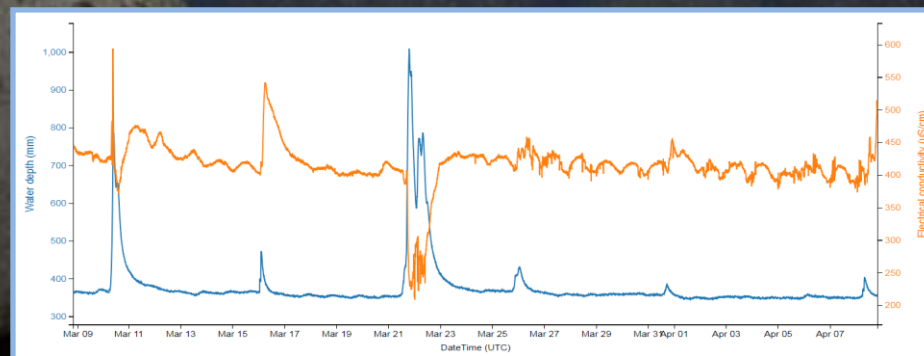
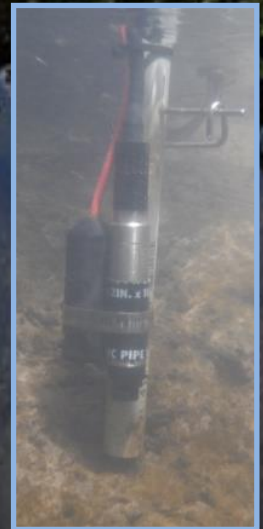
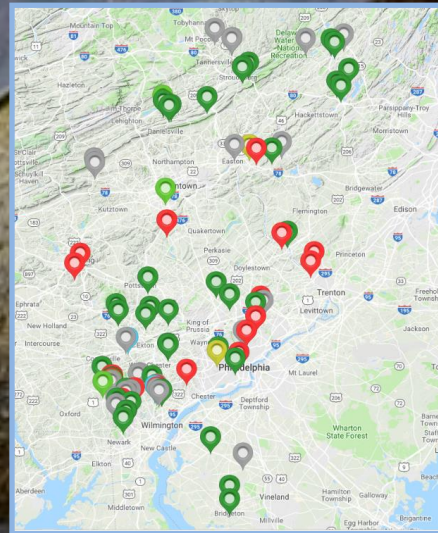
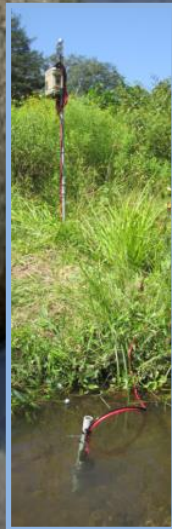
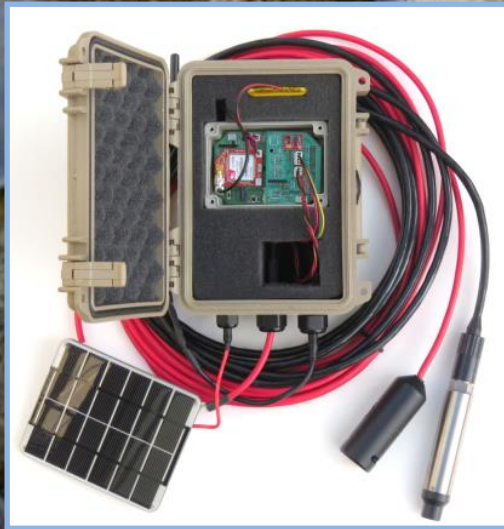


# EnviroDIY Sensor Station Management Workshop

## *Maintenance and Quality Control*

*August 10, 2019 at Cherry Valley National Wildlife Refuge  
(2138 Croasdale Road, Stroudsburg, PA, 18360)*

Facilitators: David Bressler, Paul Wilson, Carol Armstrong, Christa Reeves, Levi Morris, Ben Laubach



# Agenda

- 8:45-9:15 – Welcome, refreshments, light breakfast
- 9:15-10:00 – Introduction and overview for the day
- 10:00-10:15 – Break and get ready to go to sites
- 10:15-12:15 – On-site training at two Cherry Creek sensor stations, break into two groups
- 12:15-1:00 – Lunch
- 1:00-1:45 – Online data entry
- 1:45-3:00 – Usage of Monitor My Watershed
- 3:00-3:30 – Overflow, discussions

**\*Everyone does  
everything, work in pairs**

# Intention for workshop

- **Overview of EnviroDIY sensor stations**
- **Instruction on basic Maintenance and QC**
  - Master Watershed Stewards – lunch and after – match with stations, define roles
- **Data and meta-data**
  - Online Field Visit Data sheet data entry
  - Usage of Monitor My Watershed
- **Introduce resources, network, dialogue**

# Stroud support

- **David Bressler**, Stroud – main contact
- **Shannon Hicks**, Stroud – high level technical support
- **Rachel Johnson**, Stroud – technical support, field assistance, small workshop facilitation, field assistance, 1:1 training
- **Matt Gisondi**, Stroud – mentoring, data analysis (rating curves, loads), field assistance, 1:1 training
- **Christa Reeves**, Stroud/Musconetcong WA – mentoring, regional assistance, northern Delaware Basin
- **Carol Armstrong** – PSU Master Watershed Stewards – mentoring, citizen science volunteer assistance, field maintenance and storm sampling, PSU Master Watershed Stewards mentor
- **George Seeds** – PSU Master Watershed Stewards – mentoring, citizen science volunteer assistance, field maintenance and storm sampling, PSU Master Watershed Stewards mentor
- **Dave Arscott** (ex dir), **John Jackson** (senior sci), and **Matt Ehrhart** (dir of restoration), Stroud – original project designers

# Context

- Delaware River Watershed Initiative (DRWI), William Penn Foundation
- Citizen Science, Stroud Center facilitation of continuous monitoring using EnviroDIY Mayfly sensor stations
  - ~70 sensor stations deployed across Delaware River Basin
    - Stations owned by watershed groups and schools – grants and private purchase
    - Conductivity, Temperature, Depth (CTD) and Turbidity...and a few with Dissolved Oxygen
    - Solar powered
    - Logging data every 5 minutes
    - Some online, always log to microSD card on-site



# EnviroDIY stations in DRWI Context

- **Primary goal with sensor stations:** groups use them for their own purposes – Stroud supports these efforts
- **Secondary goal:** build basin-wide data set for broadscale analysis – by Stroud and anyone else (publicly available via Monitor My Watershed)

# EnviroDIY stations in DRWI Context

- Finished with first WPF grant on June 30, 2018 – 60 stations granted to watershed groups, schools, and universities in Delaware Basin
- Next round through 2020 – Stroud support
  - Some grants
  - Private sales
    - Only selling in Delaware Basin to groups that are interested in participating in the collaborative effort
    - Completing data sheets, doing QC, consulting w Stroud on issues, sharing data

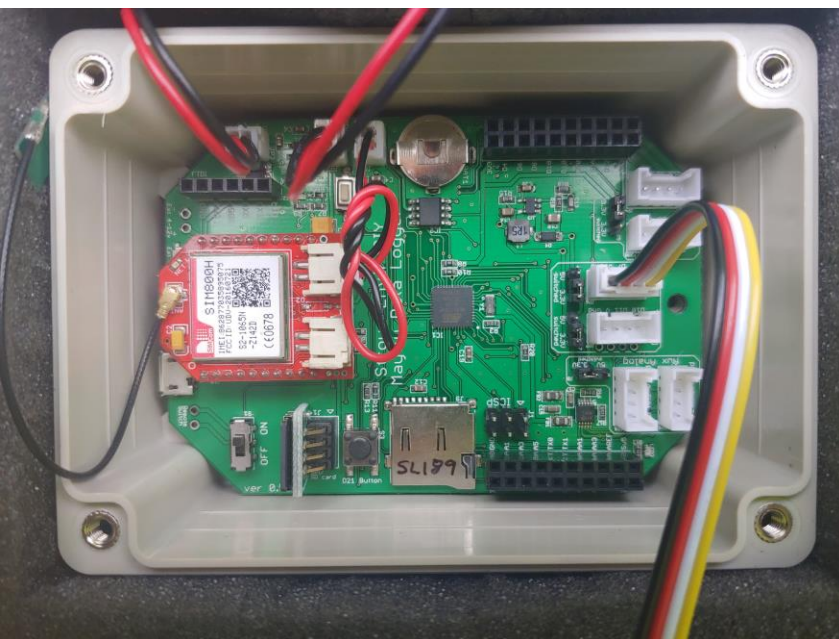


# Context

- Opportunities for committed volunteers to get involved – Master Watershed Stewards and others
  - Stations take more time to maintain than a lot of groups realized
    - \*Opportunity to make significant contributions to the integrity and viability of the data set
    - This is functional and logistical work, not outreach, not engagement

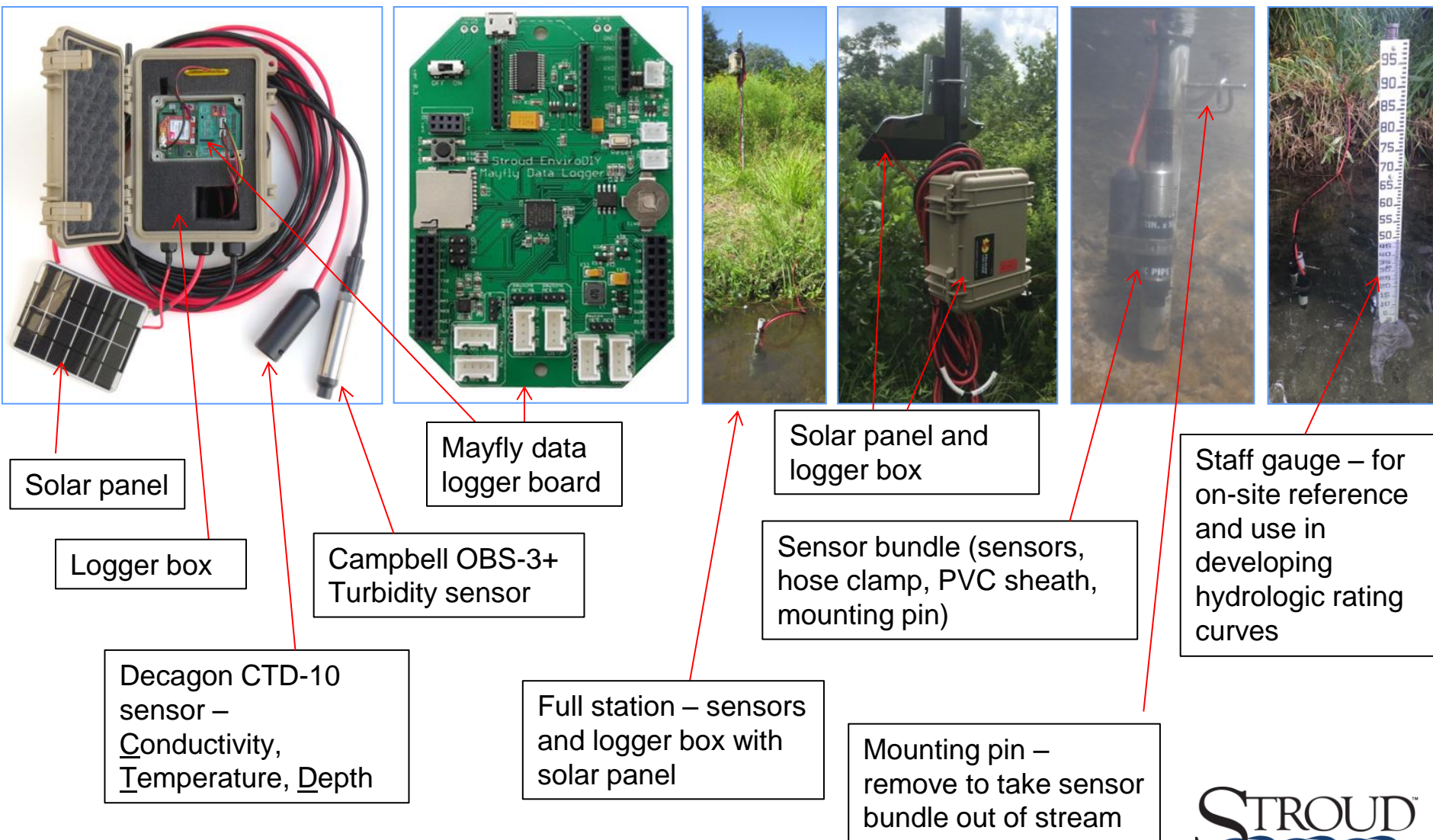








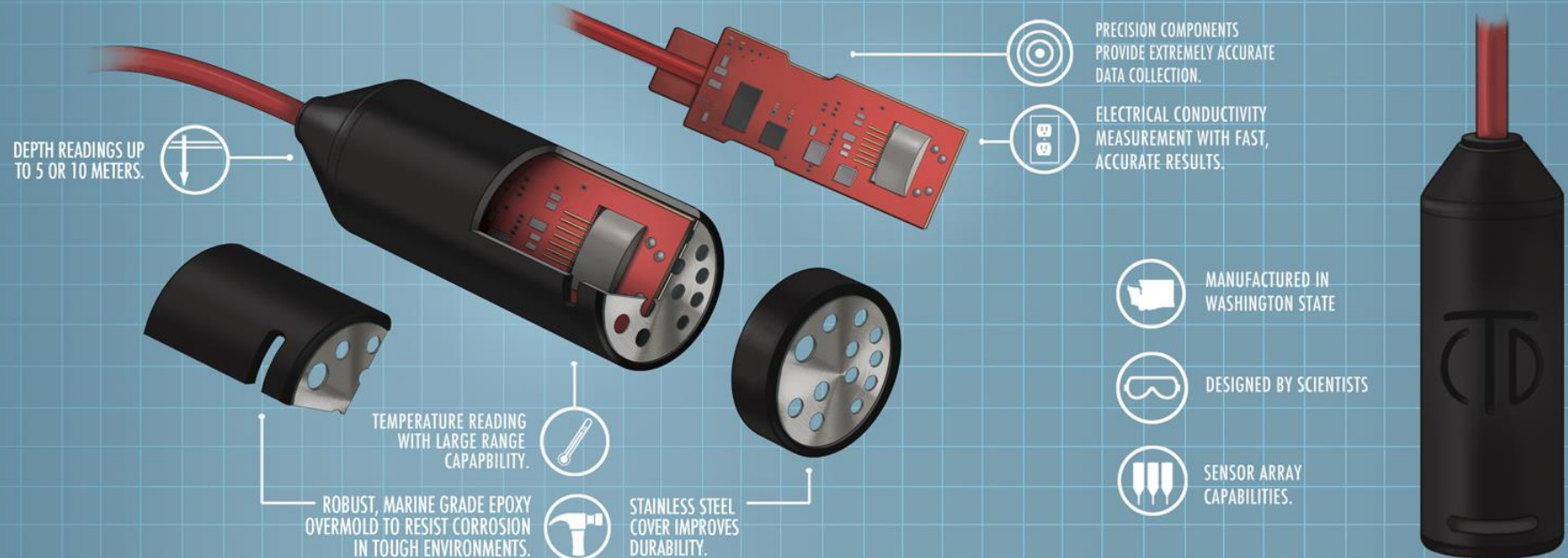
# Overview



# Overview

Decagon/ Meter Group CTD-10 Sensor Electrical Conductivity Temperature Depth  
<http://www.decagon.com/en/hydrology/water-level-temperature-electrical-conductivity/ctd-10-sensor-electrical-conductivity-temperature-depth/>

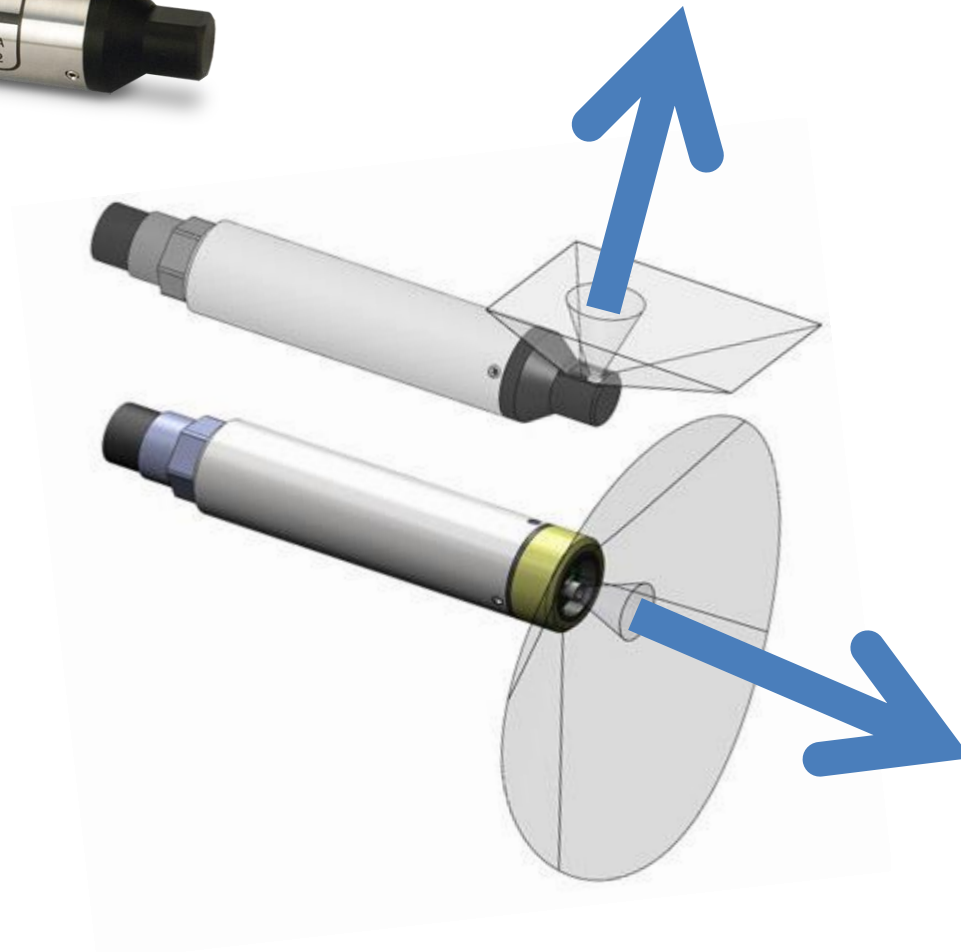
## CTD CONDUCTIVITY • TEMPERATURE • DEPTH



# Overview

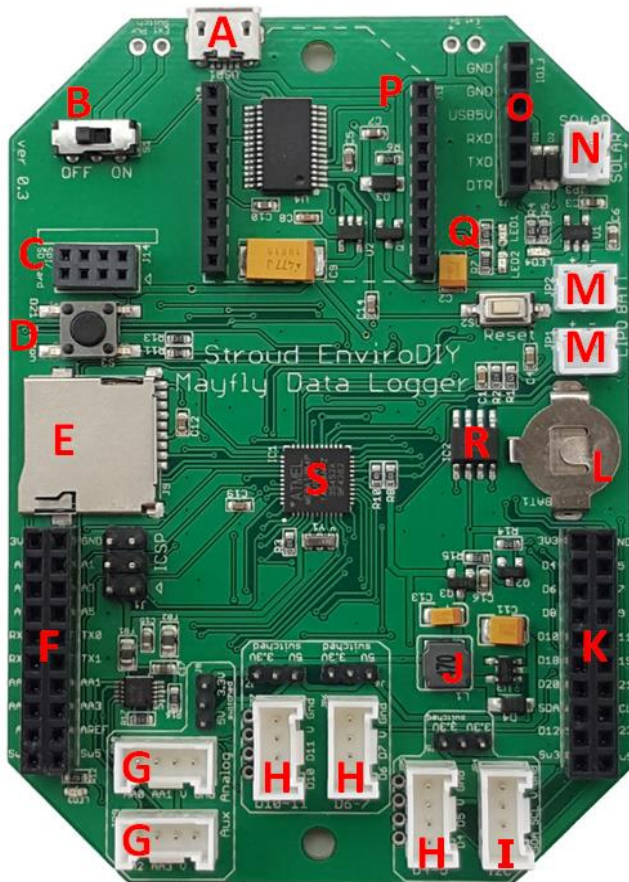
Campbell Scientific's OBS-3+ Turbidity Sensor

