet above the river from Grandview Parkway/M37 Highway.
- C-67 One 12-inch, dry, PVC culvert, 1 foot above the river just off public parking lot at the boat launch.
- C-68 One 24-inch corrugated steel culvert, 3.0 feet above river, dry.
- C-BM One 8-inch steel culvert, 11 feet above the river, off parking area at west end of boat launch.