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| **Metadata: Mohawk River at Ilion, NY**  **C:\HRECOS\HRECOS_logo.small.TIFLocation:** Ilion, NY ([43.019750, -75.028472](https://www.google.com/maps/place/43%C2%B001'11.1%22N+75%C2%B001'42.5%22W/@43.019758,-75.0290082,19z/data=!3m1!4b1!4m2!3m1!1s0x0:0x0?hl=en))  *Data collection period*: 9/23/2015 – present, seasonally  *Parameters*: pH, dissolved oxygen, specific conductance, turbidity, water temperature, and water depth above sonde.  **Previous location:** Frankfort, NY ([43.045277, -75.070093](https://www.google.com/maps/place/43%C2%B002'43.0%22N+75%C2%B004'12.3%22W/@43.0452783,-75.0700833,3139m/data=!3m1!1e3!4m2!3m1!1s0x0:0x0?hl=en))  *Data collection periods*:2013: 5/1-6/15, 8/23-11/5; 2014: 5/6-7/17  *Parameters:* pH, dissolved oxygen, specific conductance, turbidity, and water temperature. | |
| **Disclaimer:** *HRECOS is a research project. No warranty—either express or implied—is made for any information presented by this program.* | |
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| **Station details:**  The Mohawk River at Ilion water quality monitoring station contributes to the NY State Department of Environmental Conservation’s (NYSDEC) Statewide Water Quality Monitoring Program and will assist in the overall development of water management strategies to protect and improve New York's natural resources. Funding is provided by the NYSDEC Mohawk River Basin Program and the New York State Environmental Protection Fund.  The station is located on the shoreline of the Village of Ilion Marina and RV Park. A YSI EXO2 sonde, which is housed in a perforated aluminum pipe mounted to the concrete bulkhead wall, sits 9.8 feet below the top of the wall. Total water depth at this location is ~11 feet. Measurements are taken at 15-minute intervals. See Sensor Specifications section below for more information. Data is logged to a Campbell Scientific CR800 datalogger, then to the HRECOS database via cell modem hourly.  Water depth (relative to sonde) is measured by the sonde’s pressure sensor, which is naturally affected by variations in atmospheric (barometric) pressure. Therefore, station is equipped with a CS106 barometer which is used to correct for this phenomenon in real-time, using the following equation:  *Corrected Depth = Depth + ((1013- Barometric Pressure) \* .0102)*  *1Frankfort* buoy station *(discontinued)*: The previous iteration of this monitoring project was a YSI EMM68 buoy anchored ~1000 ft upstream of the Frankfort Marina in Frankfort, NY, which is about 3 miles upriver of the current location on the non-canal section of the Mohawk. The water depth at this location was ~17 ft. Sensors resided 1 m below the water surface. The parameters recorded were the same as those recorded at Ilion, except for water depth. The Frankfort buoy station was discontinued in July 2014 after multiple equipment failures because of damage from major flooding and debris collisions. | |
| **Special remarks / notes:**   * Sonde is pulled every winter when Mohawk River levels are drawn down.   *Frankfort buoy station notes (discontinued):*   * Turbidity was not recorded until 8/23/2013 due to programming issues. * 5/31 – 6/16/2013: Power supply issues caused data to be recorded only during daylight when solar panels were active. * Station was damaged and disabled because of major flooding between 6/10 – 6/15/2013. Station was retrieved for repair on 6/20. * 8/1/2013: Repaired station redeployed. Conductivity units now reporting correctly. Power supply issues continued. * 8/16/2013: Station retrieved for troubleshooting power supply issues. * 8/23/2013: Station redeployed and fully functional. * 10/14/2013: pH sensor failed and was not replaced for the remainder of 2013 deployment. * 11/5/2013: Buoy retrieved for winter season. * 5/6/2014: Buoy deployed for 2014 season. * July 2014: Transmission cut out and buoy damaged due to heavy flooding and floating debris in the river. Station pulled indefinitely. | |