<https://www.campbellsci.com/obs-3plus>





# Overview

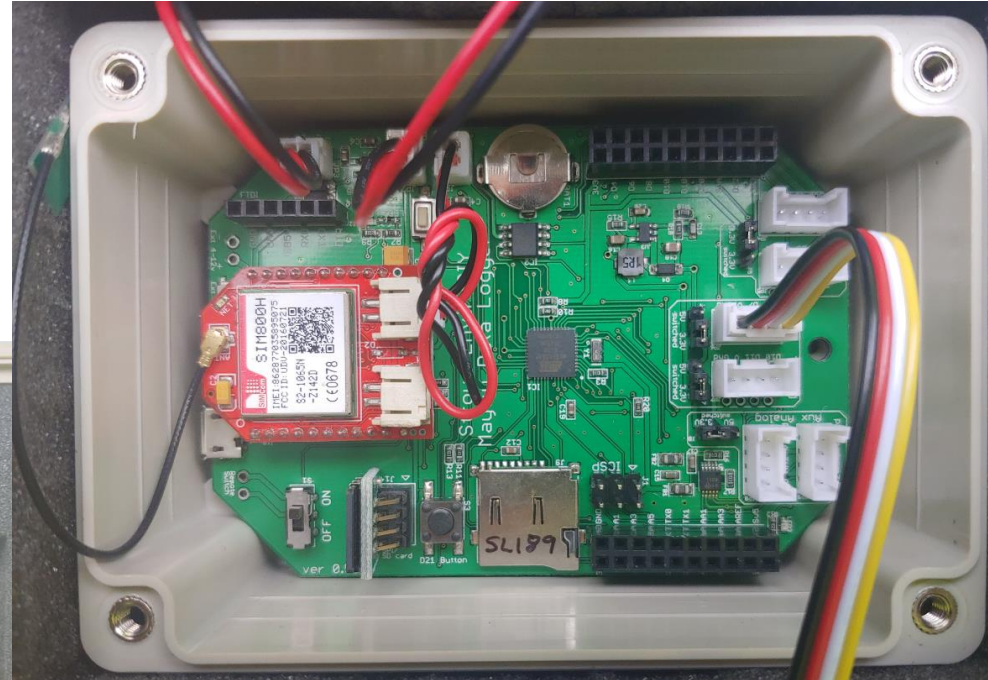
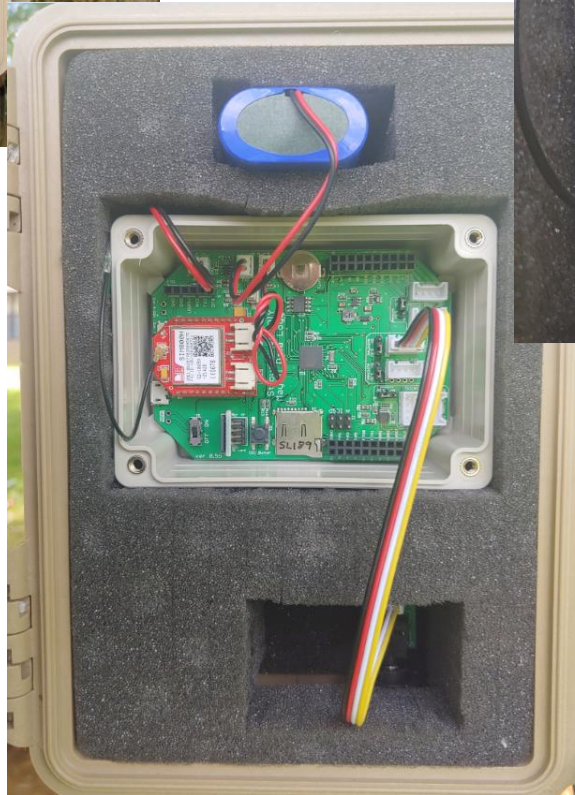


GPRSbee rev.6 cell wireless module  
(2G cell module)

## Features of the Mayfly Data Logger

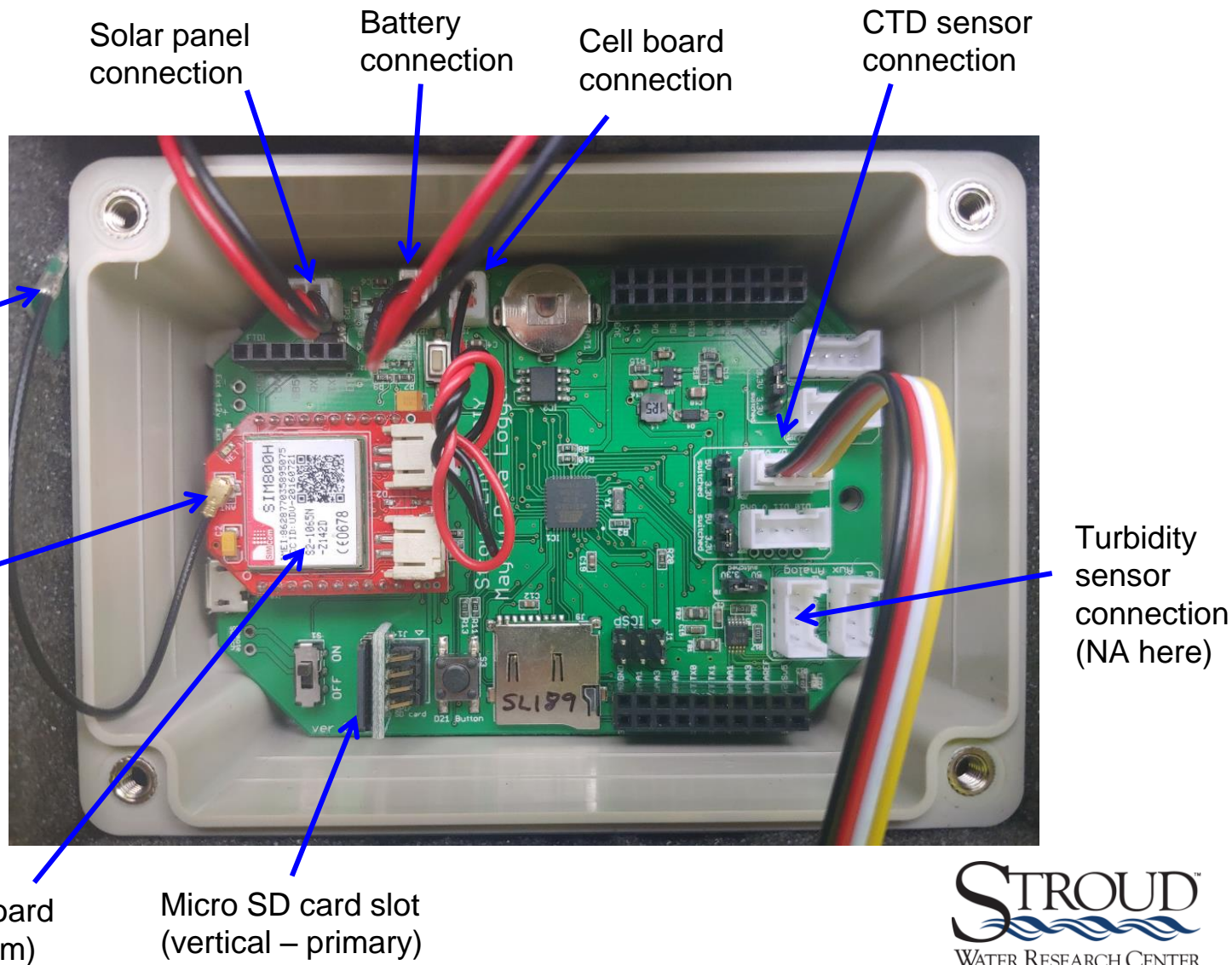
|   |   |
|---|---|
| A | <u>MicroUSB port</u> – connect a standard <u>MicroUSB</u> cable to a computer for programming the Mayfly using the Arduino software   |
| B | Power switch – turns the Mayfly board on and off  |
| C | <u>microSD/SPI connector</u> – socket for vertical <u>microSD</u> memory card adapter board or other SPI devices  |
| D | Pushbutton – connected to pin D21 for user-defined input  |
| E | <u>microSD card socket</u> – socket for storing data on a standard <u>microSD</u> memory card   |
| F | <u>Analog pin header</u> – access to the Mayfly's power, ground, & analog pins, and also the four Auxiliary 16-bit Analog-to-Digital converter pins                                       |
| G | <u>Auxiliary ADC Grove connectors</u> – pairs of Auxiliary Analog pins along with ground and power (3.3v or 5V)   |
| H | <u>Digital pin Grove connectors</u> – pairs of digital pins along with ground and power (3.3v or 5v), for connecting sensors and Grove accessories  |
| I | <u>I<sup>2</sup>C port Grove connector</u> – connection for any devices that use the I <sup>2</sup> C protocol  |
| J | 5-volt boost converter – generates 5v for powering external sensors   |
| K | <u>Digital pin header</u> – access to the Mayfly's power, ground, & digital pins  |
| L | Clock battery – socket for CR1220 lithium battery to keep clock chip (R) running when no other power is connected to Mayfly   |
| M | <u>LiPo battery connectors</u> – JST socket for connecting <u>LithiumPolymer (LiPo)</u> rechargeable battery. Additional socket is for providing power to high-current peripheral devices |
| N | <u>Solar panel connector</u> – JST socket for connecting 6v solar panel for charging the <u>LiPo</u> battery  |
| O | <u>FTDI programing header</u> – alternative port for programming board using an external FTDI adapter instead of using the Mayfly <u>microUSB</u> port                                    |
| P | <u>Bee module socket</u> – connection port for various telemetry modules that use the Bee footprint (mesh radio, <u>WiFi</u> , cellular)  |
| Q | Red & Green LEDs – LEDs for providing visual feedback, connected to pins D8 (green) and D9 (red)  |
| R | <u>Real-time clock</u> – DS3231 clock module with on-board temperature sensor, retains the date and time after initial programming, requires battery (L)                                  |
| S | Processor – ATmega1284p microprocessor  |

# Overview





# Overview





# Overview



Mayfly Data Logger

|    | A                                     | B         | C          | D         | E         | F            | G             | H             | I            | J             |  |
|----|---------------------------------------|-----------|------------|-----------|-----------|--------------|---------------|---------------|--------------|---------------|--|
| 1  | SL002 - Mayfly CTD & Turbidity Logger |           |            |           |           |              |               |               |              |               |  |
| 2  | DateTime_EST                          | TZ-Offset | Loggertime | BoardTemp | Battery_V | CTD_Depth_mm | CTD_temp_DegC | CTD_cond_dS/m | Turb_low_NTU | Turb_high_NTU |  |
| 3  | 10/19/2017 17:05                      | -5        | 561747900  | 15.5      | 3.56      | 77.3         | 14.6          | 229           | 55.2         | 56.6          |  |
| 4  | 10/19/2017 17:10                      | -5        | 561748200  | 15.5      | 3.67      | 78           | 14.5          | 229           | 57.8         | 59.4          |  |
| 5  | 10/19/2017 17:15                      | -5        | 561748500  | 15.5      | 3.71      | 77.3         | 14.4          | 229           | 54           | 55.3          |  |
| 6  | 10/19/2017 17:20                      | -5        | 561748800  | 15.5      | 3.78      | 76.7         | 14.3          | 230           | 54.3         | 55.8          |  |
| 7  | 10/19/2017 17:25                      | -5        | 561749100  | 15.3      | 3.81      | 77           | 14.3          | 230           | 55.2         | 56.6          |  |
| 8  | 10/19/2017 17:30                      | -5        | 561749400  | 15.3      | 3.84      | 77.7         | 14.2          | 230.3         | 49.9         | 51.2          |  |
| 9  | 10/19/2017 17:35                      | -5        | 561749700  | 15        | 3.87      | 77           | 14.2          | 229.3         | 56.1         | 57.7          |  |
| 10 | 10/19/2017 17:40                      | -5        | 561750000  | 15        | 3.9       | 79           | 14.1          | 231.3         | 54.7         | 56.3          |  |
| 11 | 10/19/2017 17:45                      | -5        | 561750300  | 14.8      | 3.91      | 78.7         | 14            | 229.3         | 53.6         | 55            |  |
| 12 | 10/19/2017 17:50                      | -5        | 561750600  | 14.8      | 3.93      | 77.7         | 14            | 229.3         | 52.9         | 54.4          |  |
| 13 | 10/19/2017 17:55                      | -5        | 561750900  | 14.5      | 3.93      | 78           | 14            | 229.7         | 51.9         | 53.3          |  |
| 14 | 10/19/2017 18:00                      | -5        | 561751200  | 14.3      | 3.93      | 77.3         | 13.9          | 231           | 55.3         | 56.7          |  |
| 15 | 10/19/2017 18:05                      | -5        | 561751500  | 14.3      | 3.94      | 77           | 13.9          | 229.7         | 54.9         | 56.4          |  |
| 16 | 10/19/2017 18:10                      | -5        | 561751800  | 14        | 3.94      | 77           | 13.7          | 229.7         | 57           | 58.5          |  |
| 17 | 10/19/2017 18:15                      | -5        | 561752100  | 14        | 3.96      | 78.3         | 13.7          | 230           | 54.9         | 56.2          |  |
| 18 | 10/19/2017 18:20                      | -5        | 561752400  | 13.8      | 3.96      | 76.3         | 13.6          | 229.3         | 53.2         | 54.7          |  |
| 19 | 10/19/2017 18:25                      | -5        | 561752700  | 13.8      | 3.96      | 77           | 13.6          | 229.3         | 53.2         | 54.6          |  |
| 20 | 10/19/2017 18:30                      | -5        | 561753000  | 13.5      | 3.96      | 77           | 13.6          | 230           | 51.9         | 53.2          |  |
| 21 | 10/19/2017 18:35                      | -5        | 561753300  | 13.5      | 3.97      | 77           | 13.5          | 228.7         | 51.3         | 52.6          |  |
| 22 | 10/19/2017 18:40                      | -5        | 561753600  | 13.3      | 3.97      | 77.7         | 13.5          | 229           | 52.6         | 54            |  |
| 23 | 10/19/2017 18:45                      | -5        | 561753900  | 13.3      | 3.97      | 78           | 13.4          | 230.3         | 49.5         | 50.8          |  |
| 24 | 10/19/2017 18:50                      | -5        | 561754200  | 13        | 3.97      | 78.3         | 13.4          | 229.7         | 49.4         | 50.7          |  |
| 25 | 10/19/2017 18:55                      | -5        | 561754500  | 13        | 3.97      | 76.3         | 13.3          | 229.7         | 52.5         | 53.8          |  |
| 26 | 10/19/2017 19:00                      | -5        | 561754800  | 12.8      | 3.97      | 77           | 13.3          | 229           | 46.8         | 48            |  |
| 27 | 10/19/2017 19:05                      | -5        | 561755100  | 12.8      | 3.97      | 77.7         | 13.3          | 228.3         | 46.4         | 47.6          |  |
| 28 | 10/19/2017 19:10                      | -5        | 561755400  | 12.5      | 3.97      | 77           | 13.2          | 230           | 45           | 46.1          |  |
| 29 | 10/19/2017 19:15                      | -5        | 561755700  | 12.5      | 3.97      | 78           | 13.2          | 230           | 47           | 48.1          |  |



