# CZO Metadata Worksheet

|  |  |
| --- | --- |
| Data File Name | Soil Gas Concentration Data |
| Date Prepared | 4/10/2014; Revised 2016-10-18 |
| Descriptive Title | Shale Hills CZO Soil Gas Concentration and Flux Data (Level 0) |
| Update Frequency | Monthly (sporadic) |
| Abstract | The soil CO2 and N2O concentrations and various soil properties for the planar slope and swale sampling locations in the Susquehanna Shale Hills Critical Zone Observatory watershed.  |
| InvestigatorContact Info | Dr. Jason Kaye, Assistant Professor of Soil Biogeochemistry, Department of Agriculture, 416 Ag Sciences & Industries Building, University Park, PA 16802, (814)863-1614, jpk12@psu.eduDr. Elizabeth Hasenmueller, Assistant Professor, Department of Earth & Atmospheric Sciences, Saint Louis University, 3642 Lindell Blvd., Saint Louis, MO 63108, 1-977-7518, hasenmuellerea@slu.edu.Julie Weitzman, Graduate Student, The Pennsylvania State University, 116 ASI Building, University Park, PA 16801, 1-814-863-9804, jnw142@psu.edu.  |
| Data Value Descriptions | * COL1: label = Position – location of where the surface fluxes were collected

|  |  |  |  |
| --- | --- | --- | --- |
| Site Names | Northing | Easting | Elevation (m) |
| South Swale Valley Floor (SSVF) | 147806.8024 | 586835.8015 | 266.11 |
| South Swale Midslope (SSMS) | 147765.3886 | 586842.2178 | 276.09 |
| South Swale Ridge Top (SSRT) | 147735.4487 | 586869.1186 | 286.47 |
| South Planar Valley Floor (SPVF) | 147815.4127 | 586786.8822 | 263.29 |
| South Planar Midslope (SPMS) | 147784.5887 | 586781.198 | 273.83 |
| South Planar Ridge Top (SPRT) | 147751.019 | 586777.4449 | 283.91 |

* COL2: label = Date samples were collected(mm/dd/yyyy)
* COL3: label = Flux (ug N2O-N/m2/hr); Soil surface flux of N2O; Units: ug N2O-N/m2/hr
* COL4: label = Flux(mg CO2-C/m2/hr); Soil surface flux of CO2; Units: mg CO2-/m2/hr
* COL5: label = Air Temperature; Soil surface air temperature at time of sampling; Units: degrees C
 |
| Keywords | CO2 Concentration, Soil CO2, N2O Concentration, Soil N2O, CO2 Flux |
| Methods |  2013-2014:* Soil gas measured in situ using a Model 1412 Infrared Photoacoustic Spectroscopy (PAS) gas analyzer powered by a model EU1000i portable electric Honda generator. All gas flux sampling took place between 09:00 and 13:00 hours – the time of lowest diurnal temperature variability. Flux determined by measuring gas concentration change over time based on the steady state chamber collar method.

2016* Soil surface N2O & CO2 (for June 2016) gas measured by collecting soil gas every 15 minutes for 1 hour into exetainer vials, returning the vials to the lab, and analyzing the sample gases on a gas chromatograph (GC). Flux determined by measuring gas concentration change over time based on the steady state chamber collar method.
 |
| 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 | Hasenmueller, E.A., Jin, L., Lin, H., Brantley, S.L., Kaye, J.P. Topographic and depth controls on soil CO2 concentrations in a small temperate watershed, *Applied Geochemistry*, in prep. |
| 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. |