# CZO Metadata Worksheet

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| Data File Name | NY\_weather\_station\_all\_data.docx; VA\_weather\_station\_Ragged\_Mtn\_all\_data.docx; TN\_weather\_station\_all\_data.docx; TN\_weather\_station\_all\_data.docx |
| Date Prepared | 8/1/2014 |
| Descriptive Title | CZO Shale Transect Weather Data, New York site, June 2010 – May 2014; CZO Shale Transect Weather Data, Virginia Ragged Mtn. site, September 2010 – February 2013; CZO Shale Transect Weather Data, Tennessee site, July 2010 – November 2013; CZO Shale Transect Weather Data, Alabama site, July 2010 – November 2013; CZO Shale Transect Weather Data, Puerto Rico site, March 2011 – February 2014. Each file contains three tabs: Continuous sensor measurements (Samp), daily ETo calculations (ETo), and notes pertaining to the installation and maintenance of the instruments. |
| Update Frequency | Quarterly |
| Abstract | Weather stations deployed across the CZO Shale Transect, including sites in New York, Virginia, Tennessee, Alabama and Puerto Rico, provide continuous measurements of climatic conditions influencing shale weathering. Measurements are recorded every two hours and include precipitation, air temperature, relative humidity, solar radiation, wind speed, soil temperature, soil moisture and soil electrical conductivity. Data output from each weather station will help researchers understand the effects of climate on shale weathering and soil processes in various climates.  Annual datasets have been registered with the EarthChem Library and assigned dataset DOI’s. Please reference the associated DOI below for any research derived from this data.  New York Weather Station Data 2010: [doi:10.1594/IEDA/100459](http://dx.doi.org/10.1594/IEDA/100459)  New York Weather Station Data 2011: [doi:10.1594/IEDA/100460](http://dx.doi.org/10.1594/IEDA/100460)  New York Weather Station Data 2012: [doi:10.1594/IEDA/100461](http://dx.doi.org/10.1594/IEDA/100461)  New York Weather Station Data 2013: [doi:10.1594/IEDA/100462](http://dx.doi.org/10.1594/IEDA/100462)  Virginia Weather Station Data 2010: [doi:10.1594/IEDA/100474](http://dx.doi.org/10.1594/IEDA/100474)  Virginia Weather Station Data 2011: [doi:10.1594/IEDA/100475](http://dx.doi.org/10.1594/IEDA/100475)  Virginia Weather Station Data 2012: [doi:10.1594/IEDA/100476](http://dx.doi.org/10.1594/IEDA/100476)  Virginia Weather Station Data 2013: [doi:10.1594/IEDA/100477](http://dx.doi.org/10.1594/IEDA/100477)  Tennessee Weather Station Data 2010: [doi:10.1594/IEDA/100470](http://dx.doi.org/10.1594/IEDA/100470)  Tennessee Weather Station Data 2011: [doi:10.1594/IEDA/100471](http://dx.doi.org/10.1594/IEDA/100471)  Tennessee Weather Station Data 2012: [doi:10.1594/IEDA/100472](http://dx.doi.org/10.1594/IEDA/100472)  Tennessee Weather Station Data 2013: [doi:10.1594/IEDA/100473](http://dx.doi.org/10.1594/IEDA/100473)  Alabama Weather Station Data 2010: [doi:10.1594/IEDA/100463](http://dx.doi.org/10.1594/IEDA/100463)  Alabama Weather Station Data 2011: [doi:10.1594/IEDA/100464](http://dx.doi.org/10.1594/IEDA/100464)  Alabama Weather Station Data 2012: [doi:10.1594/IEDA/100465](http://dx.doi.org/10.1594/IEDA/100465)  Alabama Weather Station Data 2013: [doi:10.1594/IEDA/100466](http://dx.doi.org/10.1594/IEDA/100466)  Puerto Rico Weather Station Data 2011: [doi:10.1594/IEDA/100467](http://dx.doi.org/10.1594/IEDA/100467)  Puerto Rico Weather Station Data 2012: [doi:10.1594/IEDA/100468](http://dx.doi.org/10.1594/IEDA/100468)  Puerto Rico Weather Station Data 2013: [doi:10.1594/IEDA/100469](http://dx.doi.org/10.1594/IEDA/100469) |