Meter Environment  
Hydros 21 CTD sensor



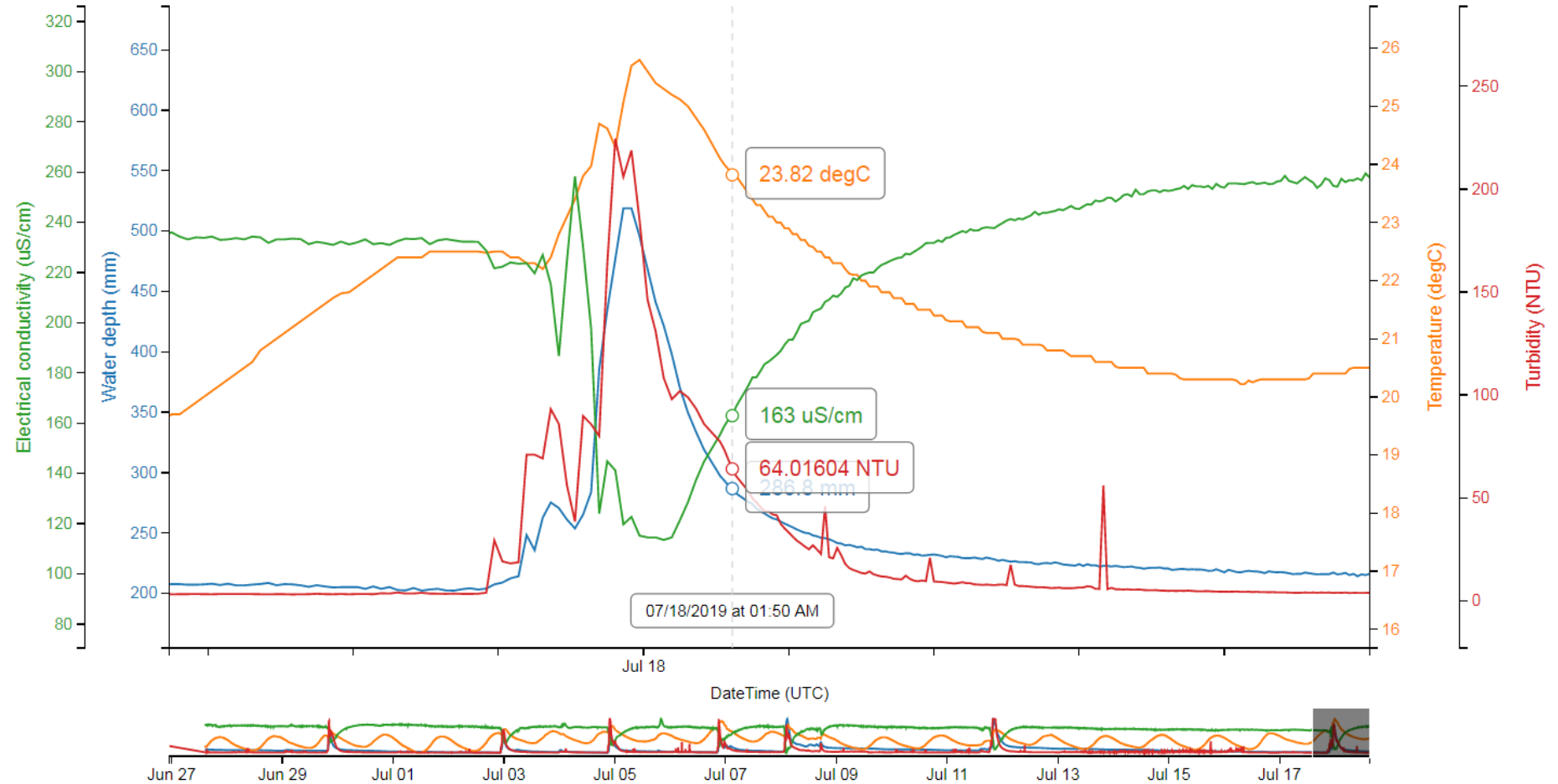
Campbell OBS3+  
Turbidity sensor

# Continuous data

|     | A              | B          | C              | D                        | E                       | F                       | G                        | H                        | I                         | J                         | K                       | L                               |
|-----|----------------|------------|----------------|--------------------------|-------------------------|-------------------------|--------------------------|--------------------------|---------------------------|---------------------------|-------------------------|---------------------------------|
| 1   | DateTime       | TimeOffset | DateTimeUTC    | Decagon_CT<br>D-10_Depth | Decagon_CTD-<br>10_Temp | Decagon_CT<br>D-10_Cond | Campbell_O<br>BS3_Turb-1 | Campbell_O<br>BS3_Turb-2 | EnviroDIY_M<br>ayfly_Temp | EnviroDIY_<br>Mayfly_Batt | Digi_Cellular_<br>_RSSI | Digi_Cellular_<br>SignalPercent |
| 251 | 8/7/2019 18:55 | -5:00      | 8/7/2019 23:55 | 270                      | 22.3                    | 167                     | 32.12892                 | 32.9725                  | 21.5                      | 3.699                     | -69                     | 71                              |
| 252 | 8/7/2019 19:10 | -5:00      | 8/8/2019 0:10  | 260.2                    | 22.2                    | 169.8                   | 29.70875                 | 30.40923                 | 21.5                      | 3.699                     | -69                     | 71                              |
| 253 | 8/7/2019 19:25 | -5:00      | 8/8/2019 0:25  | 253.8                    | 22.2                    | 171.3                   | 27.70976                 | 28.3512                  | 21.5                      | 3.699                     | -45                     | 109                             |
| 254 | 8/7/2019 19:45 | -5:00      | 8/8/2019 0:45  | 245.5                    | 22.1                    | 175.3                   | 25.13705                 | 25.65314                 | 21.5                      | 3.699                     | -45                     | 109                             |
| 255 | 8/7/2019 20:10 | -5:00      | 8/8/2019 1:10  | 238.3                    | 22                      | 177.2                   | 20.70443                 | 21.00141                 | 21.5                      | 3.699                     | -45                     | 109                             |
| 256 | 8/7/2019 20:40 | -5:00      | 8/8/2019 1:40  | 230.5                    | 21.9                    | 181.2                   | 21.57225                 | 21.92886                 | 21.25                     | 3.699                     | -45                     | 109                             |
| 257 | 8/7/2019 21:25 | -5:00      | 8/8/2019 2:25  | 220.2                    | 21.7                    | 186.7                   | 14.01436                 | 13.9662                  | 21                        | 3.699                     | -45                     | 109                             |
| 258 | 8/8/2019 7:40  | -5:00      | 8/8/2019 12:40 | 192.5                    | 20.6                    | 224.7                   | 4.25569                  | 3.6179                   | 21.5                      | 3.699                     | -69                     | 71                              |
| 259 | 8/8/2019 8:00  | -5:00      | 8/8/2019 13:00 | 193.3                    | 20.6                    | 226                     | 4.13347                  | 3.49766                  | 22                        | 3.699                     | -81                     | 51                              |
| 260 | 8/8/2019 8:15  | -5:00      | 8/8/2019 13:15 | 191.5                    | 20.7                    | 225                     | 3.99551                  | 3.35343                  | 22.25                     | 3.699                     | -81                     | 51                              |
| 261 | 8/8/2019 8:30  | -5:00      | 8/8/2019 13:30 | 191.3                    | 20.7                    | 225.8                   | 3.91749                  | 3.28131                  | 22.25                     | 3.699                     | -81                     | 51                              |
| 262 | 8/8/2019 8:55  | -5:00      | 8/8/2019 13:55 | 191.5                    | 20.8                    | 226.5                   | 3.86323                  | 3.22363                  | 22.5                      | 3.699                     | -45                     | 109                             |
| 263 | 8/8/2019 9:10  | -5:00      | 8/8/2019 14:10 | 191.5                    | 20.9                    | 225                     | 3.80446                  | 3.16595                  | 22.75                     | 3.699                     | -69                     | 71                              |
| 264 | 8/8/2019 10:25 | -5:00      | 8/8/2019 15:25 | 190.5                    | 21.4                    | 226.7                   | 3.57159                  | 2.93041                  | 23.75                     | 3.699                     | -69                     | 71                              |
| 265 | 8/8/2019 10:40 | -5:00      | 8/8/2019 15:40 | 191.5                    | 21.5                    | 227                     | 3.5501                   | 2.89195                  | 24.25                     | 3.699                     | -69                     | 71                              |
| 266 | 8/8/2019 10:55 | -5:00      | 8/8/2019 15:55 | 190.8                    | 21.6                    | 227.3                   | 3.83024                  | 3.17602                  | 24.25                     | 3.699                     | -81                     | 51                              |
| 267 | 8/8/2019 11:10 | -5:00      | 8/8/2019 16:10 | 191                      | 21.8                    | 228.7                   | 3.40657                  | 2.74776                  | 24.75                     | 3.715                     | -69                     | 71                              |
| 268 | 8/8/2019 11:15 | -5:00      | 8/8/2019 16:15 | 190                      | 21.8                    | 227.8                   | 3.48005                  | 2.81505                  | 25                        | 3.715                     | -69                     | 71                              |
| 269 | 8/8/2019 11:20 | -5:00      | 8/8/2019 16:20 | 189.8                    | 21.9                    | 227.2                   | 3.69035                  | 3.04581                  | 25                        | 3.699                     | -45                     | 109                             |
| 270 | 8/8/2019 11:35 | -5:00      | 8/8/2019 16:35 | 189.5                    | 22                      | 227.5                   | 3.61113                  | 2.96886                  | 25.5                      | 3.715                     | -69                     | 71                              |
| 271 | 8/8/2019 11:40 | -5:00      | 8/8/2019 16:40 | 189.7                    | 22.1                    | 226.5                   | 3.68707                  | 3.05549                  | 25.75                     | 3.715                     | -45                     | 109                             |
| 272 | 8/8/2019 11:45 | -5:00      | 8/8/2019 16:45 | 189.7                    | 22.1                    | 227.5                   | 3.49705                  | 2.83431                  | 25.75                     | 3.715                     | -69                     | 71                              |
| 273 | 8/8/2019 11:50 | -5:00      | 8/8/2019 16:50 | 189.5                    | 22.17                   | 225.2                   | 4.33779                  | 3.71126                  | 26                        | 3.715                     | -69                     | 71                              |
| 274 | 8/8/2019 11:55 | -5:00      | 8/8/2019 16:55 | 188.8                    | 22.2                    | 227.2                   | 3.51507                  | 2.85831                  | 26.25                     | 3.715                     | -69                     | 71                              |
| 275 | 8/8/2019 12:00 | -5:00      | 8/8/2019 17:00 | 189.2                    | 22.3                    | 228.3                   | 3.55575                  | 2.90156                  | 26.25                     | 3.699                     | -69                     | 71                              |
| 276 | 8/8/2019 12:15 | -5:00      | 8/8/2019 17:15 | 189.7                    | 22.4                    | 227.7                   | 4.25791                  | 3.65154                  | 26.25                     | 3.715                     | -45                     | 109                             |
| 277 | 8/8/2019 12:20 | -5:00      | 8/8/2019 17:20 | 188.5                    | 22.5                    | 226.5                   | 4.20698                  | 3.59382                  | 26.5                      | 3.73                      | -45                     | 109                             |
| 278 | 8/8/2019 12:25 | -5:00      | 8/8/2019 17:25 | 188.2                    | 22.5                    | 227                     | 4.14251                  | 3.53132                  | 26.75                     | 3.715                     | -45                     | 109                             |
| 279 | 8/8/2019 12:30 | -5:00      | 8/8/2019 17:30 | 188.8                    | 22.5                    | 226.8                   | 4.1346                   | 3.5217                   | 27                        | 3.715                     | -81                     | 51                              |

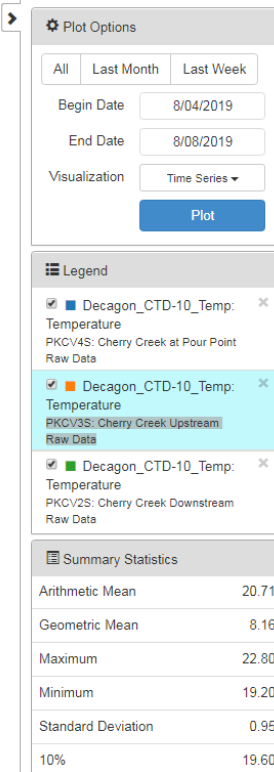
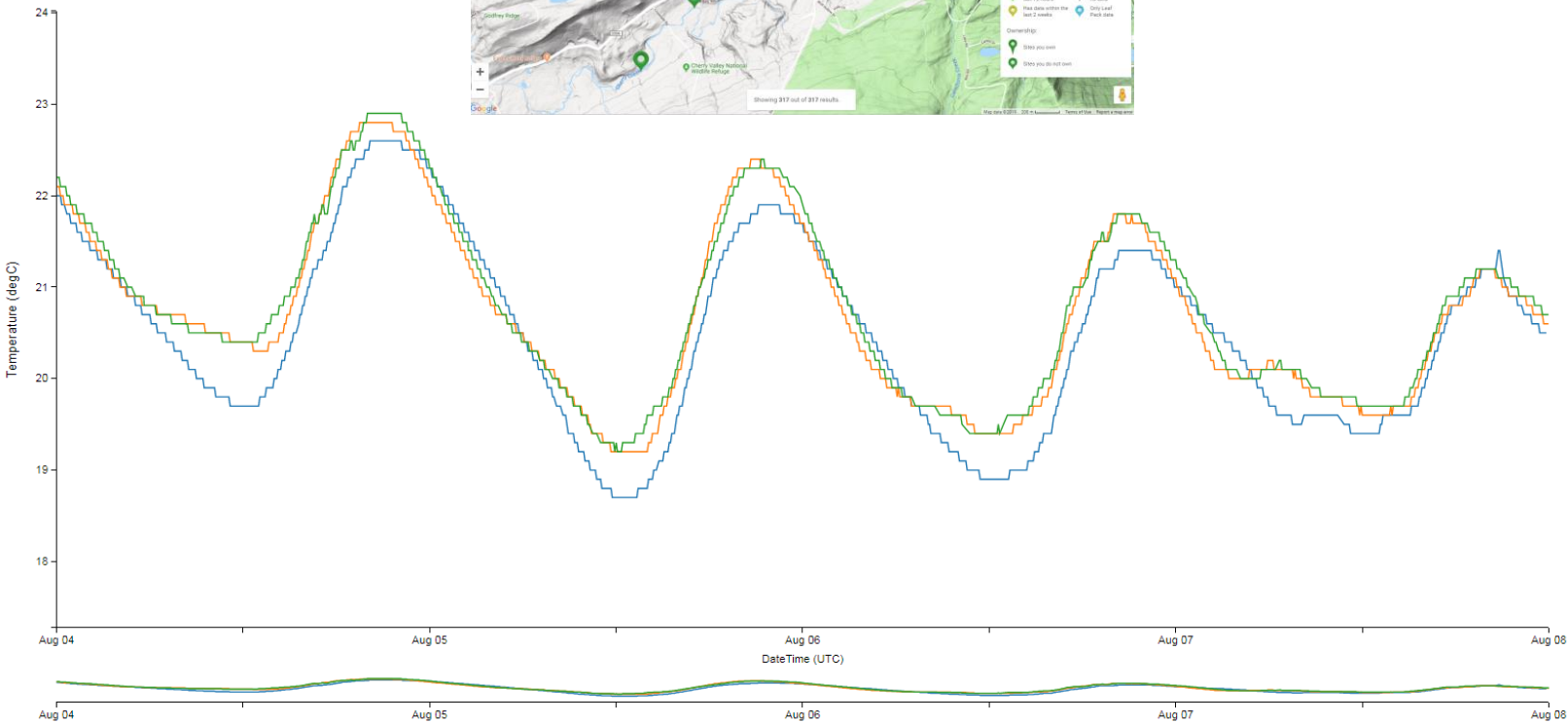
# Monitor My Watershed – main data portal

[monitormywatershed.org/sites/MSPL2S/](http://monitormywatershed.org/sites/MSPL2S/)



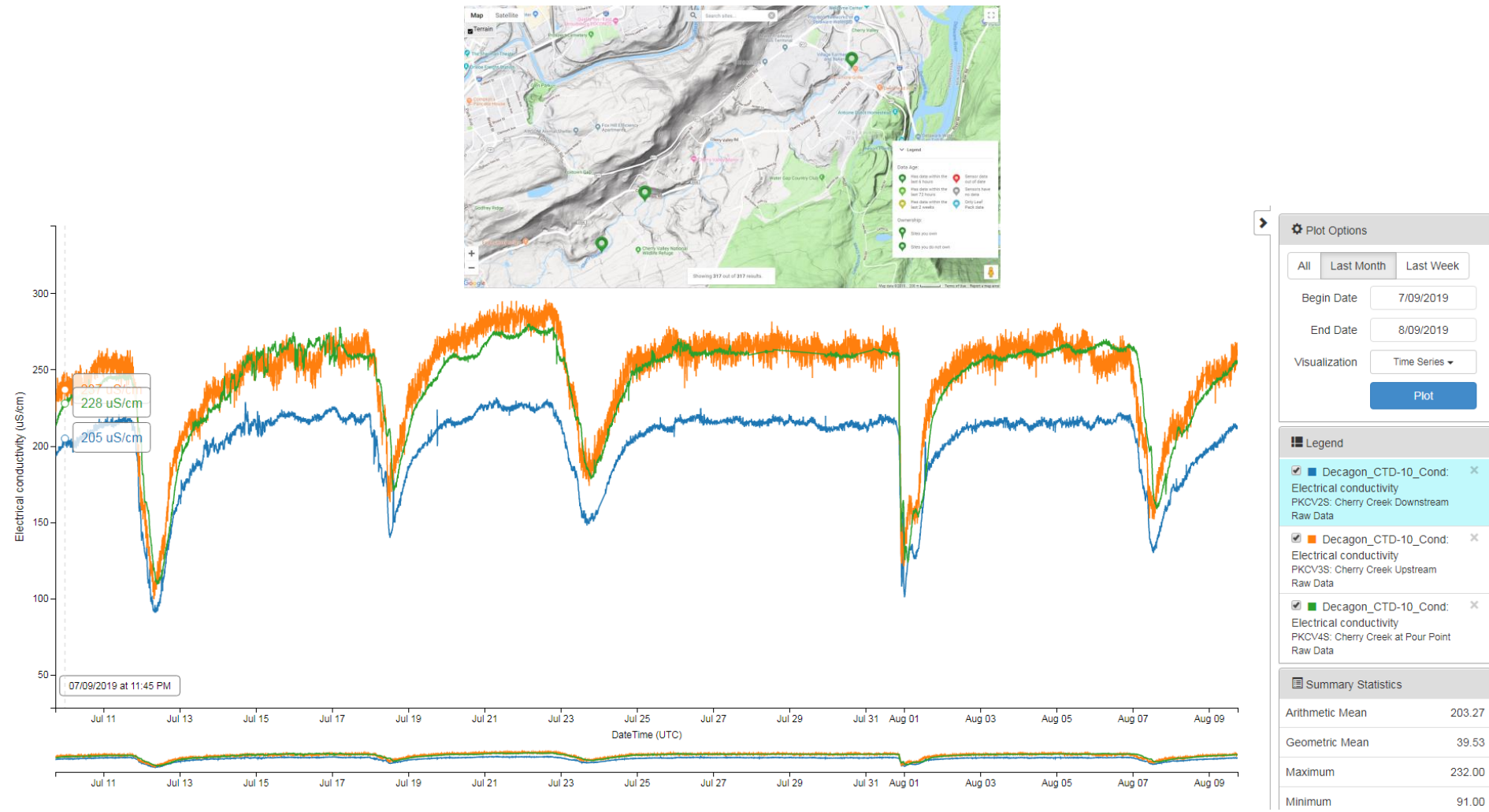
Un-named Tributary to Plum Run (MSPL2S, SL249)

# Monitor My Watershed – main data portal



Cherry Creek sites at Cherry Valley NWR and pour point

# Monitor My Watershed – main data portal



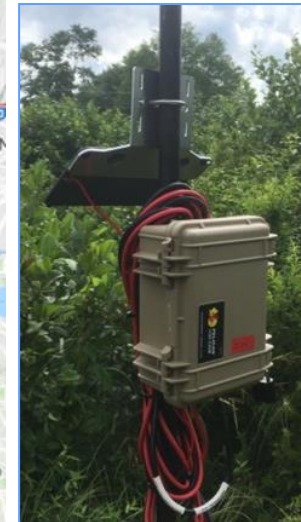
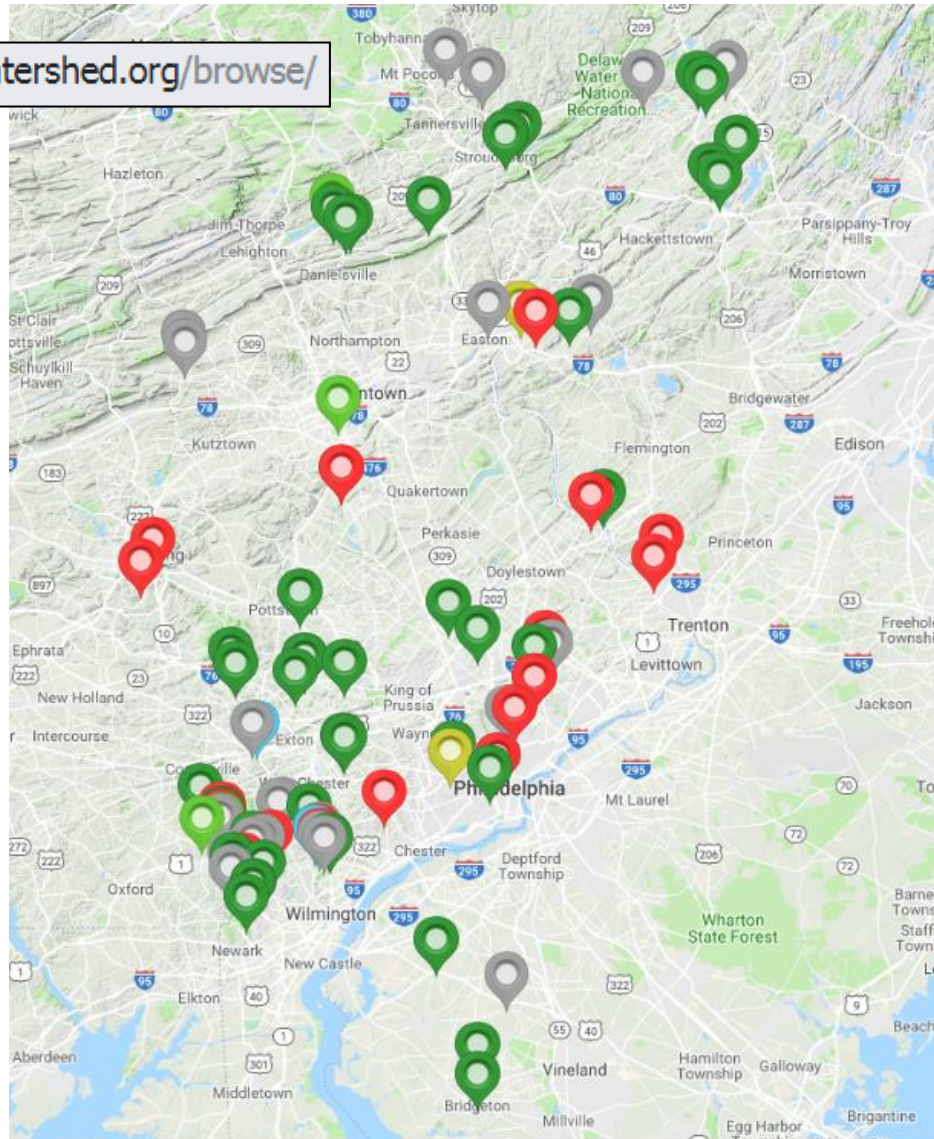
# Recent data usage stories

- The Nature Conservancy, DE – identified illicit and previously unknown oil discharge to stormwater pipes at Concord Mall.
- Montgomery School ongoing investigation of unknown conductivity spikes into Pickering Creek.
- Willistown Conservation Trust identifying flood stage influence on pesticide applications.
- Lopatcong Creek Initiative investigating sources of turbidity spikes during baseflow.
- Primrose Creek Watershed Association tracking water loss due to quarry induced sinkholes.
- Musconetcong Watershed Association – data to comment on dam release issues in Musconetcong River
- Stroud Center analyzing conductivity and temperature data across Delaware Basin – linking to landscape patterns.
  - Possible peer-review publications



# Distribution

[monitormywatershed.org/browse/](http://monitormywatershed.org/browse/)






# Monitor My Watershed – main data portal

← → ↻ 🏠 ⓘ Not secure | monitormywatershed.org 🔍 ☆ 🔄 ⓘ

 Monitor My Watershed® Browse Sites Time Series Analyst 

Help  Log In Sign Up



## Data Sharing Portal

Contribute your water-quality data

Ready to start sharing your data?

[SIGN UP](#)

## How It Works

Monitor My Watershed supports multiple types of water-quality data.



### Share and Explore Sensor Datasets

EnviroDIY is a community of enthusiasts sharing do-it-yourself ideas for environmental science and monitoring.

1

2

3

# Monitor My Watershed — main data portal

← → ↻ 🏠 ⓘ Not secure | [monitormywatershed.org/browse/](http://monitormywatershed.org/browse/) 🔍 ☆ 🌐 ⓘ

**Monitor My Watershed** Browse Sites Time Series Analyst 🔗 Help ⓘ Log In Sign Up

## Browse Data Collection Sites

Browse all sites that have been registered in the database by all users. Clicking on a site shows its details and provides a link to view the data collected at that site.

☒ Auto Zoom CLEAR

**Data Types**

- ☐ EnviroDIY 288
- ☐ Leaf Pack 6

**Organizations**

🔍 Search Organizations...

- ☐ American Littoral Society 2
- ☐ Aquashicola Pohopoco Watershed Conservancy 2
- ☐ Berks County Conservation District 3
- ☐ Berks Nature 2
- ☐ Brodhead Watershed Association 1
- ☐ Brown University 1
- ☐ Chattahoochee Riverkeeper 3
- ☐ Cleveland Metroparks 1
- ☐ Darby Creek Valley Association 1

Map Satellite 🔍 Search sites...

Showing 300 out of 300 results.

