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| Data File Name | GPR\_Grid\_10\_20\_2008 |
| Date Prepared | 3/4/2011 |
| Descriptive Title | Shale Hills CZO GPR grid survey in Rushtown soil |
| Update Frequency | Seasonally |
| Abstract |  |
| Investigator  Contact Info | Dr. Henry Lin, Crop and Soil Science, The Pennsylvania State University, 444 Agricultural Sciences and Industries Building, University Park, PA. 814-865-6726 [henrylin@psu.edu](mailto:henrylin@psu.edu) |
| Data Value Descriptions | * File format is GSSI DZT format * 12 files were collected in a grid with size 15feet (inline) by 11feet (cross line) * 4 markers were inserted with 5 feet interval in each file * 60ns time range was applied to each file * Data must be read by software package such as GPR-SLICE |
| Keywords | Ground penetrating radar, common offset, dielectric constant, soil horizon |
| Methods | Common offset GPR survey without survey wheel  Zigzag survey |
| 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 | Zhang, J. H.S. Lin, and J. Doolittle. 2010. Seasonal GPR Signal Changes in Two Soil-Hillslopes. To be submitted to *Vadose Zone Journal* |
| 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 Author(s) (including Shale Hills Susquehanna CZO investigators) of published material that makes use of previously unpublished Shale Hills Susquehanna CZO data agree to provide the Shale Hills Susquehanna CZO data manager with four (4) copies (preferably reprints) of that material for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. |

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| Data File Name | GPR\_Grid\_11\_10\_2008 |
| Date Prepared | 3/4/2011 |
| Descriptive Title | Shale Hills CZO GPR grid survey in Rushtown soil |
| Update Frequency | Seasonally |
| Abstract |  |
| Investigator  Contact Info | Dr. Henry Lin, Crop and Soil Science, The Pennsylvania State University, 444 Agricultural Sciences and Industries Building, University Park, PA. 814-865-6726 [henrylin@psu.edu](mailto:henrylin@psu.edu) |
| Data Value Descriptions | * File format is GSSI DZT format * 12 files were collected in a grid with size 15feet (inline) by 11feet (cross line) * 4 markers were inserted with 5 feet interval in each file * 60ns time range was applied to each file * Data must be read by software package such as GPR-SLICE |
| Keywords | Ground penetrating radar, common offset, dielectric constant, soil horizon |
| Methods | Common offset GPR survey without survey wheel  Zigzag survey |
| 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 | Zhang, J. H.S. Lin, and J. Doolittle. 2010. Seasonal GPR Signal Changes in Two Soil-Hillslopes. To be submitted to *Vadose Zone Journal* |
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| Data File Name | GPR\_Grid\_4\_24\_2009 |
| Date Prepared | 3/4/2011 |
| Descriptive Title | Shale Hills CZO GPR grid survey in Rushtown soil |
| Update Frequency | Seasonally |
| Abstract |  |
| Investigator  Contact Info | Dr. Henry Lin, Crop and Soil Science, The Pennsylvania State University, 444 Agricultural Sciences and Industries Building, University Park, PA. 814-865-6726 [henrylin@psu.edu](mailto:henrylin@psu.edu) |
| Data Value Descriptions | * File format is GSSI DZT format * 12 files were collected in a grid with size 15feet (inline) by 11feet (cross line) * 4 markers were inserted with 5 feet interval in each file * 60ns time range was applied to each file * Data must be read by software package such as GPR-SLICE |
| Keywords | Ground penetrating radar, common offset, dielectric constant, soil horizon |
| Methods | Common offset GPR survey without survey wheel  Zigzag survey |
| 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 | Zhang, J. H.S. Lin, and J. Doolittle. 2010. Seasonal GPR Signal Changes in Two Soil-Hillslopes. To be submitted to *Vadose Zone Journal* |
| 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. |

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| Data File Name | GPR\_Grid\_5\_27\_2009 |
| Date Prepared | 3/4/2011 |
| Descriptive Title | Shale Hills CZO GPR grid survey in Rushtown soil |
| Update Frequency | Seasonally |
| Abstract |  |
| Investigator  Contact Info | Dr. Henry Lin, Crop and Soil Science, The Pennsylvania State University, 444 Agricultural Sciences and Industries Building, University Park, PA. 814-865-6726 [henrylin@psu.edu](mailto:henrylin@psu.edu) |
| Data Value Descriptions | * File format is GSSI DZT format * 12 files were collected in a grid with size 15feet (inline) by 11feet (cross line) * 4 markers were inserted with 5 feet interval in each file * 60ns time range was applied to each file * Data must be read by software package such as GPR-SLICE |
| Keywords | Ground penetrating radar, common offset, dielectric constant, soil horizon |
| Methods | Common offset GPR survey without survey wheel  Zigzag survey |
| 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 | Zhang, J. H.S. Lin, and J. Doolittle. 2010. Seasonal GPR Signal Changes in Two Soil-Hillslopes. To be submitted to *Vadose Zone Journal* |
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| Data File Name | GPR\_Infiltration\_3\_20\_2008 |
| Date Prepared | 3/4/2011 |
| Descriptive Title | Shale Hills CZO GPR infiltration survey in Weikert soil |
| Update Frequency | Event data—not updated |
| Abstract |  |
| Investigator  Contact Info | Dr. Henry Lin, Crop and Soil Science, The Pennsylvania State University, 444 Agricultural Sciences and Industries Building, University Park, PA. 814-865-6726 [henrylin@psu.edu](mailto:henrylin@psu.edu) |
| Data Value Descriptions | * File format is GSSI DZT format * 4 files were collected in a 3-m transect. Files are collected at dry condition and 5min, 15min and 30min after infiltration * 4 markers were inserted with 1 meter interval in each file * 25ns time range was applied to each file * Data must be read by software package such as GPR-SLICE |
| Keywords | Ground penetrating radar, common offset, dielectric constant, time-lapse survey |
| Methods | Common offset GPR survey without survey wheel  Time-lapse survey |
| 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 | Zhang, J. H.S. Lin, and J. Doolittle. 2010. Subsurface Lateral Flow as Revealed by Combined Ground Penetrating Radar and Real-Time Soil Moisture Monitoring. *Hydrological Processes* (in revision). |
| 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. |

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| Data File Name | GPR\_Infiltration\_4\_30\_2008 |
| Date Prepared | 3/4/2011 |
| Descriptive Title | Shale Hills CZO GPR infiltration survey in Weikert soil |
| Update Frequency | Event data—not updated |
| Abstract |  |
| Investigator  Contact Info | Dr. Henry Lin, Crop and Soil Science, The Pennsylvania State University, 444 Agricultural Sciences and Industries Building, University Park, PA. 814-865-6726 [henrylin@psu.edu](mailto:henrylin@psu.edu) |
| Data Value Descriptions | * File format is GSSI DZT format * 4 files were collected in a 3-m transect. Files are collected at dry condition and 4min, 15min and 30min after infiltration * 4 markers were inserted with 1 meter interval in each file * 35ns time range was applied to each file * Data must be read by software package such as GPR-SLICE |
| Keywords | Ground penetrating radar, common offset, dielectric constant, time-lapse survey |
| Methods | Common offset GPR survey without survey wheel  Time-lapse survey |
| 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 | Zhang, J. H.S. Lin, and J. Doolittle. 2010. Subsurface Lateral Flow as Revealed by Combined Ground Penetrating Radar and Real-Time Soil Moisture Monitoring. *Hydrological Processes* (in revision). |
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