

JOINT CONFERENCE

2nd Wyoming Reclamation
and Restoration Symposium

30th Annual Meeting of the
American Society of Mining and Reclamation

June 1-7, 2013 • Hilton Garden Inn • Laramie, Wyoming (USA)



2013

Reclamation Across Industries

ASMR PROGRAM COMMITTEE

Pete Stahl, Chair

Richard Barnhisel, Editor and Registration

George Vance, Co-Chair Technical Program

Gerald Schuman, Co-Chair Technical Program

Brenda Schladweiler and Gary Austin, Fundraising

Jay Norton, Calvin Strom, Pete Stahl and Anna Waitkus, Technical Tours

Kristin Herman and Gerald Schuman, Social Events

FINANCIAL SPONSORS

PLATINUM



BP

SILVER



KC Harvey

GOLD



Peabody Energy Inc.



InterMountain Labs



BKS Environmental



High Altitude
Revegetation

BRONZE



School of Energy
Resources at the
University of
Wyoming



Stevenson
Intermountain Seed



Trihydro



Union Pacific
Railroad



Office of Surface
Mining



Anadarko



CDM Smith



Intertech & Coffey



RECLAMATION ACROSS INDUSTRIES

Good Ol' Laramie, Wyoming is known as the Gem City of the Plains and is located in the southeast corner of the state, on the edge of the Rocky Mountains at a staggering elevation of 7,220 feet! Wyoming is a natural resource state and leads the nation in production of coal, bentonite, uranium, and trona as well as being the country's second largest producer of natural gas. With all of this natural resource production, we also have a large land reclamation industry in the state, hence this year's "Reclamation Across Industries" theme. The Joint Conference of the 2nd Wyoming Reclamation and Restoration Symposium and the 30th Annual Meeting of the American Society of Mining and Reclamation is scheduled for the week of June 1-7, 2013 in Laramie, Wyoming.

A **Welcome Reception** the evening of Sunday, June 2 will include drinks and appetizers. This provides an opportunity to visit with the Exhibitors as well as other participants, in the Grand Ballroom Lobby at the Hilton. An evening **Sponsor's Social and Poster Session** in the Hilton Conference Center is planned for Monday, June 3. The **Early Career Professionals' Social** will be held on Tuesday evening, June 4 at the UW Visual Arts Building. An evening of **dinner and entertainment** is scheduled for Wednesday, June 5, at the Wyoming Territorial Prison State Historic Site. The **ASMR Awards Luncheon** will be held Thursday, June 6th, with **catered lunches Monday and Wednesday in salon ABC**. All **breakfasts** and **breaks** will be held in salon ABC at the UW Conference Center/Hilton Garden Inn during the technical sessions. Each of these provides an opportunity for fellowship and technical exchange with colleagues.

PRE-CONFERENCE WORKSHOPS

WORKSHOP 1: Basics of ArcGIS and GPS for Field Mapping (**two day workshop**)

Date: Saturday, June 1, 9:00 am to 5:00 pm **AND**

Sunday, June 2, 9:00 am to 4:00 pm

Location: University of Wyoming, College of Agriculture and Natural Resources building, room 316. A van will begin picking up at the Hilton at 8:15 am. Wait in lobby or outside.

Lead Instructor: Janine Ferarese, Marcelo Calle, and Alan Buss

Number of Students: Minimum 6 - Maximum 16

Cost: *Dependent upon number of participants* between \$166 for 6 persons and \$65 if only 16 (prorated refund will be made to participants in Laramie).

Description: The workshop is designed to teach participants the fundamentals of using ArcGIS Desktop software and GPS data collection tools to create a map using data collected in the field. Students will learn what coordinate systems, datums, and projections are and why understanding them is vital to working with spatial data. The participants will gain hands on experience using GPS (Trimble and Garmin) in the field, collecting spatial data (points, line, polygons) and transferring collected data from a GPS unit to a computer. Use of simple tools and utilities in ArcGIS, and creation of professional quality maps will be taught. GPS units (Garmin, Trimble GeoXM and Trimble Juno ST) will be provided.

WORKSHOP 2: Reclamation of drastically disturbed salt- and sodium-affected soils

Date: Sunday, June 2, 8:00 am to noon and 1:00 pm to 5:00 pm

Location: LREC Greenhouse, 30th & Harney Streets. A van will begin picking up at the Hilton at 8:15 am. Wait in lobby or outside.