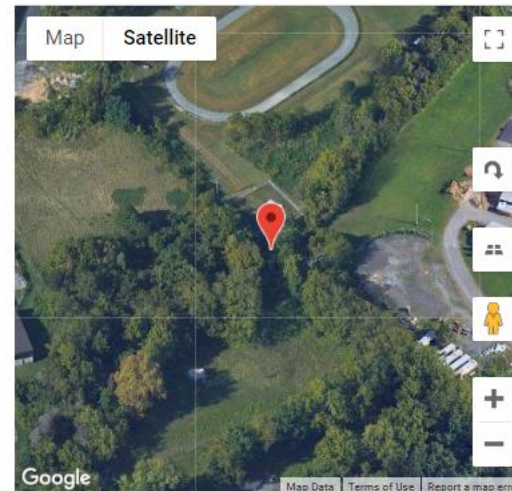


# Monitor My Watershed – main data portal

[monitormywatershed.org/sites/MSPL2S/](https://monitormywatershed.org/sites/MSPL2S/)

## Un-named Tributary to Plum Run (MSPL2S)

|                   |   |
|-------------------|---|
| Deployment By     | Karin Wulkowicz   |
| Organization      | Pennsylvania State University Extension -<br>Master Watershed Steward Program |
| Registration Date | June 25, 2019, 8:52 p.m.  |
| Deployment Date   | June 26, 2019, 4 p.m.   |
| Latitude          | 40.378635   |
| Longitude         | -76.012667  |
| Elevation (m)     | 76.0  |
| Elevation Datum   | MSL   |
| Site Type         | Stream  |
| Stream Name       | -   |
| Major Watershed   | Delaware  |
| Sub Basin         | Plum Run  |
| Closest Town      | -   |
| Notes             | SL249 - Berks County Conservation District<br>office                          |



# Monitor My Watershed – main data portal

[monitormywatershed.org/sites/MSPL2S/](http://monitormywatershed.org/sites/MSPL2S/)

## Sensor Observations at this Site

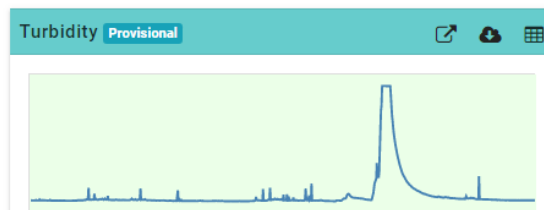
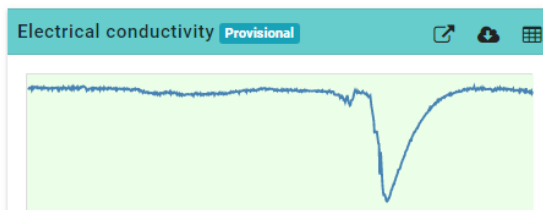
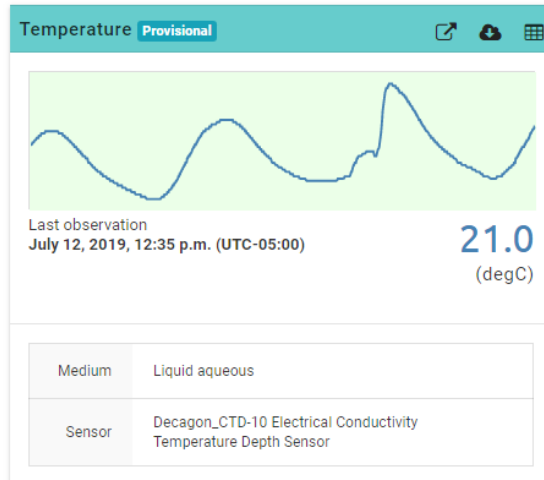
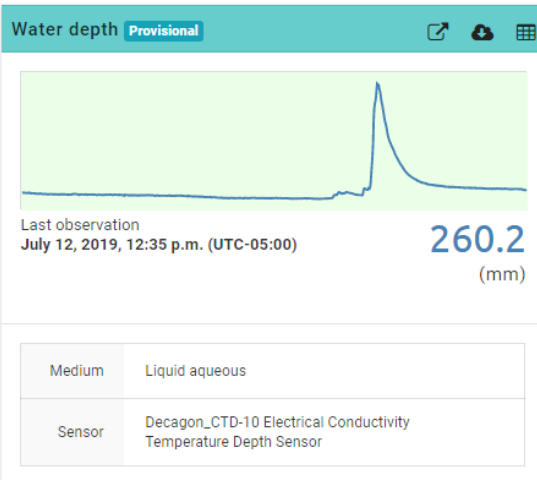


DOWNLOAD SENSOR DATA

**i** Only the most recent 72 hours of available data are shown on the sparkline plots. The plots are broken when there are gaps in the data longer than 6 hours. Plots shaded in green have recent data. Plots shaded in red have not reported data in the last 72 hours.

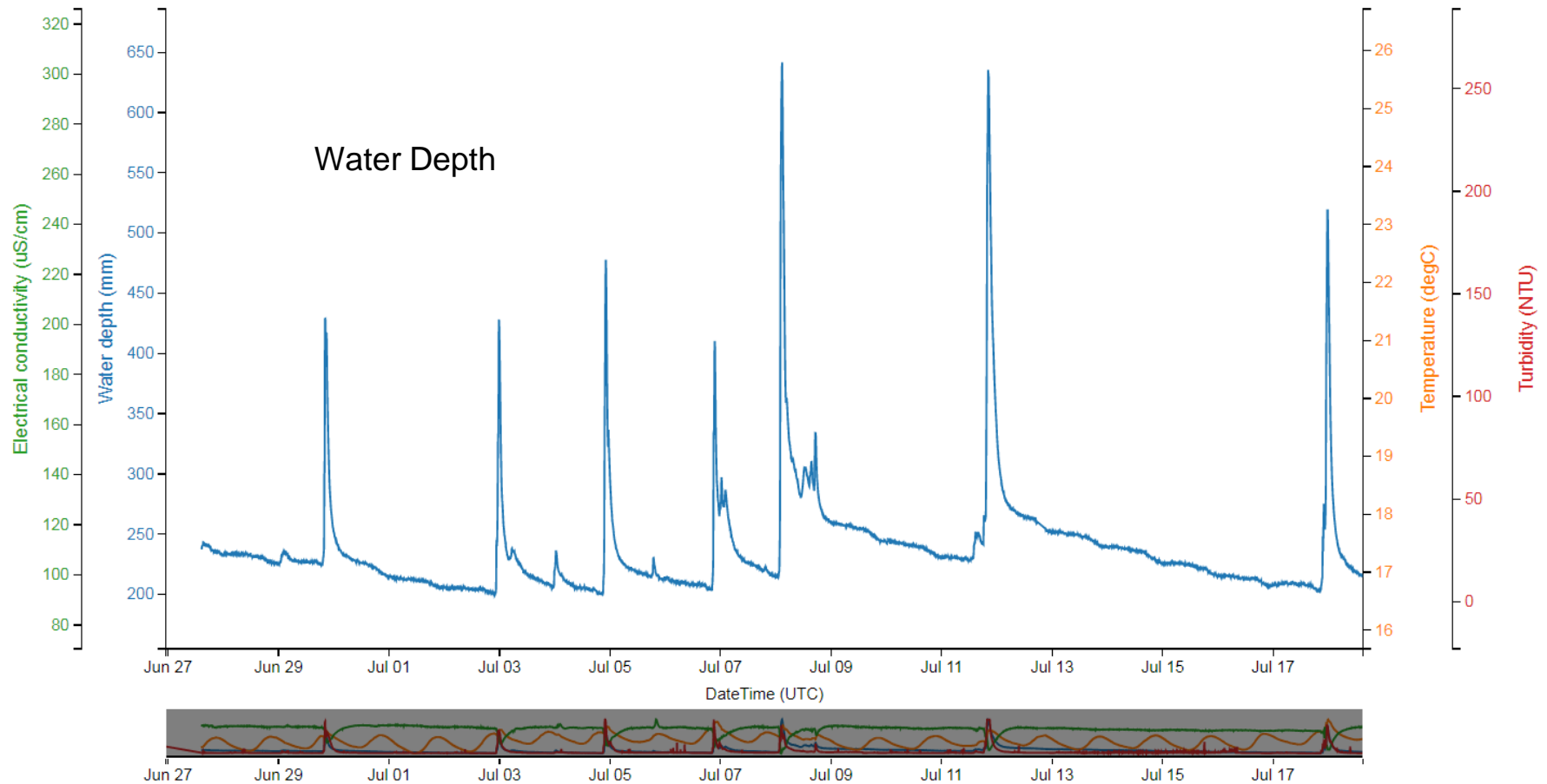
**Time Series Analyst**  
View data for this site.

Related Link



# Monitor My Watershed – main data portal

[monitormywatershed.org/sites/MSPL2S/](http://monitormywatershed.org/sites/MSPL2S/)

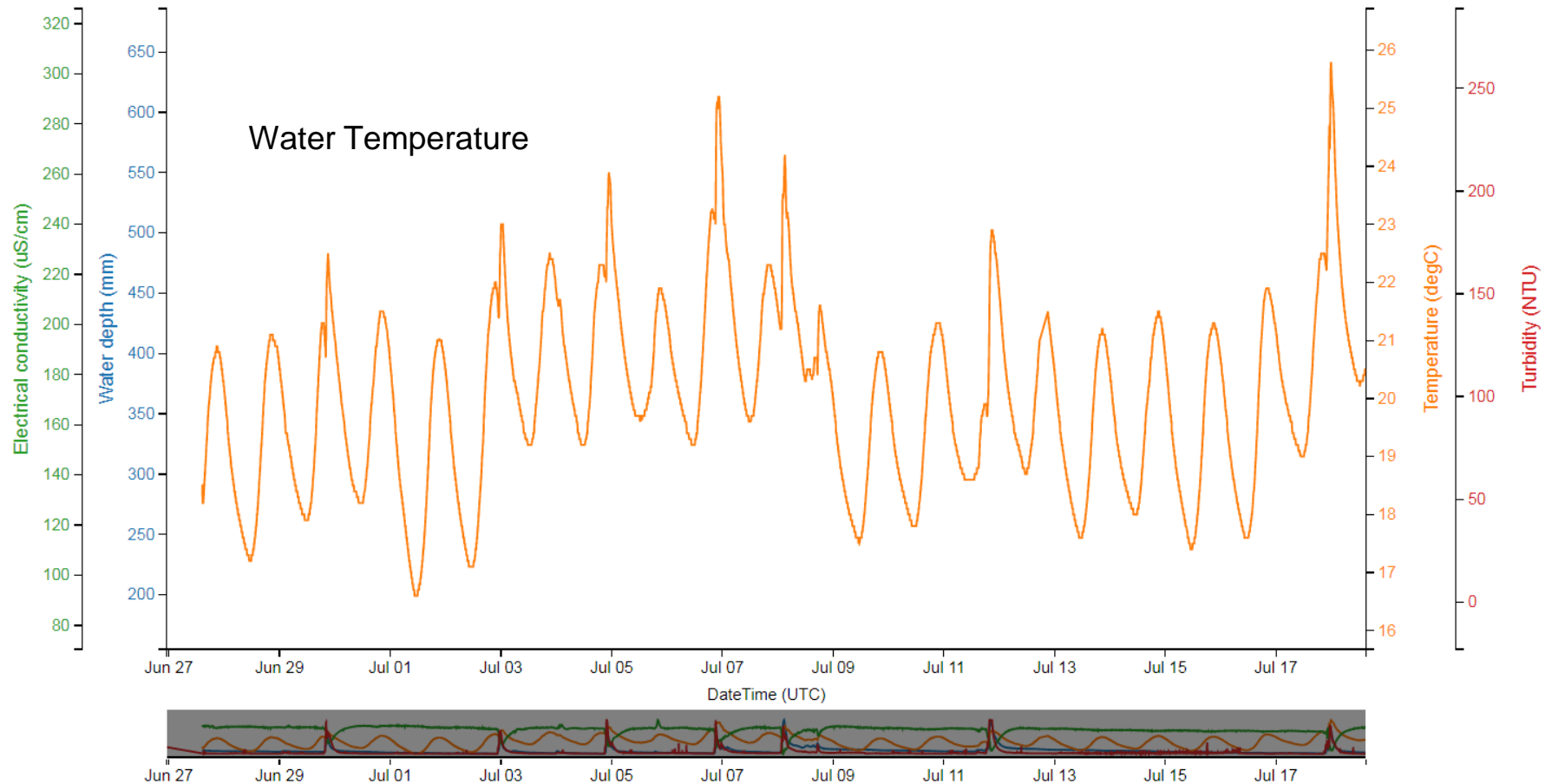


Un-named Tributary to Plum Run (MSPL2S, SL249)

# Monitor My Watershed – main data portal

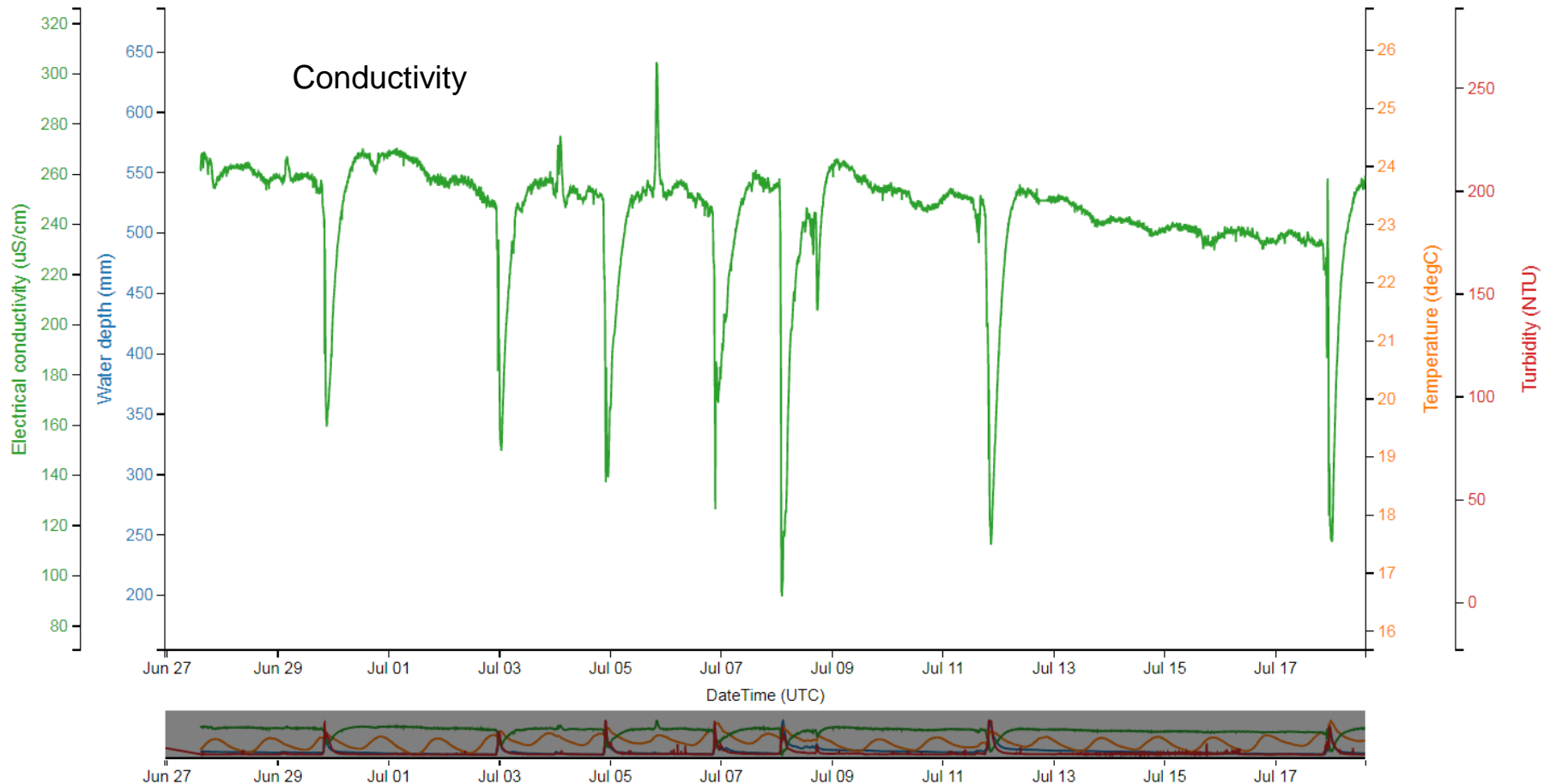
[monitormywatershed.org/sites/MSPL2S/](http://monitormywatershed.org/sites/MSPL2S/)

Water Temperature



# Monitor My Watershed – main data portal

[monitormywatershed.org/sites/MSPL2S/](http://monitormywatershed.org/sites/MSPL2S/)

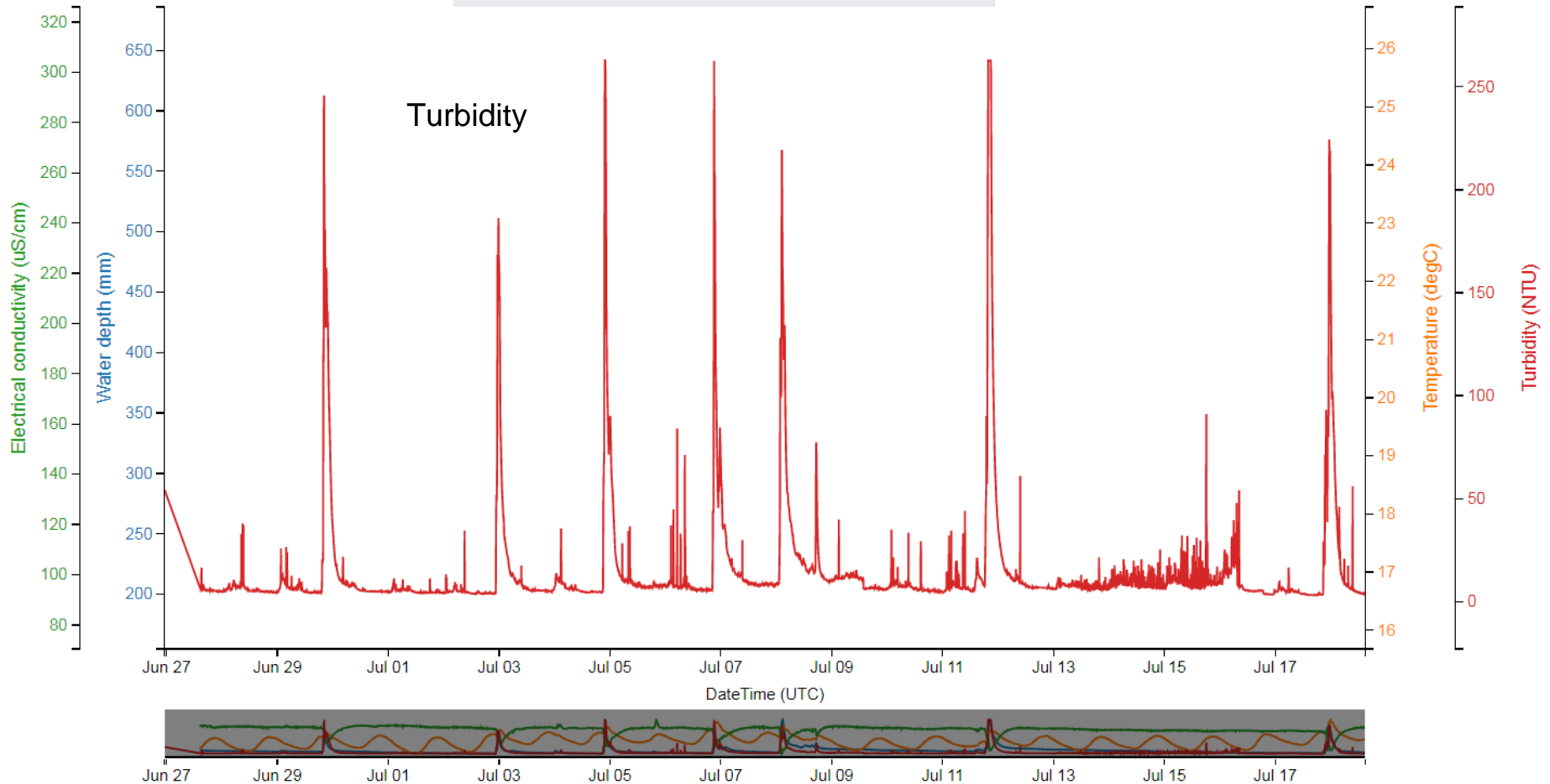


Un-named Tributary to Plum Run (MSPL2S, SL249)



