

Shale Network 2016 Workshop, www.shalenetwork.org, May 19-20, 2016

Atherton Hotel (State College PA) and 203 IST Building (PSU)

Science and Cooperation Around Water Quality Data and Legacy Wells

Thursday, May 19		
12:00-2:00 pm	Field Trip: Orphan and Abandoned Oil and Gas Wells: An Introductory Field Trip (meeting place to be announced)	
2:00-2:30 pm	Registration will take place in Atherton Hotel Lobby (introduction of participants)	
2:30 pm	Computer module participants meet in Lobby @ 2:30 pm and walk together to computer lab on PSU campus – 203 IST Building (20 minute walk)	
3:00 - 5:00 pm	Computer Module Demonstration and Hands-On Exercise: “Using Methane Concentrations in Streams to Investigate for Potential Leakage of Oil and Gas Wells in Pennsylvania: Using CUAHSI and Pennsylvania DEP Online Data Tools” 203 IST Building	Liza Brazil (CUAHSI), Lindsay Byron & Stew Beattie (PA DEP); Susan Brantley, Nooreen Meghani (PSU)
5:30 pm	Poster set up in Regency Ballroom (Posters can be viewed Thursday evening and until Friday)	
6:00 - 9:30 pm	Poster Session with reception and cash bar – Regency Ballroom (Registration from 6pm – 7 pm)	
Posters		
<p>Elin Betanzo (Northeast-Midwest Institute), Erik R. Hagen, John T. Wilson, Kenneth H. Reckhow, Laura Hayes, Denise M. Argue – “Water Data to Answer Urgent Water Policy Questions: Shale Gas Development in the Susquehanna River Basin”</p> <p>Liza Brazil (CUAHSI) – “Tools & Support for Integrating Real Water Data into Education”</p> <p>Lindsay Byron (PA DEP), Stewart Beattie – “CFA OAWP Grant Program”</p> <p>Katherine Farnsworth (Indiana Univ of PA), Cindy Rogers – “Collaboration Builds a Database of Stream Parameters in Indiana County”</p> <p>Thomas Geeza (Penn State Univ), Nathaniel Warner – “Trace and Major Element Ratios in <i>Elliptio Dilatatus</i> Shells as Indicators of Surface Water Quality in Western Pennsylvania”</p> <p>Dana Heston (USGS), Dennis J. Low, Dan Galeone – “Using Pennsylvania’s Groundwater-drought-network Wells to Monitor Long-term Changes in Groundwater-quality”</p> <p>Ken Johnson (CCPASEC Senior Environmental Corp) – “Centre County Senior Environmental Corps”</p> <p>M. Khalequzzaman (Lock Haven Univ), Bethany Shaffer, James Fricke – “Modeling of Hydrological Drainage and Sediment Yield Patterns in Marcellus Shale Drilling Region in Central Pennsylvania Using Swat and Topographic Wetness Index”</p> <p>Marika Nell (Cornell Univ), Damian E. Helbling– “Developing Novel Analytical Methods for the Detection and Identification of Polar to Semi-polar Chemical Additives in Hydraulic Fracturing Fluids”</p> <p>Colleen Nolan (Duquesne Univ), Tetiana Kondratyuk, John Stolz, Tyler Umstead – “Unconventional Shale Gas Development and Its Impact on Water Quality in Washington County, Pennsylvania”</p> <p>James Shallenberger (Susquehanna River Basin Comm) – “Marcellus Shale Gas Sediment Control Project”</p> <p>Todd Sowers (Penn State Univ), Erika Beddings, Kristopher Raybon, Tarik Bob, Jasmine Fields, Anna Wendt – “Monitoring Seasonal Fluctuations of Methane in Two Pennsylvania Streams”</p> <p>Teen Shale Network (State College High School), 24 SCHS students, 2 SCHS instructors, 5 Penn State Univ faculty – “Complex Water Quality Data Along Black Moshannon Creek”</p> <p>Travis Tasker (Penn State Univ), John Gattermeyer, Lara Fowler, William Burgos – “A Review of Regulatory History and Management of Gas Waters in Pennsylvania”</p> <p>Tyler Umstead (Duquesne Univ), John Stolz, Tetiana Kondratyuk, Colleen Nolan, Linnea Manley, Daniel Robinson – “Investigation of Water Quality in Proximity to Unconventional Gas Extraction Near Cross Creek County Park, PA”</p>		
Friday, May 20	Atherton Hotel – Regency Ball Room	
7:30 am	Continental Breakfast: Informal Introductions	
8:00 am	Brantley, S.: Welcome to 2016 Workshop; Introduction to Shale Network	