Lead Instructor: Jay Norton, Raymond Ansotegui, Calvin Strom

Cost: \$25

Description: Reclaiming severely disturbed soils with elevated levels of salt, sodium, or both is difficult. Soil salvage operations in arid Wyoming gas fields often mix non-problematic surface horizons with other surface horizons that may contain higher salt and/or sodium levels, increasing salt/sodium contents at the surface out of the range even of tolerant desert plants. Once concentrations in surface soils are elevated, returning them to levels suitable for establishment and growth, even of salt-tolerant plants, can be challenging. The goals of this workshop are to examine ways to: 1) avoid elevating near-surface salt and/or sodium contents by careful identification of suitable soils for salvage, considering the tolerances of the pre-disturbance plant community, and 2) mitigate elevated near-surface salt and/or sodium levels using combinations of management and soil amendments. The workshop will include hands-on field and lab components as well as interpretation of soil test results for creating salvage and mitigation plans.

- *Will be held outside, be prepared for warm or cold weather (sunscreen, hat, jacket), wear adequate shoes*

TOURS

Tuesday, June 4, 2013 – meet at Hilton lobby by 7:30 am

Wamsutter Gas Field, 8am-5:30 pm, cost \$40/person

Currently the largest on-shore natural gas field in North America and located in the Red Desert of south central Wyoming, the Wamsutter field is a semi-arid sagebrush steppe environment receiving 20 cm of annual precipitation. Several major energy companies are producing natural gas in the Wamsutter field and are responsible for reclaiming thousands of well pads and thousands of miles of access roads. We will have several reclamation experts with broad experience working in the Wamsutter Field as guides on this trip. This tour will be made in cooperation with the High Altitude Revegetation Committee's Summer Field Tour. Lunch provided

Friday, June 7 – Saturday, June 8, 2013, meet at Hilton lobby by 6:45 am

Powder River Basin Energy Tour – Laramie to Gillette, cost \$150/person

This general Wyoming Energy Resources and Reclamation Tour is a **2-day trip** that will involve driving from Laramie to Gillette, WY. Along the way, we will stop to visit a number of energy production sites. Stops will include the Rolling Hills Wind Energy Farm, an In-situ Uranium Mine, the North Antelope surface coal mine, and a coal fired electrical power generation facility. Includes hotel room and meals.



SPONSOR'S SOCIAL & POSTER SESSION

Monday, June 3, 2013 5:00 pm – 7:00 pm

Turn in your poster when you register so they can be set-up for you. If you fail to do so, you will be responsible for your own set-up.

Poster Session – <i>Salon ABC</i>	
1	Growth of Switchgrass on Reclaimed Surface Mine by C. Brown and J. Skousen (<i>STUDENT</i>)
2	Effectiveness of Mechanical Thinning for Increasing Mule Deer Forage in and Oil and Gas Development Region by G.J. Stephens, M.W Paschke and D.B. Johnston (<i>STUDENT</i>)
3	Using Isotopes to Study Coalbed Natural Gas Co-Produced Water and Soil Interactions by K.J. Lilly and G.F. Vance
4	Reclaiming Mine Lands with Cattle Grazing on a Southeastern Arizona Mine Site by S. Stone and J. Fehmi (<i>STUDENT</i>)
5	Restoring Remnant Hardwood Forest Impacted by Surface Mining for Coal through Removal of the Invasive Tree-of-Heaven (<i>Ailanthus altissima</i>) by C.M. Peugh, J.M. Bauman and S.M. Byrd
6	Third Year Survival and Height Growth of American Chestnut on Post-Bond Release Surface Mines in Eastern Kentucky by H.Z. Angel, C.D. Barton and P.N. Angel (<i>STUDENT</i>)
7	<i>Ailantus Altissima</i> Interferes with Beneficial Symbionts and Negatively Impacts Oak Regeneration by J.M. Bauman, C. Byrne and S. Hiremath
8	Effect of Spoil Type on the Chemical and Hydrologic Profiles of Experimental Mine Reforestation Plots in Eastern Kentucky by K. Sena, C. Barton, C. Agouridis and R. Warner (<i>STUDENT</i>)
9	Restoration of Surface Disturbances on the Shortgrass Steppe of Northeastern Colorado by S.A. Barr, J. Jonas, and M.W. Paschke (<i>STUDENT</i>)
10	Least Limiting Water Range of a Waste of Laundering Bauxite After Eleven Years Revegetation by G.C. Rocha, L.A. de O.P. Guimarães, L.E. Dias, I.R. de Assis, S.M. de Faria, L.C. Iemos Neto and J. Carvalho
11	Foliar Cover and Canopy Cover Relationships on the Goathill Subsidence in Questa NM by T. Richardson, M. Heil, B.A. Buchanan and D. Heafey
12	A Comparison Between Proposed Well Pad Reclamation Vegetal Cover Standards and Their Associated Multiple Land Use Vegetation Communities and Well Pads by M. Heil, B.A. Buchanan and H. McDaniel
13	Canopy Cover Estimation Using Aerial Photography For a Mixed Conifer Zone, Northern, New Mexico by D. Inskeep, M. Heil, B.A. Buchanan and D. Heafey
14	Impact of Inoculation with Plant Material on Plant Development; Greenhouse Tests by C. Nelson, W. Rider and A. Unc