# Monitor My Watershed – main data portal

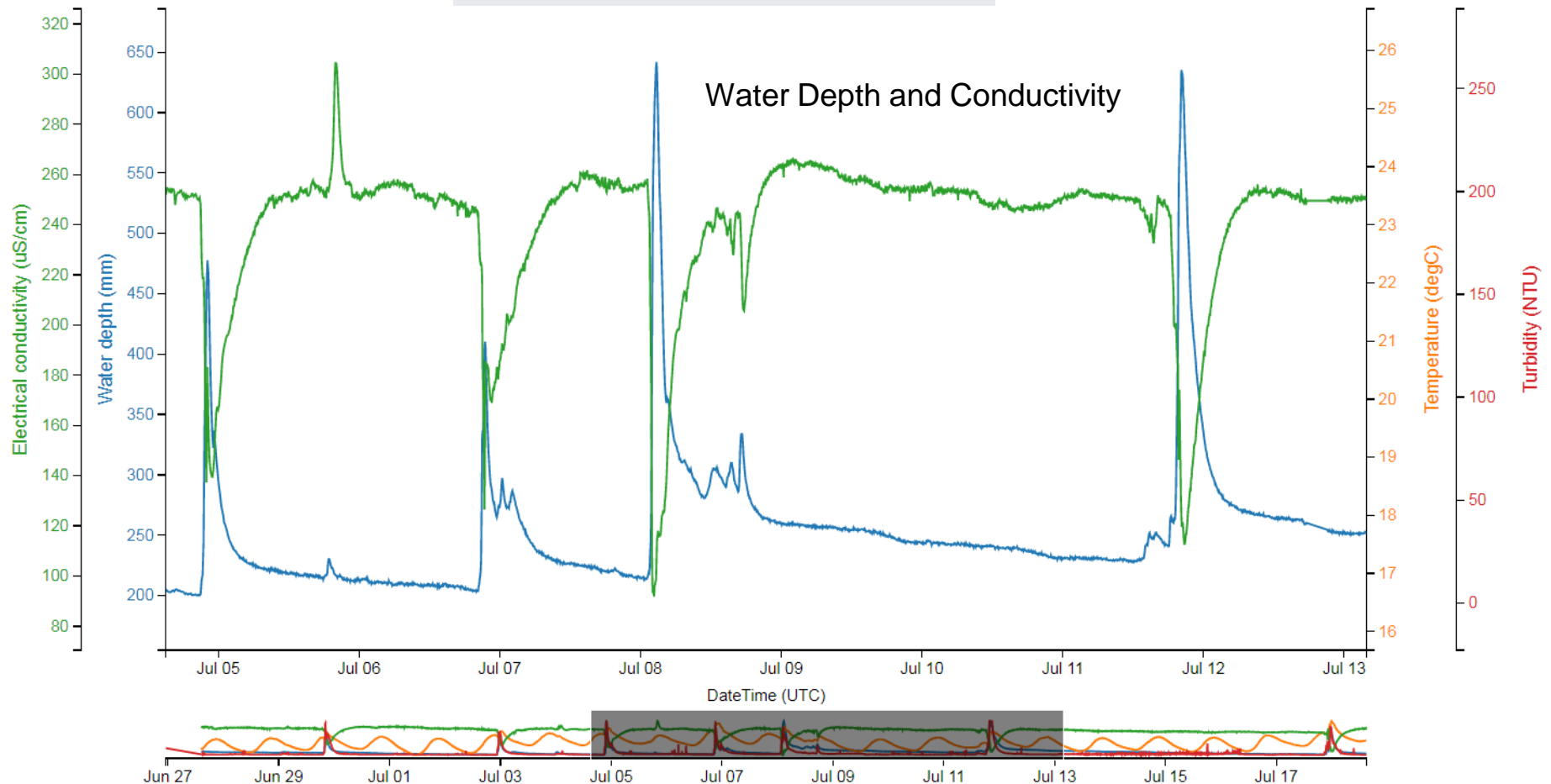
[monitormywatershed.org/sites/MSPL2S/](http://monitormywatershed.org/sites/MSPL2S/)



Un-named Tributary to Plum Run (MSPL2S, SL249)

# Monitor My Watershed – main data portal

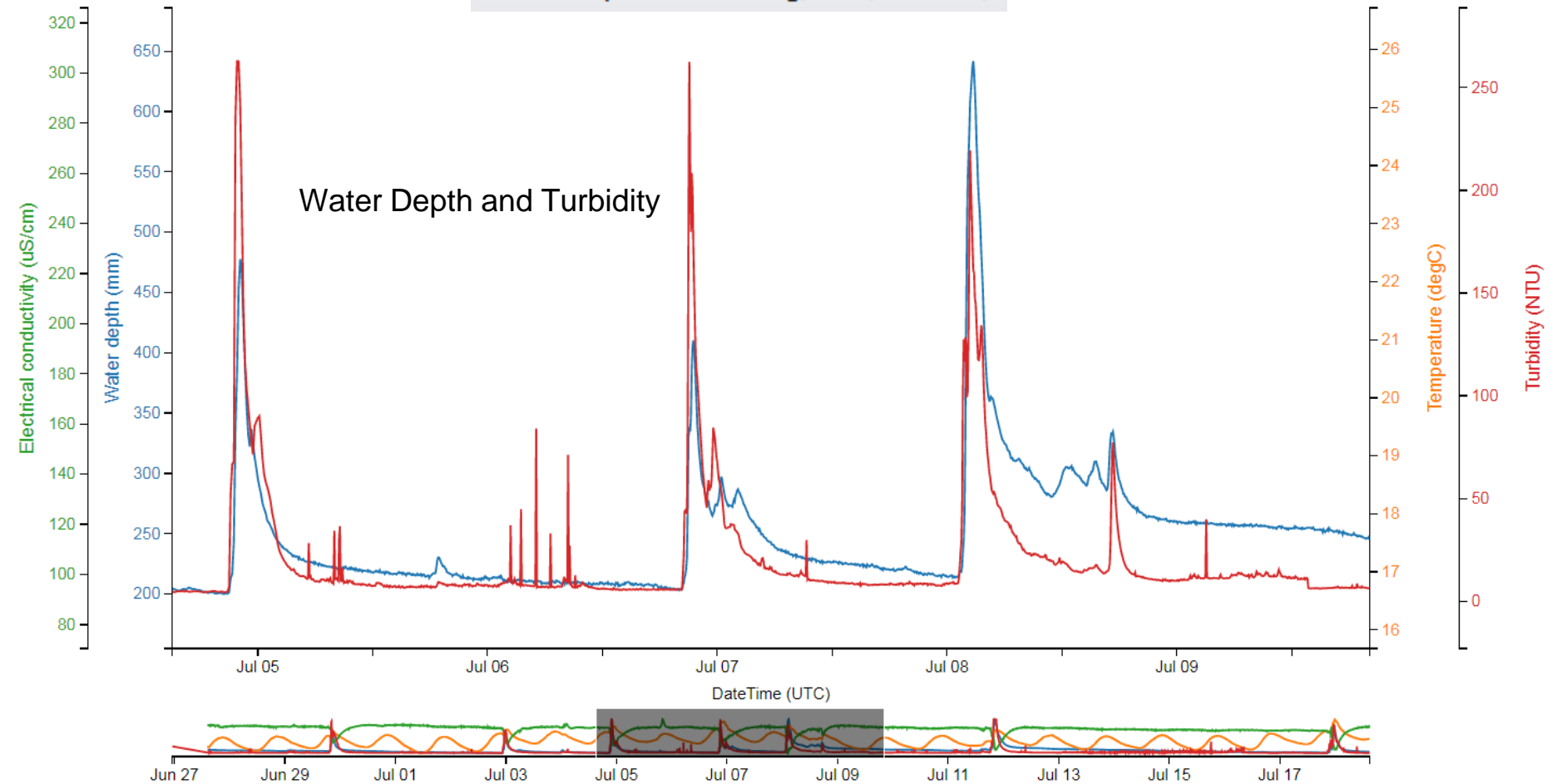
[monitormywatershed.org/sites/MSPL2S/](http://monitormywatershed.org/sites/MSPL2S/)



Un-named Tributary to Plum Run (MSPL2S, SL249)

# Monitor My Watershed – main data portal

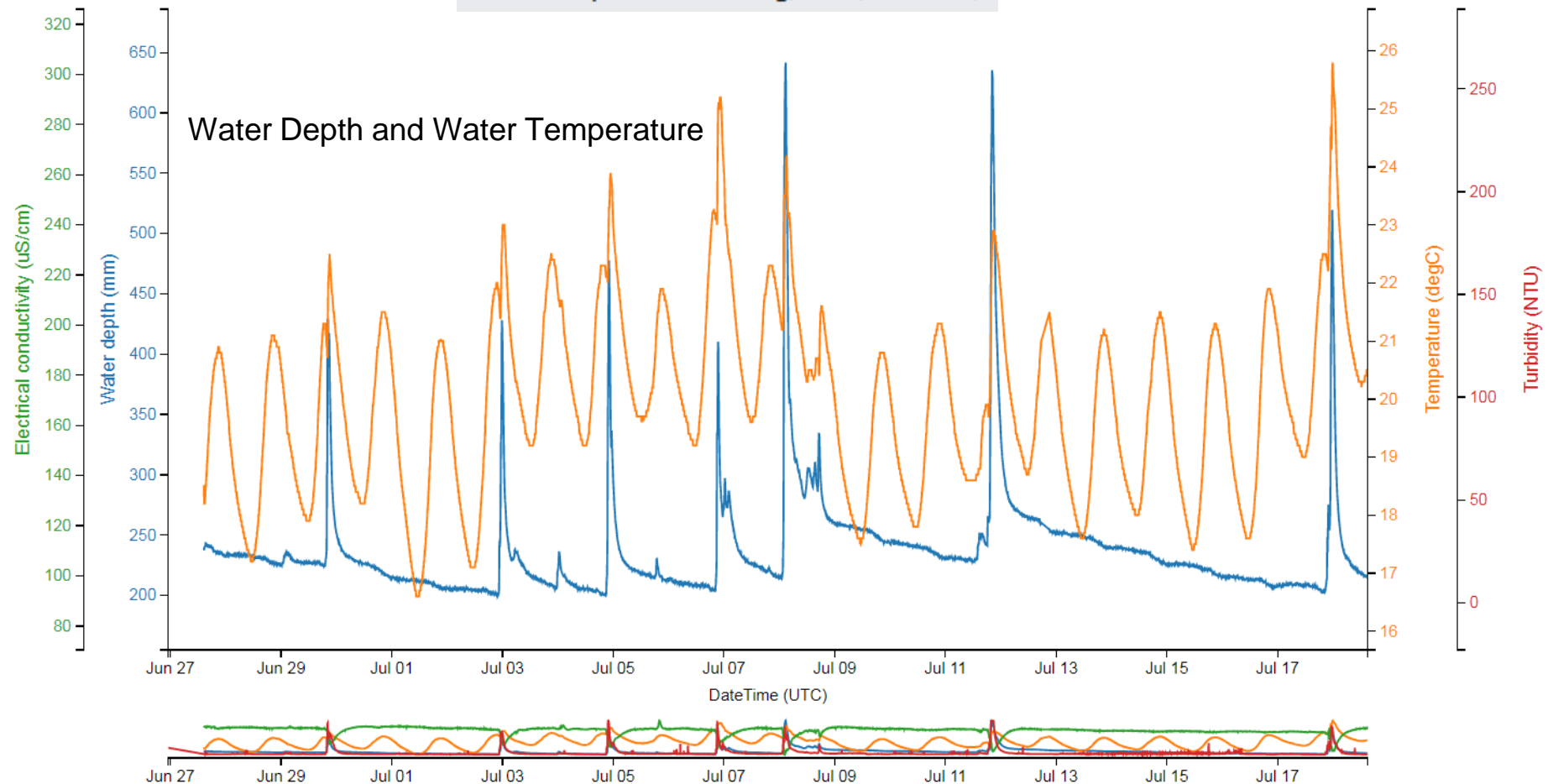
[monitormywatershed.org/sites/MSPL2S/](http://monitormywatershed.org/sites/MSPL2S/)



Un-named Tributary to Plum Run (MSPL2S, SL249)

# Monitor My Watershed – main data portal

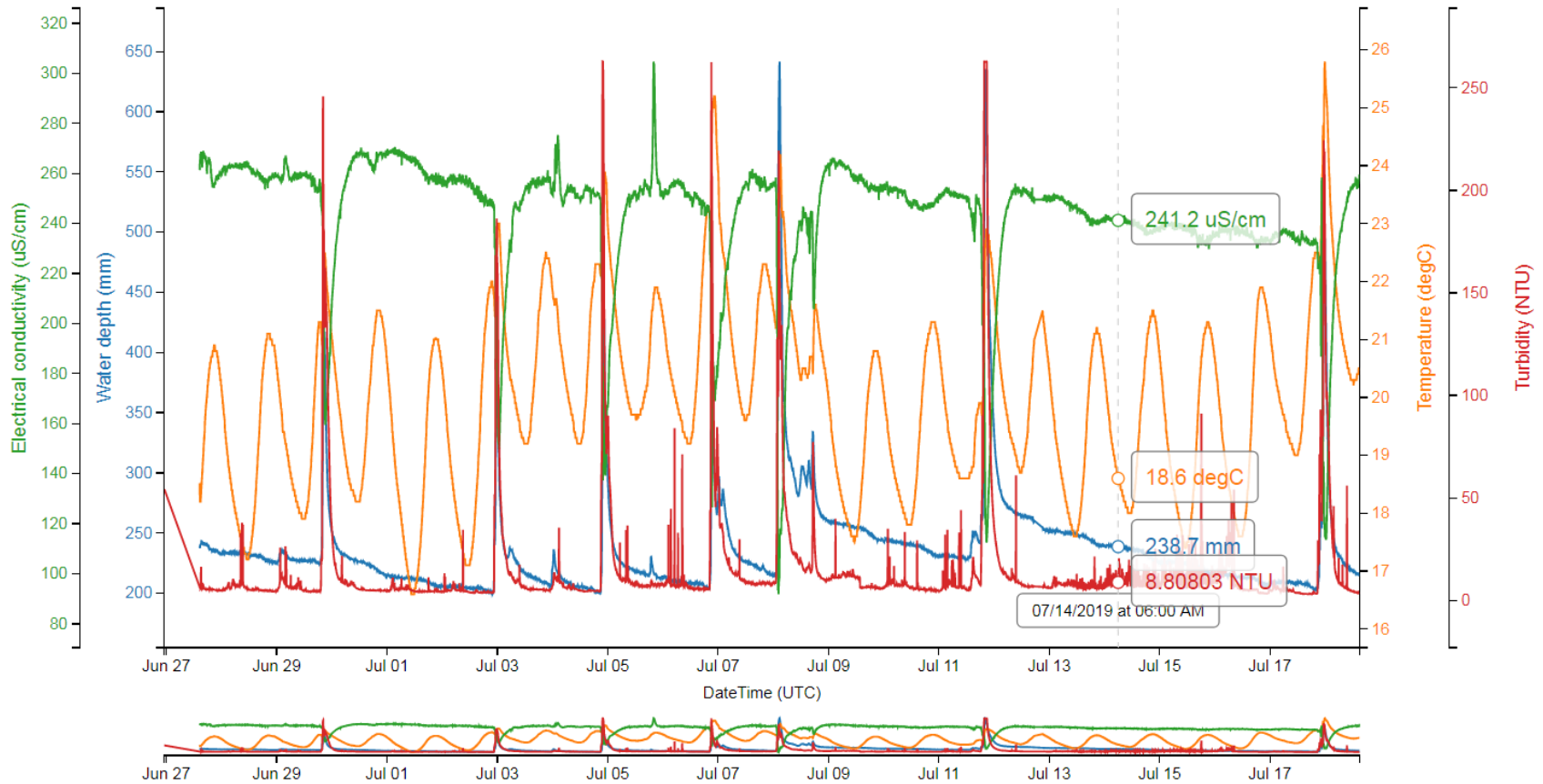
[monitormywatershed.org/sites/MSPL2S/](http://monitormywatershed.org/sites/MSPL2S/)



Un-named Tributary to Plum Run (MSPL2S, SL249)

# Monitor My Watershed – main data portal

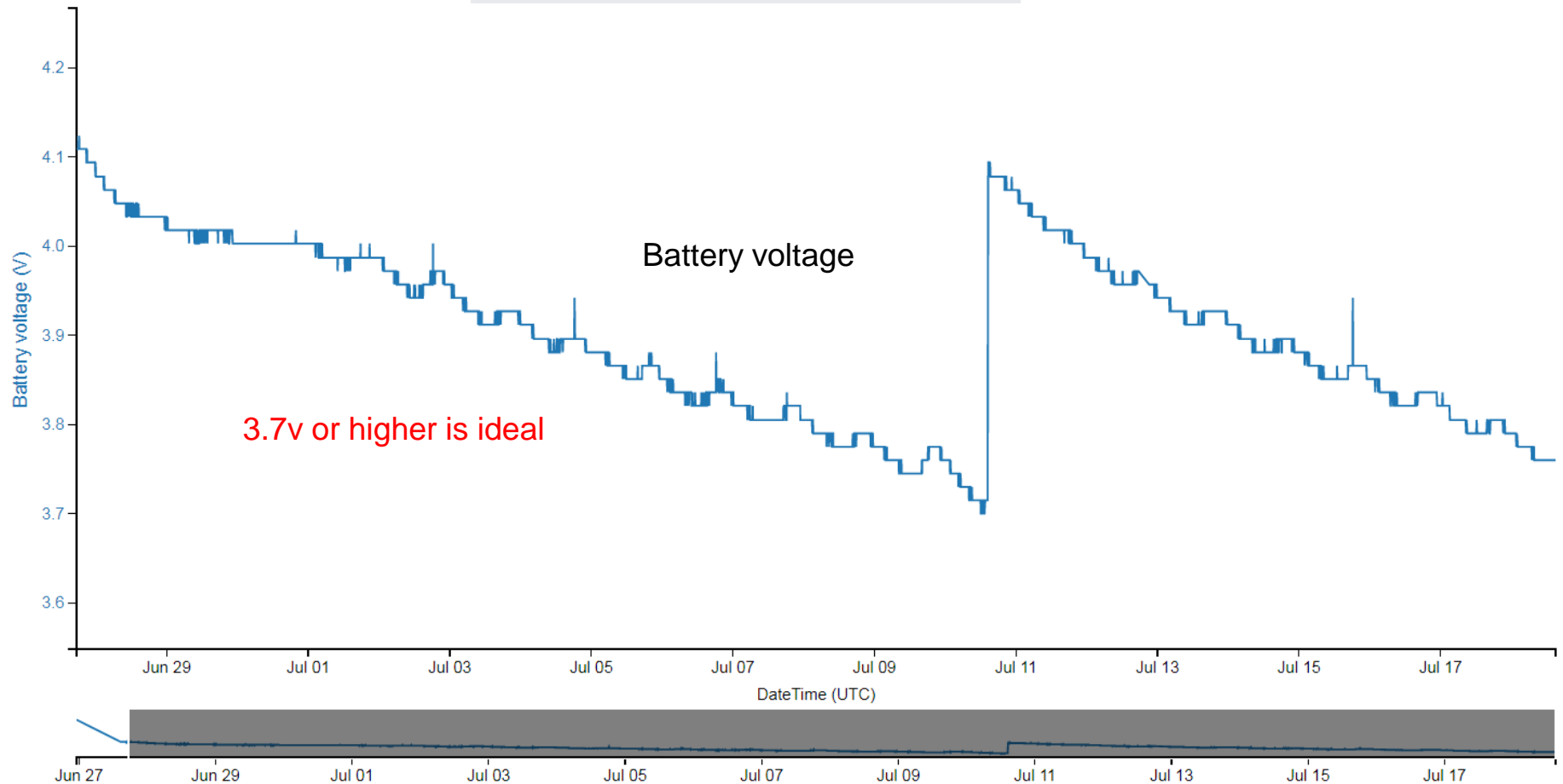
[monitormywatershed.org/sites/MSPL2S/](http://monitormywatershed.org/sites/MSPL2S/)



Un-named Tributary to Plum Run (MSPL2S, SL249)

# Monitor My Watershed – main data portal

[monitormywatershed.org/sites/MSPL2S/](http://monitormywatershed.org/sites/MSPL2S/)



Un-named Tributary to Plum Run (MSPL2S, SL249)

# Drwisensors.dreamhosters.com – alternate data portal

[drwisensors.dreamhosters.com/charts\\_main\\_SL191.php](http://drwisensors.dreamhosters.com/charts_main_SL191.php)



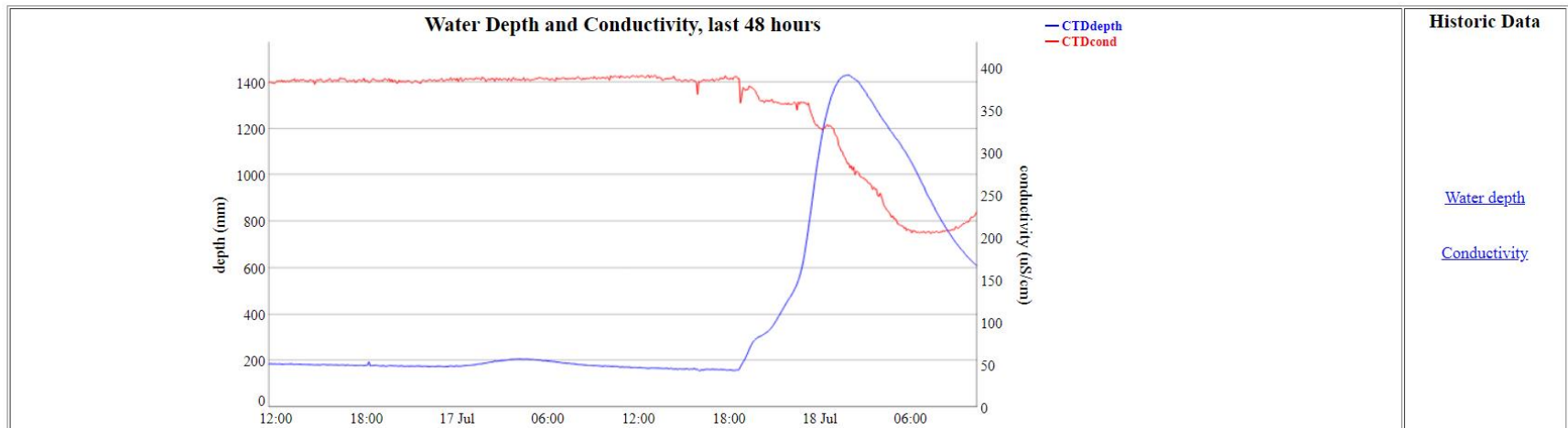
## SL191 Turbidity/CTD Logger

This is data from logger SL191.  
The logger is equipped with a [Decagon CTD](#) which measures water conductivity, temperature, and depth; and a [Campbell Scientific OBS3+](#) which measures turbidity in two ranges.