| **Distribution terms:**  HRECOS requests that attribution be given whenever HRECOS material is reproduced and re-disseminated and the HRECOS Coordinator be notified prior to publications including any part of the data. Example citation: “Hudson River Environmental Conditions Observing System. 2013. Mohawk River at Ilion water quality monitoring station data. Accessed April 13th, 2013. <http://www.hrecos.org/>.” | |
| **Data Quality Assurance:**  Data collection and verification is verified quarterly according to the HRECOS Quality Assurance Project Plan, which is available at [www.hrecos.org.](http://www.hrecos.org) See following section for comment code definitions. | |
| **QAQC Comment Code definitions:**  General Errors  [GIM] instrument malfunction  [GIT] instrument recording error, recovered telemetry data  [GMC] no instrument deployed due to maintenance/calibration  [GPF] power failure/low battery  [GQR] rejected due to QAQC checks  [GSM] see metadata  [GIC] no instrument deployed due to ice  [GNF] deployment tube clogged/no flow  [GOW] out of water event  Sensor Errors  [SBO] blocked optic  [STF] catastrophic temperature sensor failure  [SCF] conductivity sensor failure  [SDF] depth port frozen  [SDP] DO membrane puncture  [SDO] DO suspect  [SIC] incorrect calibration/contaminated standard  [SNV] negative value  [SPC] post calibration out of range  [SSD] sensor drift  [SSM] sensor malfunction  [SOW] sensor out of water  [SSR] sensor removed (not deployed)  [STS] turbidity spike  [SWM] wiper malfunction/loss  Comments  (CAB) algal bloom  (CAF) acceptable calibration/accuracy error of sensor  (CAP) depth sensor in water, affected by atmospheric pressure  (CBF) biofouling  (CCU) cause unknown  (CDA) DO hypoxia < 28 percent saturation  (CDB) disturbed bottom  (CDF) data appear to fit conditions  (CFK) fish kill  (CIP) surface ice present at sample station  (CLT) low tide  (CMC) in field maintenance/cleaning  (CMD) mud in probe guard  (CND) new deployment begins  (CRE) significant rain event  (CSM) see metadata  (CTS) turbidity spike  (CVT) possible vandalism/tampering  (CWD) data collected at wrong depth  (CWE) significant weather event | |

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| Parameter | Units | Sensor type | Model | Range | Accuracy | Resolution | Response |
| **Acidity** | Hydrogen ion concentration (pH) | Glass combination electrode | 599702 | 0 – 14 units | ±0.1 pH units within ±10°C  of calibration temperature;  ±0.2 pH units for entire temp range | 0.01 units | T63<3 sec |
| **Conductivity** | millisiemens per cm (mS/cm) | 4-electrode nickel | 599870-01 | 0 – 200 mS/cm | 0-100 mS/cm: ±0.5% of  reading or 0.001 mS/cm,  whichever is greater;  100-200 mS/cm: ±1% of  reading | 0.0001 to 0.01 mS/cm  range-dependent | T63<2 sec |
| **Dissolved oxygen** | Air saturation (%)  ¾¾¾¾  mg/L | Optical, luminescence lifetime ¾¾¾¾  Calculated | 599100-01 | 0 – 500%  ¾¾¾¾  0 – 50 mg/L | 0 – 200%: ±1%  200 – 500%: ±5%  ¾¾¾¾  0 – 20 mg/L: ±0.1 mg/L or 1% (whichever is greater);  20 – 50 mg/L: ±-5% | 0.1%  ¾¾¾¾  0.01 mg/L | T63<5 sec |
| **Turbidity** | Formazin Nephelometric Units (FNU) | Optical, 90° scatter | 599101-01 | 0 – 4000 FNU | 0-999 FNU: 0.3 FNU or  ±2% of reading, whichever is greater; 1000-4000 FNU: ±5% of reading | 0-999 FNU: 0.01 FNU  1000-4000 FNU: 0.1 FNU | T63<2 sec |
| **Water temperature** | Celsius (°C) | Thermistor | 599870-01 | -5 to +50°C | -5 to 35°C: ±0.01°C  35 to 50°C: ±0.05°C | 0.001°C | T63<1 sec |
| **Water**  **depth** | Meters (m) | Non-vented (depth auto-corrected) | EXO2, integral | 0 to 100 m | ±0.04% FS (±0.04 m) | 0.001 m  (auto-ranging) | T63<2 sec |

**Table 1. YSI EXO2 sensor specifications. Note that conductivity is measured in millisiemens, but data are converted to microsiemens.**