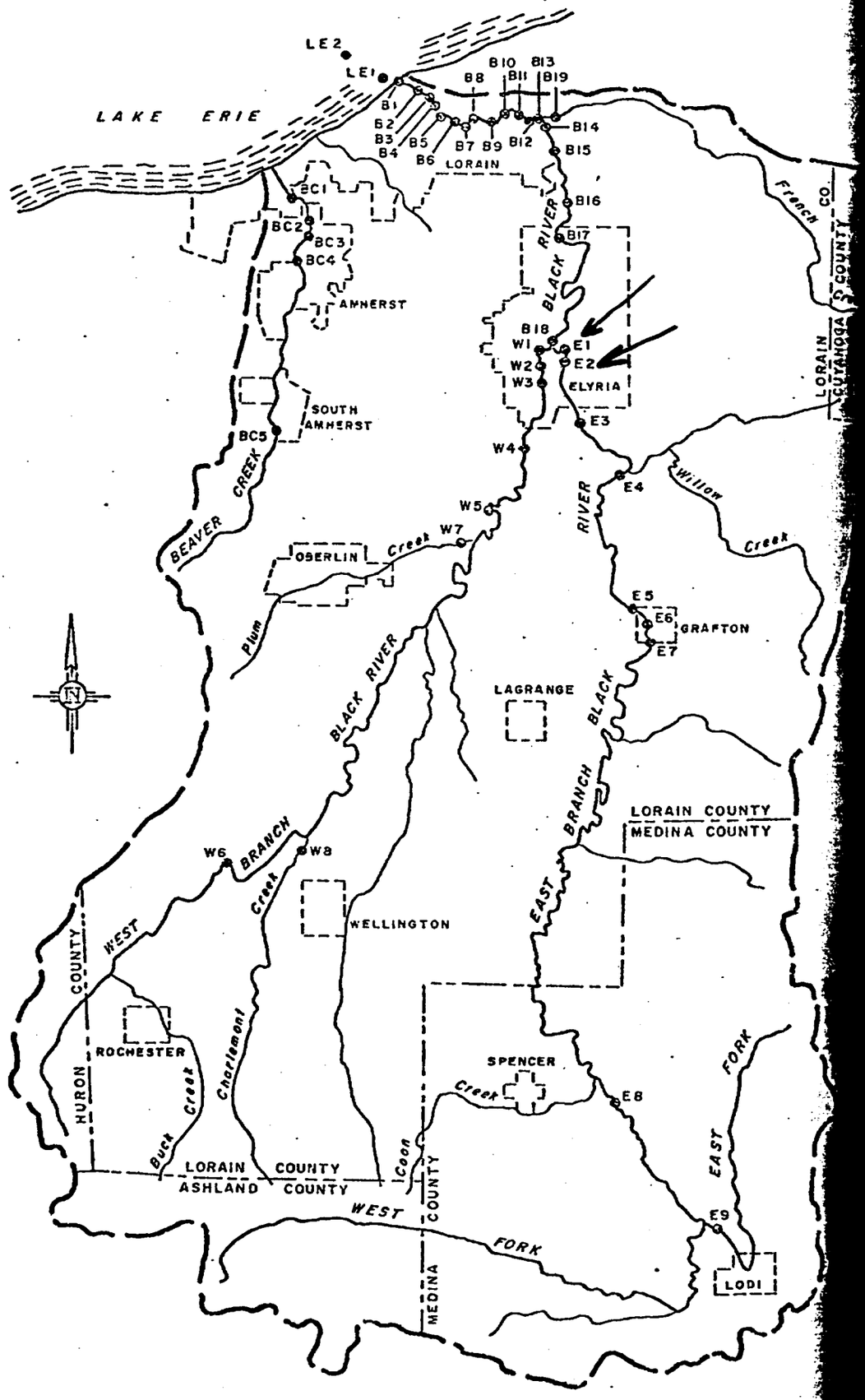
Chemical Analysis

OH-293-20

145841

FIGURE G-1
BLACK RIVER PLANNING AREA
STREAM SURVEY STATIONS
APRIL 30-MAY 2, 1974



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V
MICHIGAN–OHIO DISTRICT OFFICE