Show all data in the database [as table](#) or [as CSV text](#)  
[Get raw CSV text file](#)

### Latest readings:

At 2019-07-18 10:25:43 EST:  
CTD Depth= 609.7mm, CTD Temp= 24.3 degreesC, CTD Conductivity= 231 uS/cm  
Turbidity Low= 29.7 NTU, Turbidity High= 30.7 NTU, Board Temp= 27.5 degreesC; Battery= 4.06 volts

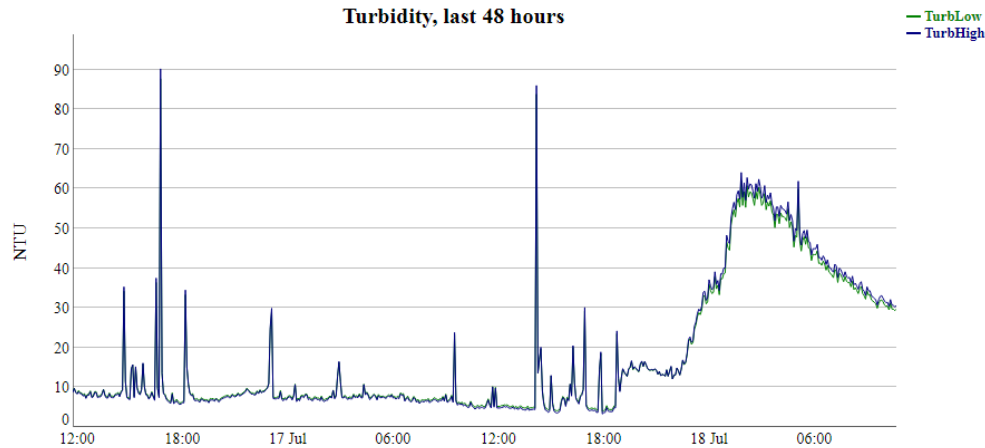


Schuylkill River at Towpath Park, Pottstown (MSSR2S, SL191)

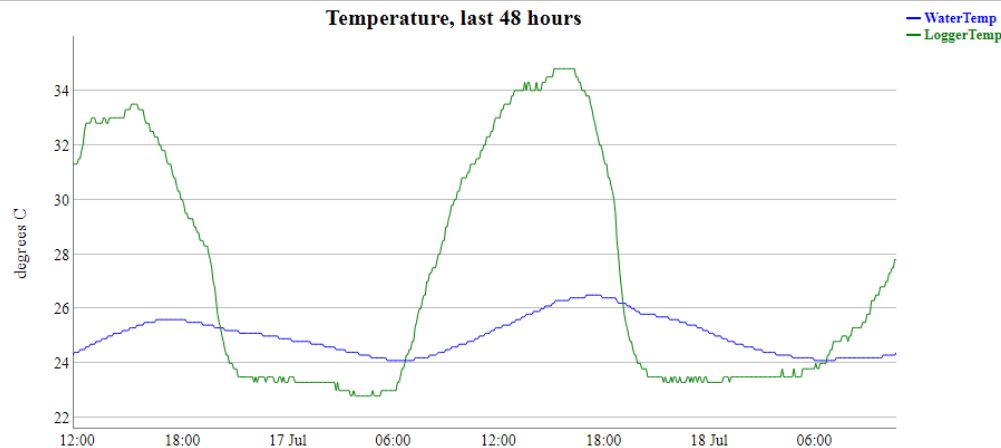


# Drwisensors.dreamhosters.com – alternate data portal

[drwisensors.dreamhosters.com/charts\\_main\\_SL191.php](http://drwisensors.dreamhosters.com/charts_main_SL191.php)



[Turbidity](#)

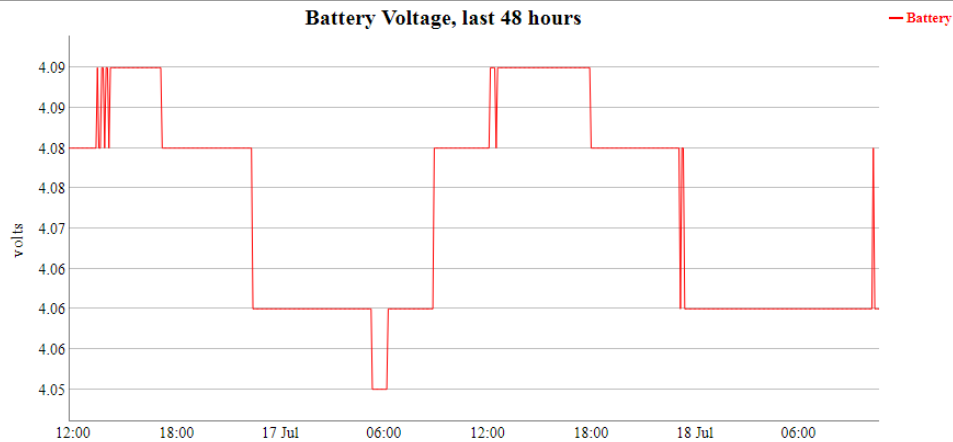


[Temperatures](#)

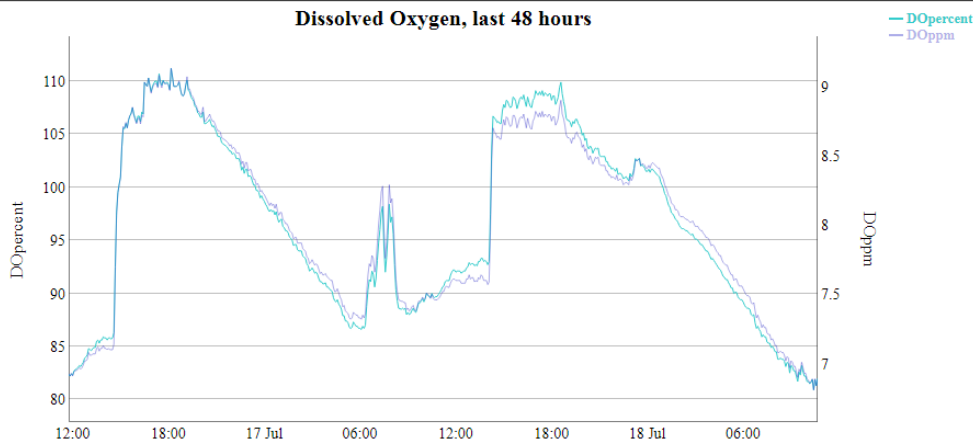
Schuylkill River at Towpath Park, Pottstown (MSSR2S, SL191)

# Drwisensors.dreamhosters.com – alternate data portal

[drwisensors.dreamhosters.com/charts\\_main\\_SL191.php](http://drwisensors.dreamhosters.com/charts_main_SL191.php)



[Battery volts](#)



[Oxygen](#)

Schuylkill River at Towpath Park, Pottstown (MSSR2S, SL191)

# Resources

- **Data and data visualization**

- Monitor My Watershed (<http://monitormywatershed.org/>)
- <http://drwisensors.dreamhosters.com/>

- **Guidance**

- **Maintenance Quick Guide**
- **QC Quick Guide**
- Field Visit Data Sheet tutorial
- DRWI operation manual, [https://docs.google.com/document/d/17iWKFOjD6tSFT6-a5mltXlgO8uhXjsA\\_voGDVRxEbTI/edit?usp=sharing](https://docs.google.com/document/d/17iWKFOjD6tSFT6-a5mltXlgO8uhXjsA_voGDVRxEbTI/edit?usp=sharing)
- Comprehensive manual, <https://www.envirodiy.org/mayfly-sensor-station-manual/>

- **Other**

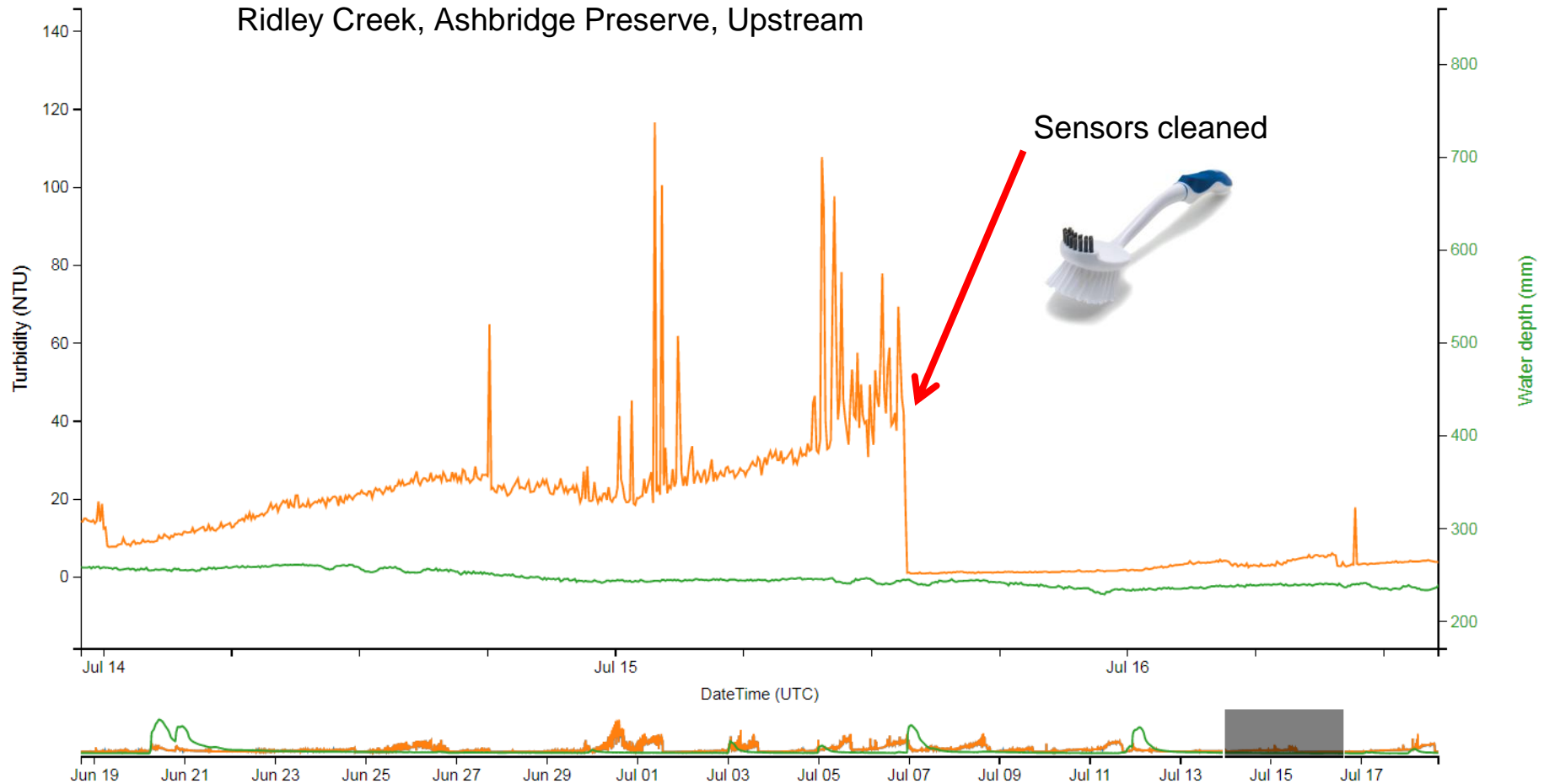
- Delaware Basin Sensor Stations online group (private group via <https://wikiwatershed.org/>)
- Presentations, videos, workshop materials: <https://wikiwatershed.org/drwi/> (pass: drwi)
- EnviroDIY (<https://www.envirodiy.org/>)

# Important Field Work

- **Maintenance – *every two weeks, at minimum once a month***
  - Clean sensors
  - Clean around logger
  - Complete Field Visit Data sheet
  - Other site observations, upkeep, photos, etc.
  - Enter data online - <https://wikiwatershed.org/drwi/>; pass: drwi
- **Quality Control – *quarterly, or more frequently if needed***
  - Clean sensors
  - QC Depth
  - QC Chemistry
  - Swap SD cards (data download)
  - Enter data online - <https://wikiwatershed.org/drwi/>; pass: drwi

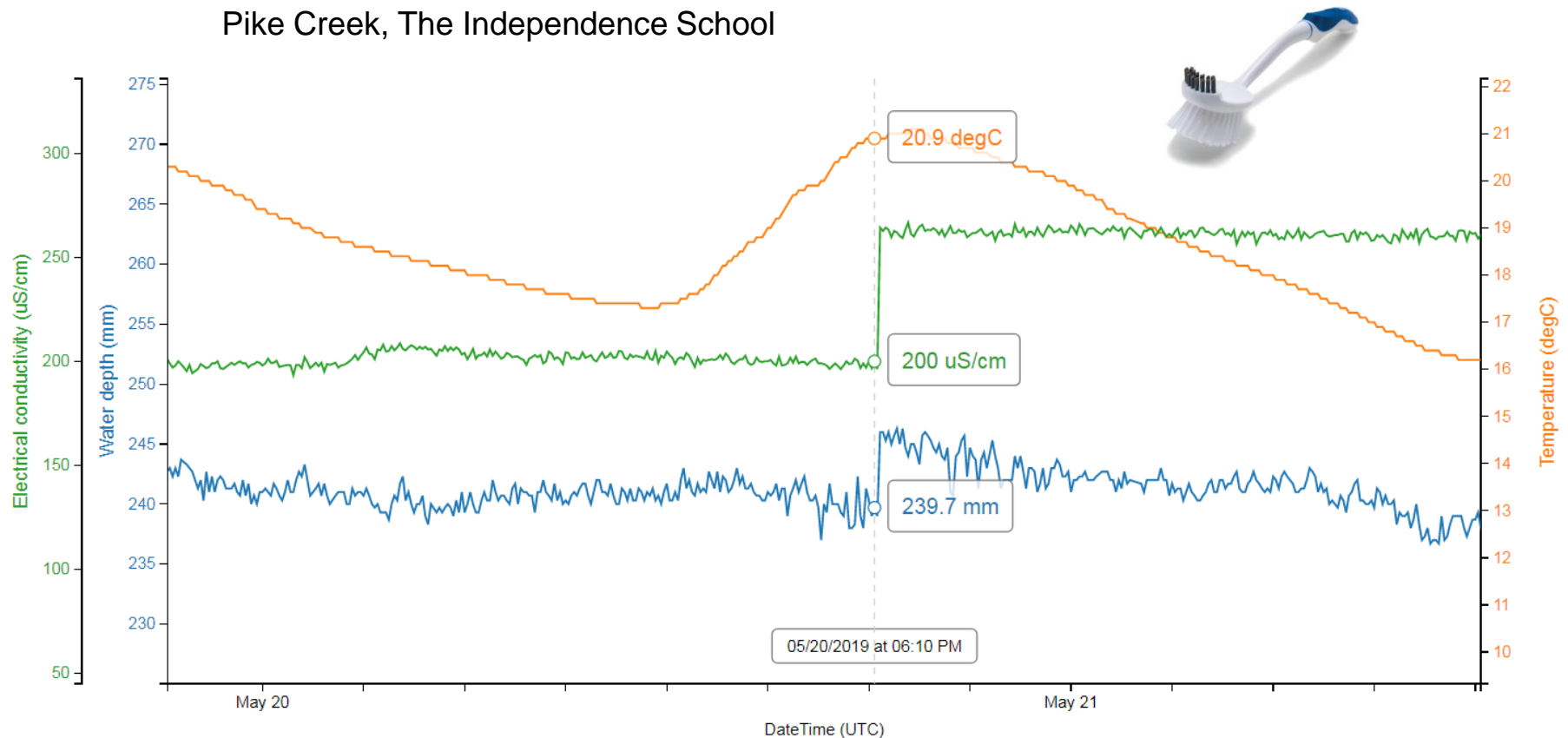
# Importance of sensor cleaning and QC

Ridley Creek, Ashbridge Preserve, Upstream



# Importance of sensor cleaning and QC

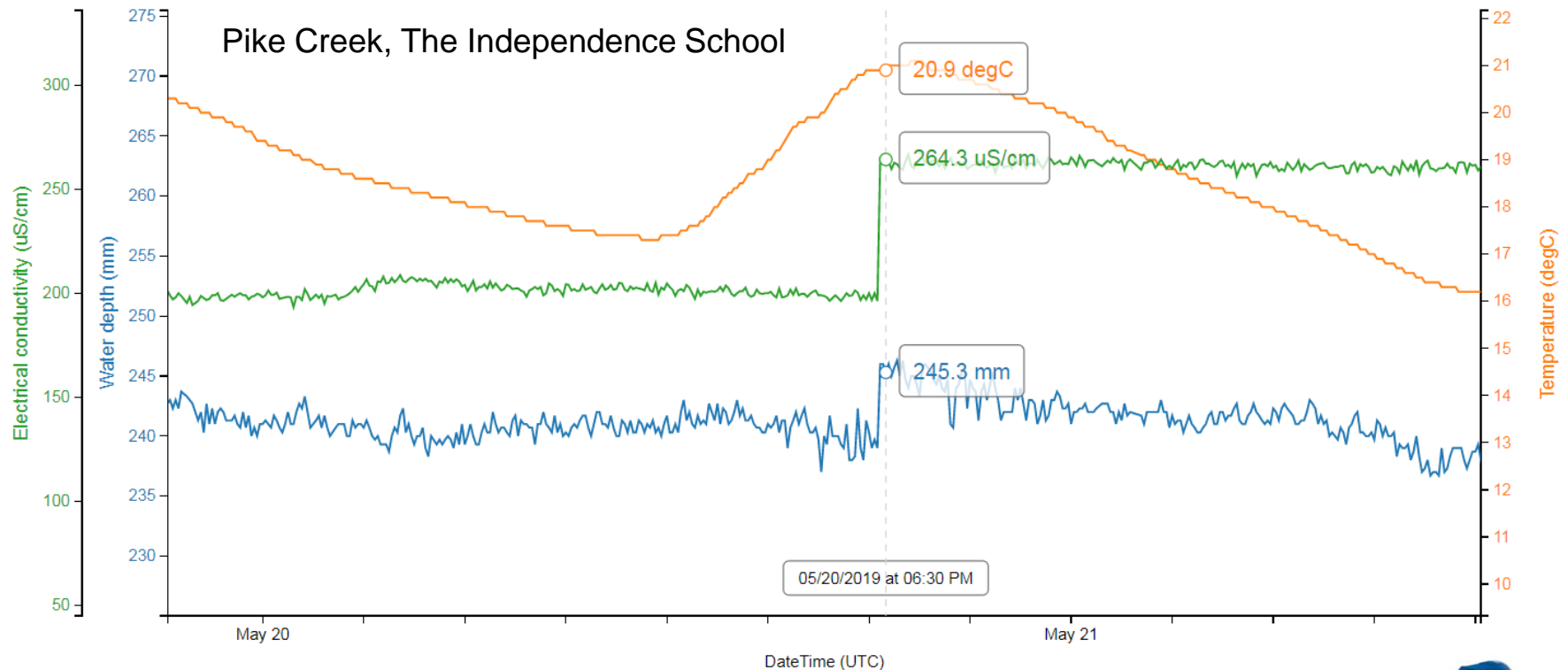
Pike Creek, The Independence School



Conductivity, temperature and depth readings before cleaning



# Importance of sensor cleaning and QC



Conductivity, temperature and depth readings after cleaning

Conductivity change of ~60 uS/cm

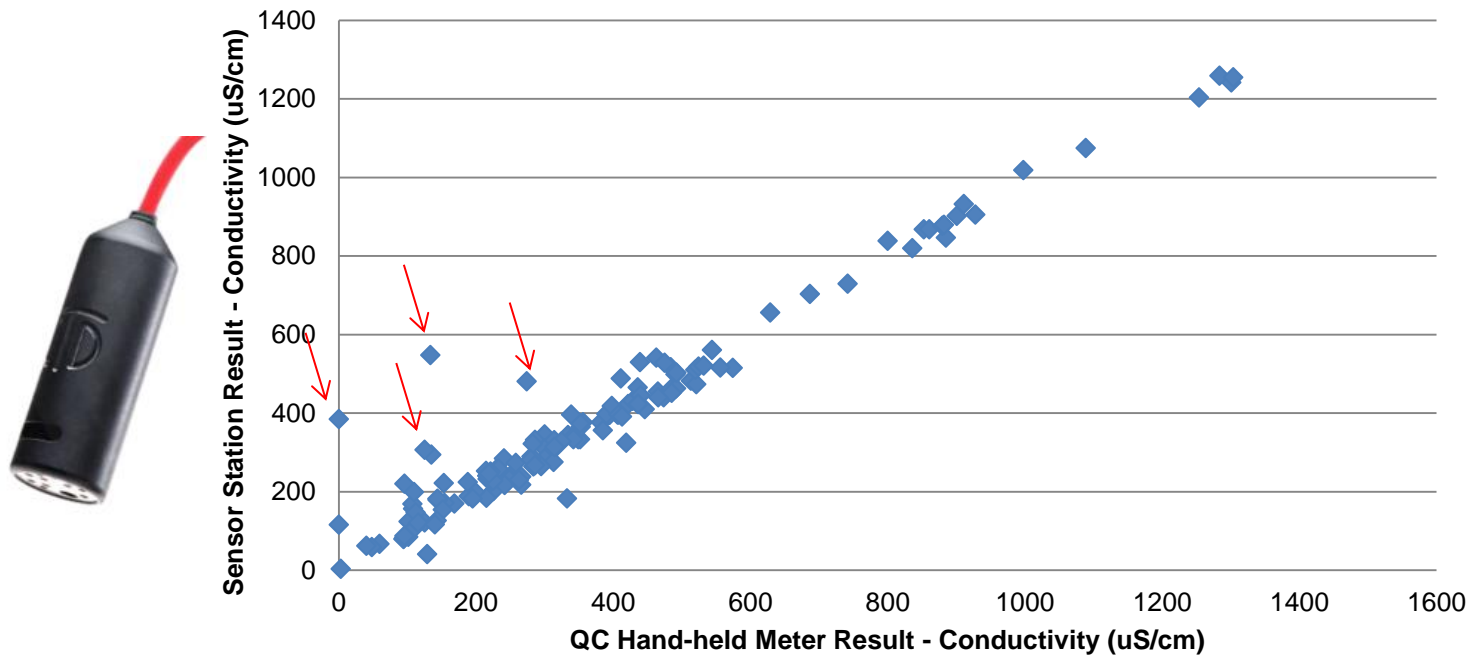
Depth change of ~5mm;

