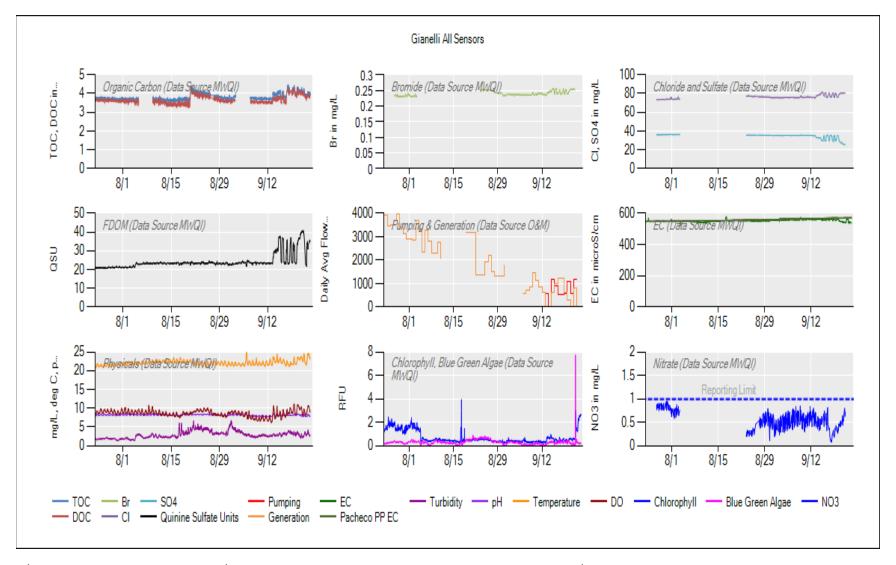
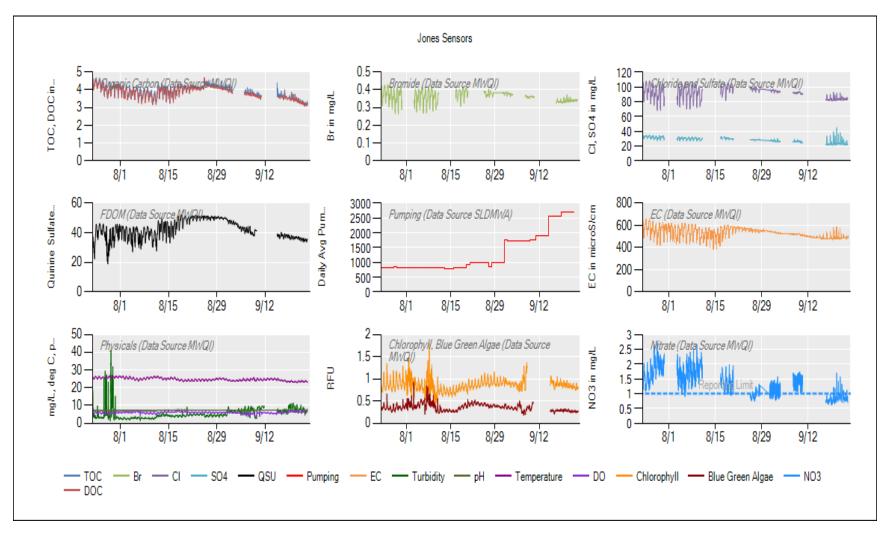


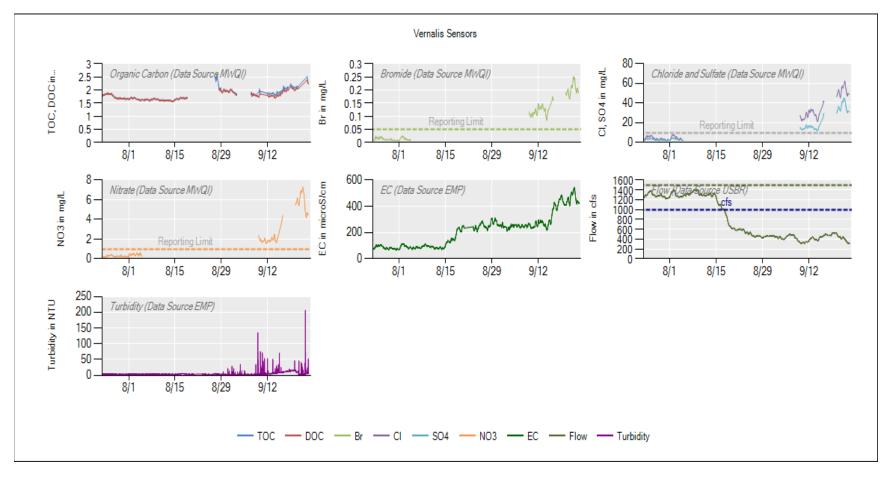
7/29: Carbon analyzer troubleshoot, exchanged sonde -8/4: Power outage -8/11: Replaced all sample delivery filters and cleaned C3 and YSI -8/17: Computer was off -9/2: Replaced all sample delivery filters, replaced sonde, cleaned C3 -9/8: Calibrated EC probe -9/15: Replaced all sample delivery filters, cleaned C3 and YSI, replaced consumables on anion analyzer -9/20: Power outage, restarted computer