Plenary Talks		
8:20 am	Stewart Beattie (PA DEP) – “Intersections: Legacy and Shale Gas Development”	
8:40 am	Jacob Lemon (Trout Unlimited), Anna Wendt, Todd Sowers, Susan Brantley – “Analysis of Methane Concentrations in Pennsylvania Stream and Groundwater in Collaboration with Citizen Scientists”	
9:00 am	Michael Celia (Princeton Univ), Mary Kang, Denise Mauzerall – “Measurement of Methane Fluxes from Abandoned Wells in Pennsylvania”	
9:20 am	Richard Hammack (US Dept of Energy), James Sams, Garret Veloski, Rod Diehl – “Evaluation of a Rapid Airborne Method for Locating Legacy Wells in Pennsylvania”	
9:40 am	Coffee	
10:00 am	Daniel Bain (Univ. Pitt), Robert .M. Dilmore, James I. Sams III, Deborah Glosser, Kristin M. Carter – “Reconstruction of “Legacy Well” Magnitudes and Distributions in Pennsylvania”	
10:20 am	John Bradshaw (Indiana Univ., PA), Steve Hovan, Nicole Iannacchione, Matthew Lees, Abdulazziz Mdee, Greg Mount, Jeremy Slagley, Robert E. Wilson – “Determination of Methane Leak Rates from Abandoned Gas Wells in Western Pennsylvania”	
10:40 am	Jessie Li (PSU), Guanjie Zheng, Fei Wu, Anna K. Wendt, Matt Gonzales, Susan Brantley, Thomas Lauvaux – “A Data-driven Approach to Evaluate Environmental Impacts of Shale-gas Drilling”	
11: 00 am	<u>Discussion: What should be done about all the old and abandoned oil and gas wells?</u>	
11:20 am	James Shallenberger (Susquehanna River Basin Commission), Jeff Zimmerman, Andrew Leakey, Kimberly Dagen – “Linking Continuous In-stream Monitoring Turbidity Data to Land Use: A Consequence of Roads in the Rural Landscape”	
11:40 am	Bob Hendricks (Shell Exploration and Production Co.) – “Post Well Pad Activity Sampling of Water Supplies”	
12:15 pm	Lunch in the Tarragon Dining Room – Atherton Hotel	
	Room 1 – Regency Ballroom Surface and Ground Water Issues	Room 2 – Executive Boardroom Brines: From Geological Source to Disposal
1:15 pm	Anna Wendt (PSU), Matt Gonzales, Fei Wu, Zhenhui Li, Cheng You, Susan Brantley – “Detecting Surface Water Contamination from Unconventional Drilling Operations in Pennsylvania Using Publicly Available Water Quality Databases”	Radisav Vidic (Univ of Pittsburgh), Omkar Lokare, Sakineh Tavakkoli, Vikas Khanna – “What to do with Produced Water When Its Reuse for Hydraulic Fracturing is No Longer Feasible”
1:35 pm	Kelly Maloney (USGS), Lauren Patterson, Joe Fargione, Jean-Philippe Nicot -“Spills and High Volume Hydraulic Fracturing--an Analysis of State Data from Colorado, N. Dakota, N. Mexico and PA”	Karl Oetjen (Colorado School of Mines) – “Synthetic Organic Compound Characterization of Hydraulic Fracturing Flowback Waters by LC-QTOF-MS”
1:55 pm	John Stolz (Duquesne Univ), Tetiana Kondratyuk, Colleen Nolan, Tyler Umstead, Linnea Manley, Daniel Robinson, J. Lucas Eastham, Jennifer Rutter, Shyama K. Alawattagama, Renee Krynock, Partha Basu, Daniel J. Bain – “Assessing Well Water Quality in Southwestern Pennsylvania”	Brian Stewart (Univ of Pittsburgh), Rosemary C. Capo –“ An Overview of Inorganic Geochemical Tools for Identifying and Quantifying the Interaction of Appalachia Basin Produced Water with Surface and Ground Water”

2:15 pm	Nooreen Meghani (PSU), Terry Noll – “Leveraging Citizen Science to Locate Orphan and Abandoned Oil and Gas Wells”	Bill Burgos (PSU), Luis Castillo Meza, Nathaniel Warner, Patrick Drohan– “Impact of Shale Gas Wastewater Disposal on Conemaugh River Lake Sediments”
Coffee in Ballroom		
2:55 pm	Adam Mumford (USGS), Denise Akob, Kelly Maloney, Arianne Proctor, Jason Ditty, Luke Ulsamer, Isabelle Cozzarelli -“Impacts of Marcellus Shale Unconventional Gas Development and Production on Low-order Streams in PA State Forest”	Garth Llewellyn (Appalachia Hydrogeologic & Environmental Consulting) -“NURE Legacy Groundwater Data: Evaluation of Basin-Scale Factors Influencing Shallow Brine and Halite Groundwater Impacts”
3:15 pm	Xianzeng Niu (PSU), Anna Wendt, Matthew Gonzales, Zhenhui Li, Fei Wu, Guanjie Zheng, Sue Brantley – “Determining Baseline Barium and Sulfate Concentrations in Streams in an Area of Multiple Impacts: Pennsylvania”	Dennis Risser (USGS), John H. Williams “Investigations of the Depth of Freshwater in Fractured-Bedrock Aquifers”
3:35 pm	Dave Yoxthimer (PSU Marcellus Center for Outreach and Research) – “Estimates of Shale Energy Wastewater Discharge Loading to Select Receiving Streams Based on Use of Form 26R Data from Southwestern Pennsylvania”	Radisav Vidic (Univ of Pittsburgh), Can He – “Application for AMD of Produced Water Reuse Can Facilitate Byproduct Recovery and Permanent NORM Sequestration”
4:00 pm	Regency Ballroom <u>Plenary Discussion -- What are the major lessons learned in the northeast with respect to shale gas development and water quality and quantity issues, and what needs to be done?</u>	
4:30 pm	Wrap Up Statements: What Do We Need to Do Next?	
4:45 pm	Assessment	TBD