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| **Metadata: Castle Point Buoy Station (inactive)**  **C:\HRECOS\HRECOS_logo.small.TIF**  **Location:** Stevens Institute, Hoboken, NJ ([40.743250, -74.022817](https://www.google.com/maps/place/40%C2%B044'35.7%22N+74%C2%B001'22.1%22W/@40.7432589,-74.0246027,456m/data=!3m1!1e3!4m5!3m4!1s0x0:0x0!8m2!3d40.74325!4d-74.022817))  **Data collection periods:**  (1) 1/1/2008 -11/15/11  (2) 7/16/14 to 12/07/17  *Note: buoy was periodically removed due to ice*  **Parameters:** Surface water salinity, temperature,acidity, dissolved oxygen, and turbidity. | |
| **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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| **Data Quality Assurance:**  Data collection and verification have been performed since the re-establishment of this station (July 2014) according to the HRECOS Quality Assurance Project Plan, which is available at [www.hrecos.org](http://www.hrecos.org) . See relevant section on following pages for QAQC flag and comment code definitions. | |
| **Location and equipment:**  The Castle Point Buoy Station is moored near the western shore of the Hudson River off the Stevens Institute campus in Hoboken, NJ. It is moored in approximately 30’ of water and is 350’ from the shoreline. The buoy is approximately 4’ in diameter and 7’ high from water level. A two-point mooring consisting of 4 pyramid anchors are utilized to prevent excess drift and spin. The sensor package on the buoy during period (1) consisted of a YSI 6600EDS sonde (temperature, salinity at ~1 m depth) and RM Young meteorological sensors (wind speed and direction, air temperature, relative humidity and solar radiation). Dew point was calculated from measured parameters. The sensor package during period (2) includes only a YSI 6600 sonde (temperature, salinity, acidity, turbidity and dissolved oxygen). A bottom YSI sonde was added on a nearby pier in summer 2016 (see data and metadata for Castle Point Pier Station). | |
| **Special remarks / notes:**   * 11/16/2011 – Station become inactive due to communications equipment failure, damage from Hurricane Sandy, and lack of funding for repairs. * 7/16/2014 – Station revived and redeployed. * 8/27/2014 – Severe biofouling found upon recovery of first redeployment. Increased biofouling measure used for subsequent deployments. * 4/13/2015 – Seasonal deployment began. Turbidity measurements officially begin. * 10/27/2015 – recovered and found severe biofouling * 8/2/2016 sonde recovery – turbidity, salinity and pH probes were severely biofouled. * 11/3/2016 sonde recovery – biofouled. Good data for first half of deployment. * 7/18/2017 sonde deployment had a sonde with no turbidity probe – just a blank. The pH probe had a very low mV difference after deployment and a fairly large low-bias, so data were marked suspicious * 9/7/2017 deployment had communications error, no good data was transmitted | |
| **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 | Notes |
| **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 |
| **Salinity (calculated)** | Parts per thousand (ppt) | Calculated from cond. and temp. | N/A | 0 – 70 ppt | +/‐ 1.0% of reading or 0.1ppt | 0.01 ppt | NA |
| **Specific Conductance** | Microsiemens per cm (µS/cm) | Nickel electrode | YSI 6560 | 0 – 100 µS/cm | ±-0.5% + 0.001 µS/cm | 0.001 – 0.1 µS/cm (range dependent) | NA |
| **Dissolved oxygen** | Air saturation (%)  ⎯⎯⎯⎯  mg/L | Optical, luminescence lifetime ⎯⎯⎯⎯  Calculated | 599100-01 | 0 – 500%  ⎯⎯⎯⎯  0 – 50 mg/L | 0 – 200%: ±1%  200 – 500%: ±5%  ⎯⎯⎯⎯  0 – 20 mg/L: ±0.1 mg/L or 1% (whichever is greater);  20 – 50 mg/L: ±-5% | 0.1%  ⎯⎯⎯⎯  0.01 mg/L | T63<5 sec |
| **Turbidity** | Nephelometric Turbidity Units (NTU) | Optical | YSI 6136 | 0 – 1000 NTU | ±2% or 0.3 NTU (whichever is greater) | 0.1 NTU | NA |
| **Water temperature** | Celsius (°C) | Thermistor | 599870-01 | -5 to +45°C | -5 to 35°C: ±0.01°C  35 to 50°C: ±0.05°C | 0.001°C | T63<1 sec |

**Table 1.** Sensor specifications.