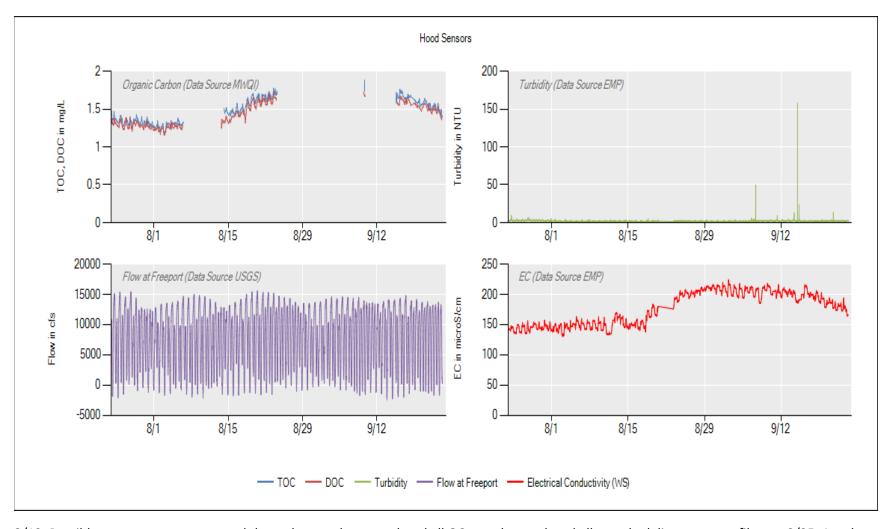
8/4: Replaced sonde, cleaned inlet/outlet tubes, anion analyzer troubleshoot, not resolved -8/20: Analyzed carbon QC samples, partially successful anion analyzer troubleshoot, re-established communication with one of the components but not able to get it to run -8/30: Annual maintenance performed on the anion analyzer, cleaned carbon sample valves, cleaned sonde housing and lines -9/17: Analyzed all QC samples, replaced sample delivery system filters, cleaned anion sample prep module -9/22: Replaced sonde



8/11: Replaced all sample delivery filters, replaced sonde, calibrated anion analyzer – 8/25: Replaced 100 um sample delivery filter, rinsed sonde, and flow cell, cycled SPM power – 9/15: Power outage, restarted computer and anion analyzer, replaced all sample delivery system filters, rinsed sonde, flushed anion analyzer lines – 9/17: reset power to modem – 9/22: Replaced consumable on anion analyzer, had issue with noting the serial number for the part change, will work with the manufacturer to solve



8/26: Possible power outage, restarted all of the programs, analyzed all QC samples on the carbon analyzer, the anion analyzer is still down, waiting for a consumable part, replaced all sample delivery system filters – 9/2: Installed consumable part on the anion analyzer, cleaned sample line with  $H_2O_2$ , set analyzer to calibrate – 9/8: Previous anion calibration was not acceptable, installed a new separation column and set to calibrate again, a wiring issue with the valves that control the carbon analyzer was found and repaired, cleared vegetation around the submersible sample pump – 9/15: The anion analyzer stopped this morning due to a component communication error – 9/16: 2021 anion data was archived from January to August, the analyzer began running after the archive event – 9/20: The anion analyzer stopped again with the same error as before, the software was reset and the analyzer began running again.



8/13: Possible power outage, restarted the carbon analyzer, analyzed all QC samples, replaced all sample delivery system filters – 8/25: Another possible power outage, the carbon analyzer stopped running – 8/26: Possible main board issue with the carbon analyzer, symptoms are similar to ones encountered in the past on other carbon instruments – 9/3: Contacted the carbon analyzer manufacturer for help troubleshooting the issue with the analyzer, tried various things, found that the main system board needs replacement – 9/9: Replaced the motherboard with the one from the old Gianelli analyzer and it worked, installed the latest firmware update, touch screen is having an issue, it won't let you press certain buttons – 9/15: Replaced all sample delivery system filters, replaced the intake and waste lines, cleaned a component on the analyzer

