

## Water Quality Metadata

Last updated: 12/8/2025

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## Station Overview

Location: Marist College, Poughkeepsie ([41.7206, -73.9388](#))

Data collection period: 01/10/2014- present

Parameters: pH, dissolved oxygen, specific conductance, turbidity, salinity, water temperature, chlorophyll, phycocyanin

## Contacts

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## Station Description

A YSI 6600 Sonde was housed in a steel tube (replaced with stainless on 10/26/16) affixed to the south side of the concrete dock at the Marist boathouse. The sonde is approximately 1 m off the bottom in ~ 4 m of water. The sonde records the following variables every 15\* minutes: All data are recorded by a CR1000 datalogger.

There used to be a co-located sonde measuring water that was continuously pumped from further offshore. This system failed in 2019, but data are still available at [hrecos.org](http://hrecos.org)

\*The sampling rate for this station was 6 minutes until it was changed to 15 minutes on 2014-03-28 07:15:00. The lower rate was determined to be sufficient for this station.

On 5/29/2019 the YSI 6600-series sonde was replaced with a YSI EXO2 series sonde.

## Special Remarks

Date	Remark
3/28/2014	Sampling rate changed from 6 minutes to 15 minutes
10/26/2016	Sonde deployment tube replaced with a stainless steel model
5/29/2019	6600 sonde was replaced with a YSI EXO2 sonde

<b>August-October 2025</b>	<b>Prolonged drought conditions across New York State led to very high specific conductance and salinity levels at this station. There was also a confirmed harmful algal bloom (HAB) at the same time.</b>
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### 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. 2012. Albany Hydrologic Station data. Accessed April 13th, 2016. <http://www.hrecos.org/>.”

### Data Quality Assurance

Data collection and verification have been performed on all parameters since the establishment of this station according to the HRECOS Quality Assurance Project Plan(s), which are available at [www.hrecos.org](http://www.hrecos.org)

### Code Definitions

#### Parameters

WTMP	Water temperature	Degrees Celsius
SPCO	Specific conductance	uS/cm
SALT	Salinity	See remarks below
PH	pH	
TURB	Turbidity	See remarks below
DOPC	Dissolved oxygen saturation	Percent (%)
DOCONC	Dissolved oxygen concentration	mg/L
DEPTH	Depth above instrument	m
CHLA	Chlorophyll	RFU
PHYCO	Phycocyanin	RFU

#### Flag code definitions:

A	Accepted data
P	Provisional data
S	Suspect data, consult comment codes
R	Rejected data, consult comment codes
C	Corrected data, consult comment codes

#### Comment code definitions:

##### General Errors

GIM	Instrument malfunction
GIT	Instrument recording error, recovered telemetry data
GMC	No instrument deployed due to maintenance or calibration
GPF	Power failure

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
<u>Sensor Errors</u>	
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 or 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 for deployment
STS	Turbidity spike
SWM	Wiper malfunction or loss

Other 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
CDB	Disturbed bottom
CDF	Data appear to fit conditions
CFK	Fish fill
CIP	Surface ice present
CLT	Low tide
CMC	In field cleaning and maintenance
CMD	Mud in probe guard
CND	New deployment
CRE	Significant rain event
CSM	See metadata
CTS	Turbidity spike
CVT	Possible vandalism
CWD	Data collected at wrong depth
CWE	Significant weather event

**YSI EXO2 Sensor Specifications**

Consult description and remarks for upgrade dates.

Parameter: Temperature  
Units: Celsius (C)  
Sensor Type: Thermistor  
Model#: 599870-01  
Range: -5 to 50 C  
Accuracy: -5 to 35: +/- 0.01, 35 to 50: +/- .005  
Resolution: 0.01 C

Parameter: Specific conductance  
Units: mS/cm or uS/cm  
Sensor Type: 4-electrode cell with autoranging  
Model#: 599870-01  
Range: 0-200 mS/cm  
Accuracy: 0 to 100: +/- 0.5% of reading or 0.001 mS/cm; 100 to 200: +/- 1% of reading  
Resolution: 0.001 mS/cm to 0.1 mS/cm