Temp change of 0 deg C



# Importance of sensor cleaning and QC


**Sensor Station Conductivity versus Hand-held Meter Conductivity**



# Quick Guides

- Review the Quick Guides
  - Maintenance Quick Guide
  - Quality Control Quick Guide

# Data entry: Wikiwatershed.org/drwi



## EnviroDIY Field Visit Data

Enter all data online: [wikiwatershed.org/drwi](http://wikiwatershed.org/drwi); password: drwi

---

Name(s):

Site ID:

Stream Name:

GPS (Lat/Long):

Photos? Yes/No

Precipitation last 24 Hours? Yes/No Amount:

General Notes/ Photo Descriptions:

LoggerID:

Location:

Date:      Arrival Time:      AM/PM?    \*EST/EDT?

\*EST=Eastern Standard Time; EDT=Eastern Daylight Time (Daylight Savings)

Water Clarity (Clear, Cloudy, Muddy):

---

SENSOR CLEANING (Recommended frequency: weekly or biweekly; monthly if only CTD sensor)

\*Cleaned Sensors? Yes/No    If Yes, exact time:      AM/PM?    EST/EDT?    \*Clean >5 min. before grab sampling

---

GRAB SAMPLES (Rec frequency: Situational; for rating curves, collect when water is high/turbid or higher than normal conductivity)

Grab Sample Taken? Yes/No

Sample Number:

Bottle Type:

Lab Sent To:

Time collected (to minute):      AM/PM?    EST/EDT?

Volume:

Date Shipped:

Notes:

---

\*SENSOR STATION DATA TO MATCH WITH GRAB SAMPLE LAB RESULTS (Complete in field or office)

|                                      |                  |                |            |
|--------------------------------------|------------------|----------------|------------|
| Sensor station Conductivity (uS/cm): | Time (military): | Not applicable | Always EST |
| Sensor station Turbidity (NTU):      | Time (military): | Not applicable | Always EST |

\*For use in Turbidity/TSS and Conductivity/Chloride rating curve development. Record sensor station Cond and Turb data at time nearest to grab sample collection time. Can be completed in field (by accessing online data) or in office (online or download from microSD card). Acquire final grab sample lab results from Stroud Center (or lab that processed sample).

---

QUALITY CONTROL - WATER LEVEL DATA (Rec frequency: quarterly and/or more frequently as needed)

|                                      |                  |                |            |
|--------------------------------------|------------------|----------------|------------|
| *Staff Gauge Height (m):             | Time:            | AM/PM?         | EST/EDT?   |
| *Sensor Station Water Depth (mm):    | Time (military): | Not applicable | Always EST |
| *QC Sensor Station Water Depth (mm): | Time:            | AM/PM?         | EST/EDT?   |

Offset (=Staff Gauge Height - Sensor Station Water Depth)(mm):

a - Staff Gauge Height and Sensor Station Water Depth readings should be from about the same time (+/- 5 minutes).  
b - Use metric ruler to measure from pressure transducer (white disc in CTD sensor) to water surface. Note - this depth measure may be slightly different from the sensor-measured depth but should be consistent over time.

# Data entry: Wikiwatershed.org/drwi

The screenshot shows the WikiWatershed website interface. At the top, the URL <https://wikiwatershed.org/drwi/> is highlighted in a red oval. The website header includes the WikiWatershed logo and navigation links: About, Model, Monitor, Mobile App, Macros, Help, News, Contact, Log In, and a search icon. Below the header, a banner reads "Web Tools Advancing Knowledge and Stewardship of Fresh Water" with social media links for Facebook, Twitter, Email, and GitHub. The main content area features the Stroud Water Research Center logo and a description of WikiWatershed as an initiative of the Stroud Water Research Center. The page title is "Protected: Delaware River Watershed Initiative Resources". Under the heading "Field Visit Data", there are two links: "Enter field visit data" and "View field visit data (Looking for older data?)". A red arrow points from the text "Enter completed field visit data sheet into google form" to the "Enter field visit data" link. Below this, under the heading "Data Sheets", there are three links: "Field visit data sheet (blank)", "Field visit data sheet tutorial", and "Stream discharge data sheet". A red arrow points from the text "Google spreadsheet containing all data entered into google form" to the "Field visit data sheet (blank)" link. Further down, under the heading "Data and Data Visualization Resources", there are two links: "Monitor My Watershed" and "http://drwisensors.dreamhosters.com/".

<https://wikiwatershed.org/drwi/>

WikiWatershed®

About Model Monitor Mobile App Macros Help News Contact Log In

Web Tools Advancing Knowledge and Stewardship of Fresh Water

Like Us Follow Us Subscribe GitHub

**STROUD**  
WATER RESEARCH CENTER

WikiWatershed is an initiative of [Stroud™ Water Research Center](#). The Stroud Center seeks to advance knowledge and stewardship of freshwater systems through global research, education, and watershed restoration.

Home » Protected: Delaware River Watershed Initiative Resources

## Protected: Delaware River Watershed Initiative Resources

### Field Visit Data

- [Enter field visit data](#)
- [View field visit data](#) (Looking for [older data](#)?)

### Data Sheets

- [Field visit data sheet \(blank\)](#)
- [Field visit data sheet tutorial](#)
- [Stream discharge data sheet](#)

### Data and Data Visualization Resources

- [Monitor My Watershed](#)
- <http://drwisensors.dreamhosters.com/>

Google Station Help Resources

# Data entry: [Wikiwatershed.org/drwi](http://Wikiwatershed.org/drwi)

- TEST CHERRY VALLEY - PKCV2S, Cherry Creek Downstream
- TEST CHERRY VALLEY - PKCV3S, Cherry Creek Upstream



# Wikiwatershed.org/drwi – google form

https://docs.google.com/forms/d/e/1FAIpQLSfxP7z9a9tVhNmtmFkyp\_r63P4nyuqvEihxzYH2buHNITHYg/viewform

Intranet StyleGuide - Stroud Int IBXexpress Delaware River Waters Stream Reach Assessm EnviroDIY.org SWRC Logger Status V WebEx, STROUD WAT WikiWatershed: Fres

## EnviroDIY Field Visit Data

If you have trouble with this form, please contact [webmaster@stroudcenter.org](mailto:webmaster@stroudcenter.org).

Please enter your email so we can send you a copy of your submitted data and a link for editing.

\* Required

Email address \*


Your email

Name(s)

Your answer

Site ID

Choose



WATER RESEARCH CENTER

# Wikiwatershed.org/drwi – google summary spreadsheet

← → ↺ 🏠 <https://docs.google.com/spreadsheets/d/13EWNblfEG-c-SDzKQbrXZ9vN3xBvdwMIZFqrj5-ckf4/edit#gid=971919051> ☆

Apps 📁 Stroud Intranet 📁 StyleGuide - Stroud Int. 📁 IBXpress 📁 Delaware River Waters 📁 Stream Reach Assessm 📁 EnviroDIY.org 📁 SWRC Logger Status Vi 📁 WebEx, STROUD WATE 📁 WikiWatershed: Fresh 📁 GitHub EnviroDIY

**EnviroDIY Field Visit Data (Responses #2)** ☆ **SHARE**

File Edit View Insert Format Data Tools Form Add-ons Help

100% \$ % .0 .00 123 Arial 10 B I U A 📏 📐 📊 📈 📉 📋 📌 📍 📎 📏

Timestamp

|    | A                  | B                        | C                          | D   | E            | F             | G       | H                           | I                    |             |
|----|--------------------|--------------------------|----------------------------|---|--------------|---------------|---------|-----------------------------|----------------------|-------------|
| 1  | Timestamp          | Email Address            | Name(s)                    | Site ID   | GPS latitude | GPS longitude | Photos? | Precipitation last 24 hours | Precipitation amount | Precipitati |
| 2  | 8/29/2018 8:54:00  | lbm@wctrust.org          | Dphm, Trivedi              | PURC1S - Ridley Creek, upstream of Ashbridge Lake   |              |               | No      | No                          |                      |             |
| 3  | 8/29/2018 8:52:44  | lbm@wctrust.org          | Dohm, Trivedi              | PURC2S - Ridley Creek, downstream of Ashbridge Lake |              |               | No      | No                          |                      |             |
| 4  | 8/28/2018 15:57:00 | mgisondi@stroudcenter.o  | Aversa, Hicks, Johnson     | KCMR1S - Unknown tribu                              | 39.5905811   | -75.170517    | Yes     | No                          |                      |             |
| 5  | 8/27/2018 13:03:27 | lbm@wctrust.org          | Lauren McGrath, Regan C    | PURC2S - Ridley Creek, downstream of Ashbridge Lake |              |               | No      | No                          |                      |             |
| 6  | 8/27/2018 13:00:19 | lbm@wctrust.org          | Lauren McGrath, Regan C    | PURC1S - Ridley Creek, upstream of Ashbridge Lake   |              |               | No      | No                          |                      |             |
| 7  | 8/27/2018 9:26:16  | plaisance.eric@gmail.com | Eric                       | PALM_MS3 - Palmer (aka                              | 39.82377     | 75.57156      | Yes     | No                          |                      |             |
| 8  | 8/24/2018 18:20:21 | pwilson@esu.edu          | Paul Wilson                | PKPC3S - Paradise Creek                             |              |               |         |                             |                      |             |
| 9  | 8/24/2018 18:19:03 | pwilson@esu.edu          | Paul Wilson                | PKBH7S - Brodhead Creek                             |              |               |         |                             |                      |             |
| 10 | 8/24/2018 18:16:50 | pwilson@esu.edu          | Paul Wilson                | PKCV2S - Cherry Creek downstream                    |              |               | No      | Yes                         | 0.13                 | inches      |
| 11 | 8/24/2018 18:08:49 | pwilson@esu.edu          | Paul Wilson                | PKCV4S - Cherry Creek pour point                    |              |               | No      | Yes                         | 0.13                 | inches      |
| 12 | 8/24/2018 17:17:25 | pbw@wilsonjoneswilson.c  | Paul Wilson                | PKCV3S - Cherry Creek upstream                      |              |               | No      | Yes                         | 0.13                 | inches      |
| 13 | 8/24/2018 15:49:21 | ryan@ttfwatershed.org    | Ryan Neuman                | PUJC2S - Jenkintown Creek, Osceola Rd               |              |               | Yes     | No                          | 0                    | inches      |
| 14 | 8/24/2018 15:44:53 | ryan@ttfwatershed.org    | Ryan Neuman                | PUJC1S - Jenkintown Creek, Cadwalader Rd            |              |               | Yes     | No                          | 0                    | inches      |
| 15 | 8/23/2018 14:37:18 | lbm@wctrust.org          | Hertz, Trivedi             | PURC2S - Ridley Creek, downstream of Ashbridge Lake |              |               | No      | No                          |                      |             |
| 16 | 8/23/2018 14:34:45 | lbm@wctrust.org          | Hertz, Trivedi             | PURC1S - Ridley Creek, upstream of Ashbridge Lake   |              |               | Yes     | No                          |                      |             |
| 17 | 8/22/2018 15:58:17 | rmj21332@gmail.com       | Rachel Johnson             | ROCK_US3 - Rocky Run, Upper                         |              |               | No      | No                          |                      |             |
| 18 | 8/21/2018 19:55:07 | abarney@ptd.net          | Al Barney                  | ULBC2S - Buckwa Creek, Upstream of ULBC1S (SL122)   |              |               |         | Yes                         |                      |             |
| 19 | 8/21/2018 14:57:55 | lbm@wctrust.org          | Hertz, Trivedi             | PURC1S - Ridley Creek, upstream of Ashbridge Lake   |              |               | Yes     | No                          |                      |             |
| 20 | 8/21/2018 14:57:02 | lbm@wctrust.org          | Hertz, Trivedi             | PURC2S - Ridley Creek, downstream of Ashbridge Lake |              |               | No      | No                          |                      |             |
| 21 | 8/21/2018 10:03:16 | dbressler@stroudcenter.o | David Bressler, Harris, Tu | ROCK_US3 - Rocky Run, Upper                         |              |               | Yes     | Yes                         | 1.5                  | inches      |
| 22 | 8/21/2018 8:11:40  | kevroth4@gmail.com       | Kevin Roth, Walter K.      | PUPP2S - Pennypack Creek near parkway               |              |               | No      | No                          |                      |             |
| 23 | 8/21/2018 8:09:30  | kevroth4@gmail.com       | Kevin Roth                 | PUPP2S - Pennypack Creek near parkway               |              |               | Yes     | Yes                         | 1.23                 | inches      |
| 24 | 8/21/2018 8:06:13  | kevroth4@gmail.com       | Kevin Roth, Richard Terry  | PUPP2S - Pennypack Creek near parkway               |              |               | No      | Yes                         | 0.16                 | inches      |

# Monitor My Watershed

Access data via either of these

The screenshot shows the Monitor My Watershed website. The browser address bar displays <https://monitormywatershed.org>. The navigation bar includes the logo, "Browse Sites", and "Time Series Analyst" (with an external link icon). On the right, there are links for "Help", "Log In", and "Sign Up". The main content area features a large background image of a stream with a table and equipment in the foreground. Overlaid on this image are the logos for "EnviroDIY" and "Leaf Pack Network". Below the logos, the text "Data Sharing Portal" is prominently displayed, followed by the prompts "Contribute your water-quality data" and "Ready to start sharing your data?". A teal "SIGN UP" button is positioned below these prompts. At the bottom of the page, a section titled "How It Works" explains that the platform supports multiple types of water-quality data and includes a link to "Share and Explore Sensor Datasets".

Monitor My Watershed® Browse Sites Time Series Analyst

Help Log In Sign Up

EnviroDIY Leaf Pack Network

Data Sharing Portal

Contribute your water-quality data

Ready to start sharing your data?

SIGN UP

How It Works

Monitor My Watershed supports multiple types of water-quality data.

Share and Explore Sensor Datasets



# Monitor My Watershed

Search via data types, organizations (station owner), or site type on a site to access that site's data

Or Search for sites based on stream name, SiteID, etc.

Or Click on a site to access that site's data

The screenshot displays the Monitor My Watershed web application. The browser address bar shows the URL <https://monitormywatershed.org/browse/>. The page header includes the site logo, a "Browse Sites" button (circled in red), and links for "Time Series Analyst", "Help", "Log In", and "Sign Up".

Below the header, a teal banner reads: "Browse Data Collection Sites. Browse all sites that have been registered in the database by all users. Clicking on a site shows its details and provides a link to view the data collected at that site." Below this banner is a search bar labeled "Search sites..." and a "Map" button.

On the left side, there is a sidebar with three filter categories: "Data Types", "Organizations", and "Site Types". Each category has a dropdown arrow. A red arrow points from the text "Search via data types, organizations (station owner), or site type on a site to access that site's data" to the "Data Types" filter.

The main area of the page is a map of the Northeast United States, showing various cities and rivers. Numerous colored pins are placed on the map, representing different data collection sites. A red arrow points from the text "Or Click on a site to access that site's data" to one of these pins.

At the bottom of the map, a status bar indicates "Showing 317 out of 317 results." A legend in the bottom right corner provides information about the pins: "Data Age" (green for last 6 hours, light green for last 72 hours, yellow for last 2 weeks, red for out of date, grey for no data) and "Ownership" (green for sites you own, light green for sites you do not own).



# Monitor My Watershed

Click on a site marker to access basic site info.

Click on “View data for this site” to access data

The screenshot shows the Monitor My Watershed website interface. The browser address bar displays <https://monitormywatershed.org/browse/>. The page header includes the logo, navigation links for "Browse Sites" and "Time Series Analyst", and user options for "Help", "Log In", and "Sign Up".

The main content area is titled "Browse Data Collection Sites" and includes a sub-header: "Browse all sites that have been registered in the database by all users. Clicking on a site shows its details and provides a link to view the data collected at that site." The interface features a sidebar on the left with filters for "Data Types", "Organizations", and "Site Types", along with an "Auto Zoom" toggle and a "CLEAR" button. The main map area shows a topographic view of Stroudsburg, PA, with a search bar and map controls. A site marker for PKCV2S is highlighted, and a popup window displays the following information:

|                    |   |
|--------------------|---|
| Site Code          | PKCV2S  |
| Site Name          | Cherry Creek Downstream                             |
| Latitude           | 40.9732   |
| Longitude          | -75.1695  |
| Elevation          | 105 m   |
| Latest Measurement | Aug. 9, 2019, 8:20 a.m. (UTC-05:00) (4 minutes ago) |

Below the table is a link that says "View data for this site". A red arrow points from the instruction text above to this link. The bottom of the map shows "Showing 317 out of 317 results." and a legend for data age and ownership.

# Monitor My Watershed

Click on a site marker to access basic site info.

Click on “View data for this site” to access data

The screenshot shows the Monitor My Watershed website interface. The browser address bar displays <https://monitormywatershed.org/browse/>. The page header includes the logo, navigation links for "Browse Sites" and "Time Series Analyst", and user options for "Help", "Log In", and "Sign Up".

The main content area is titled "Browse Data Collection Sites" and includes a sub-header: "Browse all sites that have been registered in the database by all users. Clicking on a site shows its details and provides a link to view the data collected at that site." The interface features a sidebar on the left with filters for "Data Types", "Organizations", and "Site Types", along with an "Auto Zoom" toggle and a "CLEAR" button. The main map area shows a topographic view of Stroudsburg, PA, with a search bar and map controls. A site marker for PKCV2S is highlighted, and a popup window displays the following information:

|                    |   |
|--------------------|---|
| Site Code          | PKCV2S  |
| Site Name          | Cherry Creek Downstream                             |
| Latitude           | 40.9732   |
| Longitude          | -75.1695  |
| Elevation          | 105 m   |
| Latest Measurement | Aug. 9, 2019, 8:20 a.m. (UTC-05:00) (4 minutes ago) |

Below the table is a link that says "View data for this site". A red arrow points from the instruction text above to this link. The bottom of the map shows "Showing 317 out of 317 results." and a legend for data age and ownership.