STREAM: EAST BRANCH BLACK RIVER
STATION IDENTIFICATION: See below
SURVEY DATE: April 30, 1974

River Samples

TABLE

| STATION NUMBER | E1 | E2 | E3 | E4 | E5 | E6 | E7 | E8 |
|---|---|---|---|---|---|---|---|---|
| RIVER MILE | 0.4 | 1.1 | 3.3 | 5.7 | 10.2 | 11.3 | 13.0 | 38.8 |
| MODO SAMPLE NUMBER | 9287 | 9288 | 9289 | 9290 | 9291 | 9292 | 9293 | 9294 |
| Flow (cfs) | - | - | - | - | - | - | - | - |
| pH (STD. units) | 8.1 | 7.5 | 7.1 | 8.0 | 7.9 | 7.6 | 7.4 | 7.7 |
| Temperature (°F) | 63 | 63 | 61 | 64 | 64 | 65 | 65 | 63 |
| Conductivity (umhos/cm) | 690 | 700 | 700 | 545 | 540 | 530 | 525 | 620 |
| Dissolved Oxygen (mg/l) | 7.2 | 8.6 | 9.4 | 9.2 | 9.2 | 10.0 | 8.5 | 7.8 |
| Dissolved Oxygen % Sat. | 77 | 91 | 97 | 100 | 100 | 110 | 93 | 84 |
| $BOD_5$ (mg/l) | 6.2 | 5.2 | 2.6 | 2.3 | 2.6 | 1.7 | 1.7 | 2.1 |
| $BOD_{20}$ (mg/l) | 14.5 | 7.4 | 5.6 | 5.5 | 6.0 | 3.8 | 3.8 | 4.2 |
| COD (mg/l) | 41 | 35 | 35 | 29 | 23 | 25 | 19 | 18 |
| TOC (mg/l) | 9 | 7 | 7 | 7 | 7 | 10 | 7 | 7 |
| Solids, Total (mg/l) | 444 | 430 | 433 | 426 | 426 | 446 | 500 | 533 |
| Solids, Dissolved (mg/l) | 436 | 413 | 427 | 401 | 404 | 403 | 412 | 475 |
| Solids, Suspended (mg/l) | 7 | 12 | 5 | 8 | 9 | 9 | 18 | 20 |
| Hardness (mg/l $CaCO_3$) | 234 | 248 | 246 | 255 | 245 | 249 | 257 | 301 |
| Alkalinity (mg/l $CaCO_3$) | 144 | 146 | 146 | 144 | 138 | 140 | 146 | 174 |
| Chloride (mg/l) | 37 | 35 | 26 | 24 | 29 | 23 | 29 | 30 |
| Fluoride (mg/l) | 0.19 | 0.17 | 0.16 | 0.15 | 0.17 | 0.14 | 0.17 | 0.16 |
| Sulfate (mg/l) | 116 | 126 | 111 | 112 | 124 | 117 | 140 | 142 |
| Phosphorus, Total (mg/l,P) | 0.227 | 0.197 | 0.156 | 0.094 | 0.168 | 0.033 | 0.043 | 0.100 |
| Total Kjeldahl–N (mg/l) | 1.1 | 0.8 | 0.8 | 0.6 | 0.8 | 0.5 | 0.6 | 0.6 |
| Ammonia–N (mg/l) | 0.19 | 0.04 | 0.06 | <0.03 | 0.05 | <0.03 | <0.03 | <0.03 |
| Nitrate–Nitrite–N (mg/l) | 0.28 | 0.04 | <0.03 | <0.03 | 0.23 | <0.03 | <0.03 | 0.25 |
| Oil and Grease — (mg/l) | 3 | 1 | <1 | <1 | 2 | 1 | 1 | 2 |
| Cyanide, Total (mg/l) | <0.005 | <0.005 | <0.005 | - | - | - | - | - |
| Phenol (mg/l) | <2 | <2 | <2 | - | - | - | - | - |
| MBAS (mg/l) | 0.14 | 0.10 | 0.05 | 0.03 | 0.08 | 0.04 | 0.33 | 0.05 |
| Fecal Coliform (Nos./100 ml) | - | 22000 | 1200 | 530 | 7600 | 1200 | 480 | 210 |
| Fecal Strep. (Nos/100 ml) | - | 2000 | 1670 | 480 | 1400 | 1100 | 370 | 460 |
| Aluminum, Total (ug/l) | <200 | 230 | <200 | <200 | 220 | 250 | 460 | 250 |
| Arsenic, Total (ug/l) | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 |
| Barium, Total (ug/l) | 55 | <50 | 60 | <50 | <50 | <50 | <50 | <50 |
| Beryllium, Total (ug/l) | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 |
| Cadmium, Total (ug/l) | <10 | <10 | <10 | <10 | <10 | <10 | 10 | 12 |
| Chromium, Total (ug/l) | <30 | <30 | <30 | <30 | <30 | <30 | <30 | <30 |
| Chromium, Hexavalent (ug/l) | 15 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Copper, Total (ug/l) | 25 | <15 | <15 | <15 | <15 | <15 | <15 | <15 |
| Iron, Total (ug/l) | 620 | 580 | 400 | 570 | 640 | 710 | 1340 | 1320 |
| Iron, Dissolved (ug/l) | 25 | 30 | 25 | 13 | 30 | 25 | 25 | 25 |
| Lead, Total (ug/l) | <40 | <40 | 40 | 42 | 48 | <40 | <40 | <40 |
| Manganese, Total (ug/l) | 60 | 50 | 30 | 40 | 60 | 30 | 80 | 100 |
| Manganese, Dissolved (ug/l) | 40 | 18 | 37 | 35 | 55 | 25 | 30 | 65 |
| Mercury, Total (ug/l) | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Nickel, Total (ug/l) | <30 | <30 | <30 | <30 | <30 | <30 | <30 | <30 |
| Selenium, Total (ug/l) | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| Silver, Total (ug/l) | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Tin, Total (ug/l) | <400 | <400 | <400 | <400 | <400 | <400 | <400 | <400 |
| [illegible] | 10 | <5 | <5 | 20 | 10 | <5 | 25 | <5 |