Parameter: Salinity  
Units: practical salinity units (psu)/parts per thousand (ppt)  
Sensor Type: Calculated from conductivity and temperature  
Range: 0 to 70 psu  
Accuracy: +/- 1.0% of reading pr 0.1 ppt, whichever is greater  
Resolution: 0.01 psu

Parameter: Dissolved Oxygen % saturation  
Sensor Type: Optical probe w/ mechanical cleaning  
Model#: 599100-01  
Range: 0 to 500% air saturation  
Accuracy: 0-200% air saturation: +/- 1% of the reading or 1% air saturation, whichever is greater  
200-500% air saturation: +/- 5% or reading  
Resolution: 0.1% air saturation

Parameter: Dissolved Oxygen mg/L (Calculated from % air saturation, temperature, and salinity)  
Units: milligrams/Liter (mg/L)  
Sensor Type: Optical probe w/ mechanical cleaning  
Model#: 599100-01  
Range: 0 to 50 mg/L  
Accuracy: 0-20 mg/L: +/-0.1 mg/l or 1% of the reading, whichever is greater  
20 to 50 mg/L: +/- 5% of the reading  
Resolution: 0.01 mg/L

Parameter: pH  
Units: pH units  
Sensor Type: Glass combination electrode  
Model#: 599701 (guarded) or 599702 (wiped)

Range: 0 to 14 units

Accuracy: +/- 0.01 units within +/- 10° of calibration temperature, +/- 0.02 units for entire temperature range

Resolution: 0.01 units

Parameter: Turbidity

Units: formazin nephelometric units (FNU)

Sensor Type: Optical, 90-degree scatter

Model#: 599101-01

Range: 0 to 4000 FNU

Accuracy: 0 to 999 FNU: 0.3 FNU or +/-2% of reading (whichever is greater); 1000 to 4000 FNU +/- 5% of reading

Resolution: 0 to 999 FNU: 0.01 FNU, 1000 to 4000 FNU: 0.1 FNU

Parameter: Chlorophyll

Units: micrograms/Liter, RFU

Sensor Type: Optical probe

Model#: 599102-01

Range: 0 to 400 ug/Liter; 0 to 100 RFU

Accuracy: Dependent on methodology

Resolution: 0.1 ug/L chl a, 0.1% RFU

Parameter: Phycocyanin

Units: micrograms/Liter, RFU

Sensor Type: Optical probe

Model#: 599102-01

Range: 0 to 100 ug/Liter; 0 to 100 RFU

Accuracy: Dependent on methodology

Resolution: 0.1 ug/L PC, 0.1% RFU

### **Remarks on Sensor Specifications and Units**

Consult description and remarks for upgrade dates.

#### *Specific conductance:*

Historically, specific conductance data from HRECOS sites was reported in millisiemens/cm (mS/cm). However, beginning in 2019, reporting switched to microsiemens/cm (uS/cm). All data files available on hrecos.org have been converted to reflect this change.

#### *Salinity:*

The 6600 series sondes report salinity in parts per thousand (ppt) units, the EXO sondes report practical salinity units (psu).

#### *Turbidity:*

The 6600 series sondes report turbidity in nephelometric turbidity units (NTU), the EXO sondes use formazin nephelometric units (FNU).

*Chlorophyll and Phycocyanin Disclaimer:*

YSI chlorophyll sensors (6025 or 599102-01) are designed to serve as a proxy for chlorophyll concentrations in the field for monitoring applications and complement traditional lab extraction methods; therefore, there are accuracy limitations associated with the data that are detailed in the YSI manual.

**Remarks on Data Correction**

From May 2019 to March 2026, data were collected and reviewed by the United States Geological Survey, according to their standard operating procedure which is outlined in the following document:

Wagner, R.J., Boulger, R.W., Jr., Oblinger, C.J., and Smith, B.A., 2006, Guidelines and standard procedures for continuous water-quality monitors—Station operation, record computation, and data reporting: U.S. Geological Survey Techniques and Methods 1–D3, 51 p.

<https://pubs.usgs.gov/publication/tm1D3>

Part of data review includes correcting for sensor drift if it occurred during deployment. Per USGS protocol, provisional data are flagged as P and once reviewed they are flagged as A, even if data correction occurred.