# Monitor My Watershed

https://monitormywatershed.org/sites/PKCV2S/

Watershed<sup>®</sup> Browse Sites Time Series Analyst

## Cherry Creek Downstream (PKCV2S)

|                   |                             |
|-------------------|-----------------------------|
| Deployment By     | Paul Wilson                 |
| Organization      | East Stroudsburg University |
| Registration Date | April 3, 2017, 9:50 p.m.    |
| Deployment Date   | May 4, 2017, 1:35 p.m.      |
| Latitude          | 40.9732                     |
| Longitude         | -75.1695                    |
| Elevation (m)     | 105.0                       |
| Elevation Datum   | -                           |
| Site Type         | Stream                      |
| Stream Name       | Cherry Creek                |
| Major Watershed   | -                           |
| Sub Basin         | -                           |





# Monitor My Watershed

Time Series Analyst (TSA) – visualize (graph) data, single parameter and all parameters



<https://monitormywatershed.org/sites/PKCV2S/>

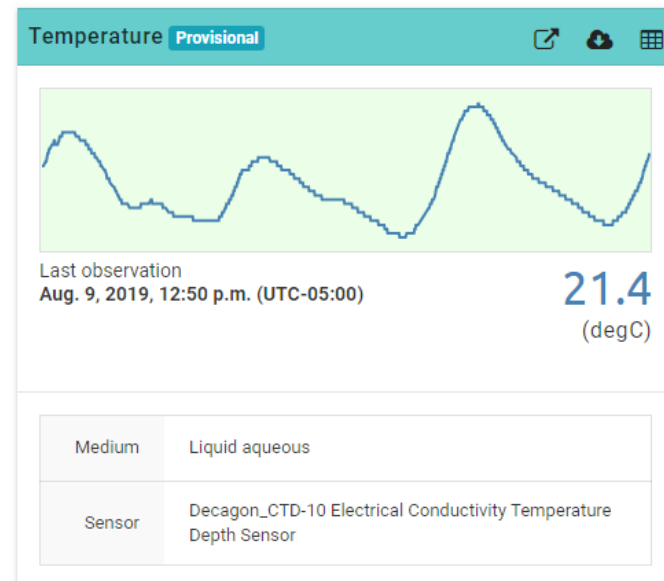
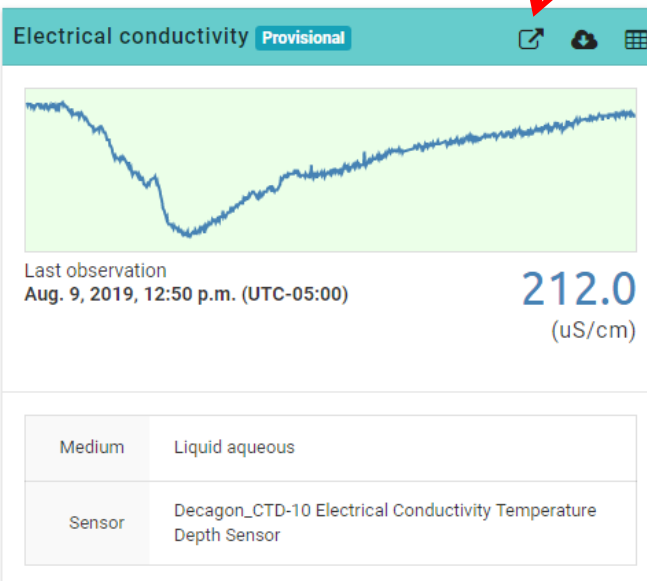
## Sensor Observations at this Site



DOWNLOAD SENSOR DATA

**i** Only the most recent 72 hours of available data are shown on the sparkline plots. The plots are broken when there are gaps in the data longer than 6 hours. Plots shaded in green have recent data. Plots shaded in red have not reported data in the last 72 hours.

 **Time Series Analyst**  
View data for this site.  
Related Link 




# Monitor My Watershed

Data files (Excel) – single parameter and all parameters

<https://monitormywatershed.org/sites/PKCV2S/>

## Sensor Observations at this Site



 **DOWNLOAD SENSOR DATA**

**i** Only the most recent 72 hours of available data are shown on the sparkline plots. The plots are broken when there are gaps in the data longer than 6 hours. Plots shaded in green have recent data. Plots shaded in red have not reported data in the last 72 hours.



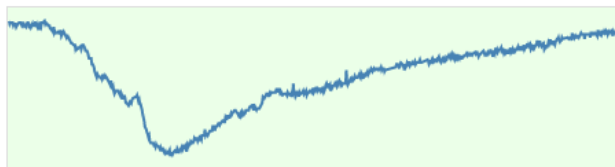
**Time Series Analyst**

View data for this site.

Related Link



### Electrical conductivity **Provisional**



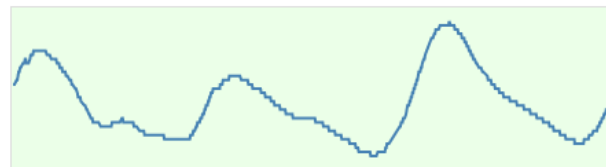
Last observation  
Aug. 9, 2019, 12:50 p.m. (UTC-05:00)

**212.0**  
(uS/cm)

Medium Liquid aqueous

Sensor Decagon\_CTD-10 Electrical Conductivity Temperature Depth Sensor

### Temperature **Provisional**



Last observation  
Aug. 9, 2019, 12:50 p.m. (UTC-05:00)

**21.4**  
(degC)

Medium Liquid aqueous

Sensor Decagon\_CTD-10 Electrical Conductivity Temperature Depth Sensor



# Monitor My Watershed

<https://monitormywatershed.org/sites/PKCV2S/>

72hr recent data table

## Sensor Observations at this Site



DOWNLOAD SENSOR DATA

**i** Only the most recent 72 hours of available data are shown on the sparkline plots. The plots are broken when there are gaps in the data longer than 6 hours. Plots shaded in green have recent data. Plots shaded in red have not reported data in the last 72 hours.



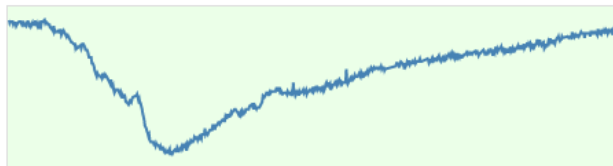
**Time Series Analyst**

View data for this site.

Related Link



### Electrical conductivity Provisional



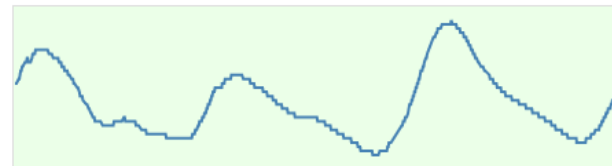
Last observation  
Aug. 9, 2019, 12:50 p.m. (UTC-05:00)

**212.0**  
(uS/cm)

Medium Liquid aqueous

Sensor Decagon\_CTD-10 Electrical Conductivity Temperature Depth Sensor

### Temperature Provisional



Last observation  
Aug. 9, 2019, 12:50 p.m. (UTC-05:00)

**21.4**  
(degC)

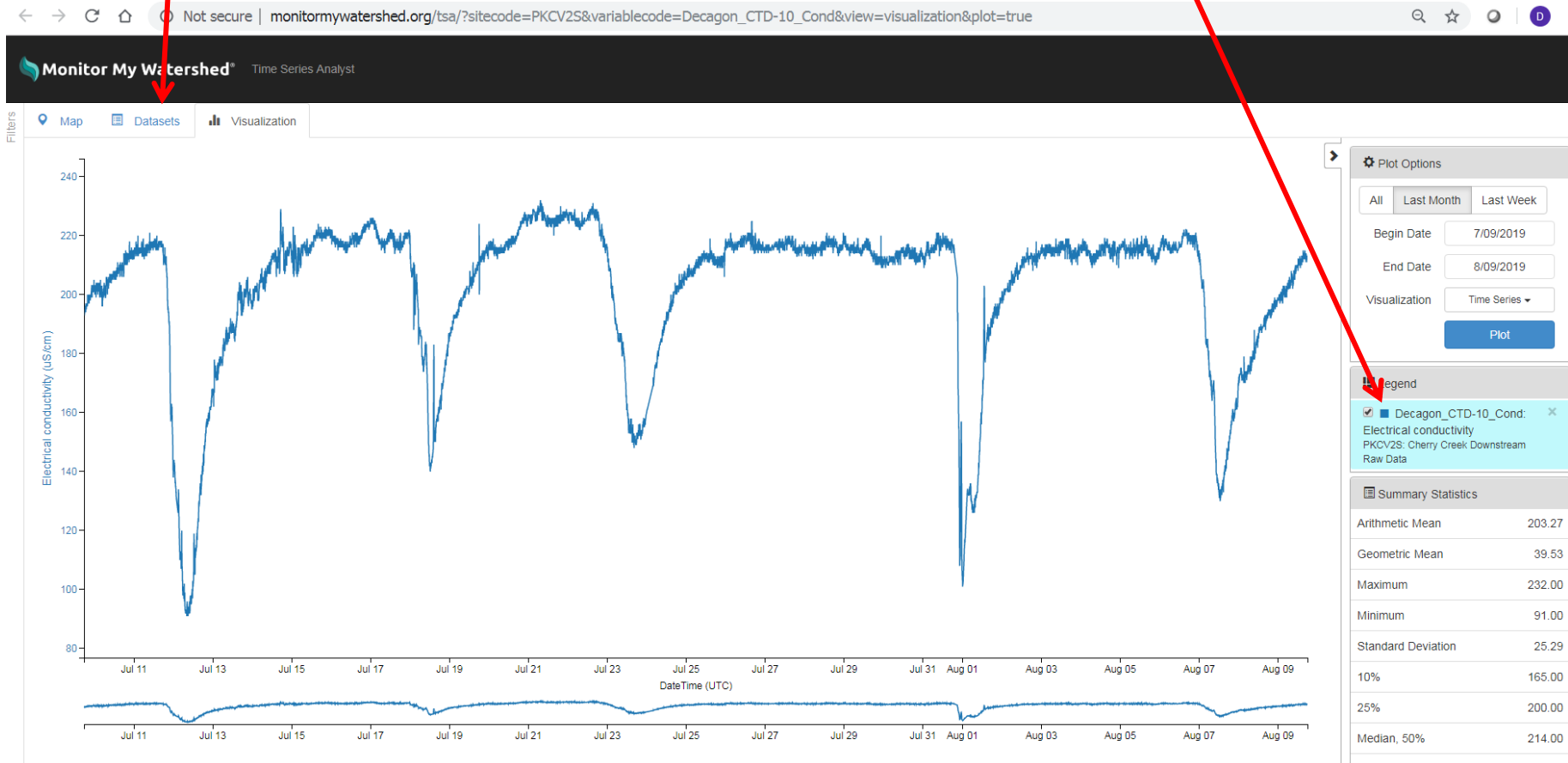
Medium Liquid aqueous

Sensor Decagon\_CTD-10 Electrical Conductivity Temperature Depth Sensor

# Monitor My Watershed

Add in additional parameters from this site and/or others

Single parameter visualization



# Monitor My Watershed

Add additional sites

Add additional parameters – need to click them on at both spots

← → ↻ 🏠 🔒 Not secure | [monitormywatershed.org/tsa/?sitecode=PKCV2S&variablecode=Decagon\\_CTD-10\\_Cond&view=visualization&plot=true](http://monitormywatershed.org/tsa/?sitecode=PKCV2S&variablecode=Decagon_CTD-10_Cond&view=visualization&plot=true) 🔍 ☆ 🔄 | D ⋮

**Monitor My Watershed** Time Series Analyst

Filters

- Network
  - EnviroDIY 3
- Site
  - ☒ Cherry Creek Downstream 3
  - ☐ Manistee River 3
  - ☐ Pere Marquette 60th 3
  - ☐ Pere Marquette M3 3
  - ☐ Rum Creek 3
  - ☐ Rogue River 3
  - Show more
- Variable Category
  - Water quality 2
  - Hydrology 1
- Variable
  - ☒ Decagon\_CTD-10\_Temp, Temperature 1
  - ☒ Decagon\_CTD-10\_Depth, Water depth 1
  - ☒ Decagon\_CTD-10\_Cond, Electrical conductivity 1
  - ☐ Campbell\_OBS3\_Turb, Turbidity 2
  - ☐ EnviroDIY\_Mayfly\_Batt, Battery voltage 1
  - ☐ EnviroDIY\_Mayfly\_Temp, Temperature 1
- Quality Control Level
  - Raw Data 3
- Variable Level
  - Common 3

Map Datasets Visualization

Search

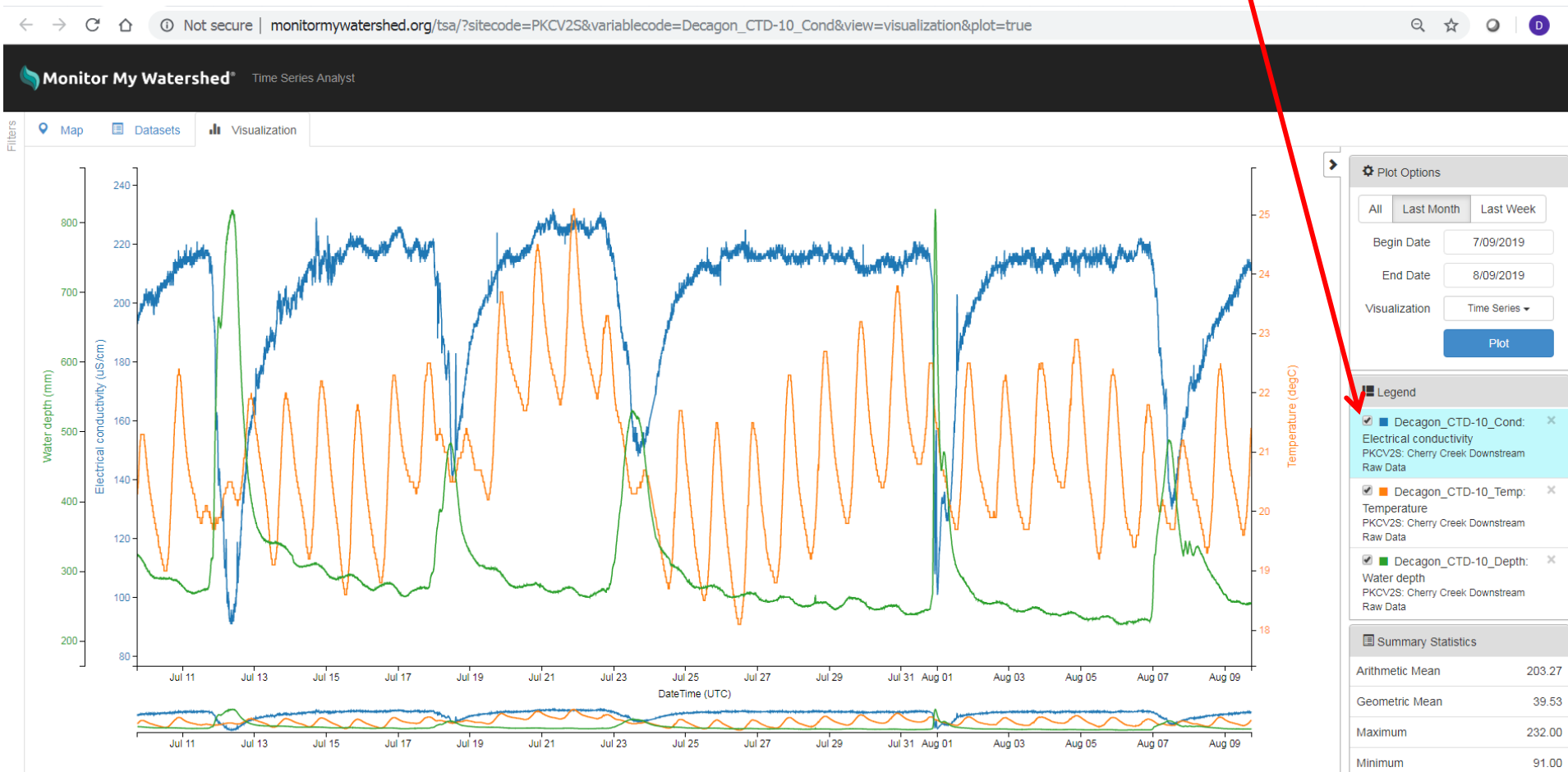
Show All Show Selected Clear Selected Export selected (.zip) Show / hide columns

| Plot                                | Series | Network   | Site Code | Variable Code        | Variable Name           | Quality Control Level | Number Observations |
|-------------------------------------|--------|-----------|-----------|----------------------|-------------------------|-----------------------|---------------------|
| <input type="checkbox"/>            | 72     | EnviroDIY | PKCV2S    | Decagon_CTD-10_Temp  | Temperature             | Raw Data              | 227195              |
| <input checked="" type="checkbox"/> | 71     | EnviroDIY | PKCV2S    | Decagon_CTD-10_Cond  | Electrical conductivity | Raw Data              | 229794              |
| <input type="checkbox"/>            | 73     | EnviroDIY | PKCV2S    | Decagon_CTD-10_Depth | Water depth             | Raw Data              | 225314              |

Showing 1 to 3 of 3 entries (filtered from 1,626 total entries)

# Monitor My Watershed

Graph multiple parameters from one site



# Monitor My Watershed

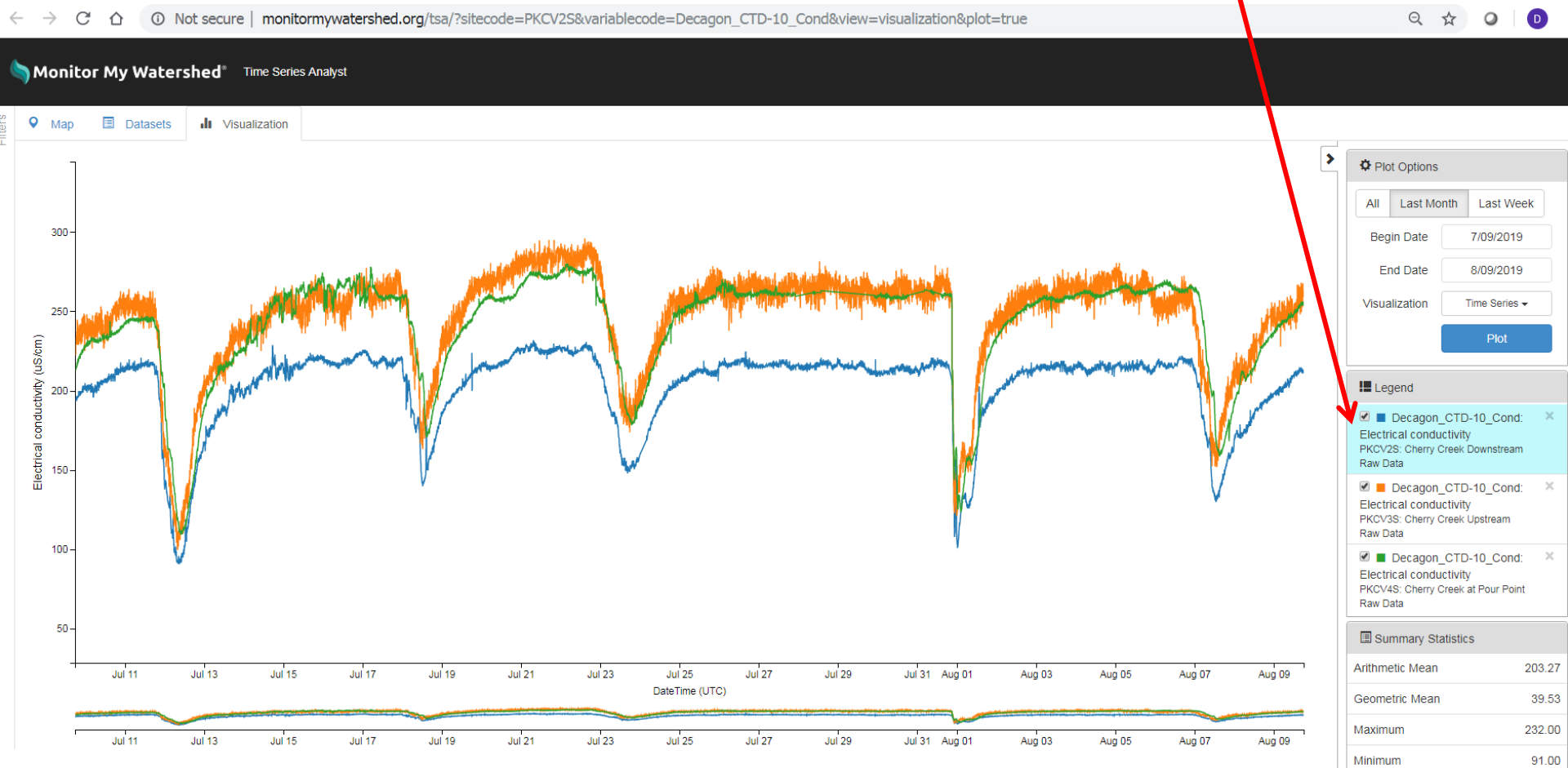
Graph multiple parameters from one site





# Monitor My Watershed

Graph parameter from multiple sites



# Monitor My Watershed

Use cursor to zoom in on selected time ranges



# Monitor My Watershed

Select data range using tabs or by typing in date ranges



# Thanks!



David W. Bressler  
Citizen Science Project Facilitator  
Stroud Water Research Center  
410-456-1071 (mobile)  
610-268-2153 x312 (office)  
[dbressler@stroudcenter.org](mailto:dbressler@stroudcenter.org)