TABLE VII-5

BLACK RIVER PLANNING AREA - EAST BRANCH OF THE BLACK RIVER

EFFLUENT LOADINGS (LBS/DAY)
(Gross except where noted)

| Discharger | Harshaw Chemical E.Br.Black River | Harshaw Chemical E.Br.Black River | Pfaudler Co. Storm Sewer | General Industries Storm Sewer | Abex Corp. Storm Sewer | Lear Siegler Co. Storm Sewer | Eaton Estates STP Willow Creek | Brentwood Lake Estates STP Trib.to E.B.Black |
|---|---|---|---|---|---|---|---|---|
| Mile Point - Main Stem | 0.7 | 0.7 | 1.0 | 1.0 | 1.0 | 1.0 | 5.5 | 5.9 |
| Data Source | Consent Decree Interim Limits | Aug.28-29, 1974 U.S. EPA Survey | COE Permit Application | Elyria City Permit | COE Permit Application | COE Permit Application | 1973 Monthly Data Ohio EPA | Jan.-Feb. 1974 Ohio EPA Monthly Data |
| Flow (mgd) | 0.479 | 0.59 | 0.003 | 0.017 | 0.044 | 0.0144 | 0.094 | 0.07 |
| $BOD_5$ | | | | 0.76 | 2.4 | 0.16 | 8.3 | 2.7 |
| COD | | | | 27 | 15 | 14 | | |
| TOC | | 74 | | 19 | | | | |
| Chloride | | 18,220 | 0.6 | 6 | 12 | 3.8 | | |
| Fluoride | | 9.4 | 0.025 | | 0.16 | | | |
| Sulfate | | 3,100 | 0.7 | 7.1 | - | 1.4 | | |
| Total Solids | | 24,500 | 4.9 | 37 | 113 | 26.5 | | |
| Suspended Solids | 1,600 | 3,400 | | 0.3 | 18 | 3.7 | 9.1 | 5.4 |
| Dissolved Solids | | 21,960 | | 36 | 95 | 23 | | |
| Total Phosphorus | | 0.8 | - | 0.14 | - | - | | |
| Ammonia (N) | 1,000 | 144 | | | - | - | | |
| Nitrate + Nitrite -N | | 39 | 0.025 | 0.11 | - | - | | |
| TKN | | 162 | | | - | 0.002 | | |
| Oil and Grease | 40 | 8.9 | | 19.3 | 33 | 1.6 | | |
| Cyanide | | - | | 0.03 | | - | | |
| Phenols | | - | | | | - | | |
| Total Barium | | 0.6 | | - | | 0.7 | | |
| Total Cadmium | 4 | 4.1 | | | 0.055 | - | | |
| Total Chromium | 8 | 2 | | | 0.02 | - | | |
| Hexavalent Chromium | | | | 0.025 | | - | | |
| Total Copper | 12 | 3.1 | | | | 0.002 | | |
| Total Iron | | 37 | 0.003 | 0.13 | 0.1 | 0.004 | | |
| Total Lead | 4 | 0.9 | | 1.3 | | - | | |
| Total Manganese | | 0.7 | | 0.02 | - | - | | |
| Total Mercury | 0.02 | 0.0039 | | | - | - | | |
| Total Nickel | 8 | 0.5 | | | | 0.004 | | |
| Total Zinc | 8 | 6.9 | | 0.1 | | - | | |
| Thermal Load ($10^6$BTU/hr.) | | | | | | | | |