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| Data Value Descriptions | * COL1: label=TIMESTAMP, UTCOffset=-4, TimeZone=EST. * COL2: label=RECORD. * COL3: label=Battery voltage, Units=V, TimeSupport=120 min, DataType=Minimum. * COL4: label=RH (Relative humidity), Units=%, Offset=168 cm, OffsetDescription=height of sensor above ground, SampleMedium=Air, TimeSupport=120 min, DataType=Sample. * COL5: label=Air\_TC (Air Temperature), Units=C, Offset=168 cm, OffsetDescription=height of sensor above ground, SampleMedium=Air, TimeSupport=120 min, DataType=Sample. * COL6: label= Wind\_SPD (Wind speed), Units=m/s, Offset=204 cm, OffsetDescription=height of sensor above ground, SampleMedium=Air, TimeSupport=120 min, DataType=Sample. * COL7: label= Wind\_SPD\_Avg (Wind speed average), Units=m/s, Offset=204 cm, OffsetDescription=height of sensor above ground, SampleMedium=Air, TimeSupport=120 min, DataType=Average. * COL8: label=Rain\_mm (Precipitation), Units=mm, SampleMedium=Precipitation, TimeSupport=120 min, DataType=Sample. * COL9: label=Rain\_mm\_Tot (Total Precipitation), Units=mm, SampleMedium=Precipitation, TimeSupport=120 min, DataType=Total. * COL10: label=Solar\_Rad (Solar radiation), Units=W/m2, Offset=168 cm, OffsetDescription=height of sensor above ground, SampleMedium=Air, TimeSupport=120 min, DataType=Sample. * COL11: label=VWC (Volumetric Water Content), Units=dielectric\*50, Offset=20 cm, OffsetDescription=height of sensor below ground, SampleMedium=Soil, TimeSupport=120 min, DataType=Samples. * COL12: label=EC (Electrical Conductivity), Units=dS/m, Offset=20 cm, OffsetDescription=height of sensor below ground, SampleMedium=Soil, TimeSupport=120 min, DataType=Sample. * COL13: label=Ground\_TC (Ground Temperature), Units=C, Offset=20 cm, OffsetDescription=height of sensor below ground, SampleMedium=Soil, TimeSupport=120 min, DataType=Sample. |
| Keywords | Shale, soil, temperature, moisture, relative humidity, precipitation, wind speed, solar radiation, electrical conductivity |
| Methods | * Wind speed measured with a Secondwind 3C Anemometer, <http://www.secondwind.com> * Precipitation measured with a Texas Electronics Rain Gage (TE525-ET), <http://www.campbellsci.com> * Air temperature measured with a Campbell Scientific HMP45C Temperature and Relative Humidity Probe, <http://www.campbellsci.com> * Relative humidity measured with a Campbell Scientific HMP45C Temperature and Relative Humidity Probe, <http://www.campbellsci.com> * Solar radiation measured with a Davis Instruments Vantage Pro2 Solar Radiation Sensor, <http://www.davis.com> * Soil moisture, electrical conductivity and temperature measured with a Decagon 5TE Sensor, <http://www.decagon.com> |
| Citation | The following acknowledgment should accompany any publication or citation of these data: Logistical support and/or data were provided by the NSF-supported Shale Hills Susquehanna Critical Zone Observatory. |
| Publications | None |
| Data Use Notes | The user of Shale Hills Susquehanna CZO data agrees to provide proper acknowledgment with each usage of the data. Citation of the name(s) of the investigator(s) responsible for the data set, in addition to the generic statement above, constitutes proper acknowledgment. Author(s) (including Shale Hills Susquehanna CZO investigators) of published material that makes use of previously unpublished Shale Hills Susquehanna CZO data agree to provide the Shale Hills Susquehanna CZO data manager with four (4) copies (preferably reprints) of that material for binding as soon as it becomes available. The user of Shale Hills Susquehanna CZO data agrees not to resell or redistribute shared data. The user of these data should be aware that, while efforts have been taken to ensure that these data are of the highest quality, there is no guarantee of perfection for the data contained herein and the possibility of errors exists. These data are defined as either public or private, such that a password may be required for access.  See color coded key in each data file for known problems concerning data quality.  Volumetric Water Content (VWC) data require transformation of output units (dielectric\*50) using the following equation (<http://www.decagon.com/assets/Uploads/13392-03-AN-Calibration-Equations-for-the-ECH2O-EC-5-ECH2o-TE-and-5TE-Sensors.pdf> ):  θ (m3/m3) = 3.44x10-11 \* *Serial* 3 – 2.20x10-7 \**Serial* 2 + 5.84x10-4 \* *Serial* – 5.3x10-2 |