15	Seed Source and Sagebrush Habitat Reclamation Success on the Mowry Formation by M. Dillon and M. Cornia
16	Revegetation of Overburden Dump Slopes in Areas Altered by Iron Mining, Carajás-Pa, Brazil by I.R. Assis, L.E. Dias, G.C Rocha, L.C. Lemos Neto and C.H.S. Rezende
17	The Effect of Disturbance and A Review of Chemical and Industrial Amendments in Reclamation of Wyoming's Sodium Affected Soils by S.J. Day, J.B. Norton, and E. Aboukila (STUDENT)
18	Closure Criteria for Waste Rock Land Forms in Western Australian Goldfields by A.M. Holm and B. Sinclair
19	Field Simulation of Different Approaches to Revegetate Acid Sulfide Spoil in Brazil by L.E. Dias, I.R. de Assis, J.M. Esper and O.A. Ferreira
20	Reclamation of Saline Sodic Soils under Semiarid Condition: Comparative Effects of Different Chemical, Organic and Industrial Amendments by E.F. Aboukila, P.D. Stahl, C.F. Strom, and S.J. Day
21	Reclamation of Abandoned Mine Land Through Poultry Litter Biochar Amendment by U. Buyantogtokh and M. Guo (STUDENT)

SILENT AUCTION

Please bring items to contribute to the ASMR Silent Auction. Items will be displayed prominently in the Grand Ballroom Lobby at the Hilton. This event is used to raise money for the ASMR Student Travel Fund to help students attend future meetings! Bidding will begin on Monday and continue until Thursday at 10:30 am. Winners will be announced at the end of the Awards luncheon.

WYOMING TERRITORIAL PARK SOCIAL

Buses will begin transporting from the Hilton at 5:00 pm. Those signed up for the social can tour the prison anytime Wednesday if they show their nametag and social ticket. A ghost tour will begin at 9:00 pm. The first bus back to the Hilton will be available at 9:00 pm.

SPOUSE/SIGNIFICANT OTHER EVENTS

One of the most exciting things to do in the Laramie area is to take a drive up to the Snowy Range to see the beautiful forests, subalpine and alpine environments in the Medicine Bow National Forest. It takes less than an hour to get to the Snowy Range Pass at an elevation of 10,000 ft. and the scenery is spectacular.

- Snowy Range - hiking, Albany, Centennial, Woods Landing, Old Corral
 - » http://www.stateparks.com/medicine_bow.html

Tuesday

- Drive to Snowy Range. Sign-up at registration
- Trip to Centerra Outlet Mall in Loveland, Colorado. Sign-up at registration

Other Attractions

- Downtown Laramie
 - » <http://www.laramiemainstreet.org/>
- Laramie Plains Museum and Historic Iverson Mansion
 - » An interesting historic site to in Laramie is the Old Iverson Mansion. Completed in 1893, the mansion was home to the prominent Iverson family and was the most elegantly appointed home in Laramie. Tours are available on Tuesday – Saturday afternoons from 1-4 pm at a reasonable cost.
 - » <http://www.laramiemuseum.org/>
- Vedauwoo - Turtle Rock Trail, Ames Monument, Lincoln Monument
- Loveland Outlet Mall, Centerra – shopping
 - » <http://www.outletsatloveland.com/>
 - » <http://www.thepromenadeshopsatcenterra.com/>
- Visit Wyoming
 - » <http://www.wyomingtourism.org/>
 - » <http://www.visitlaramie.org>
- Wyoming Territorial Prison
 - » <http://www.wyomingterritorialprison.com/>
 - » 975 Snowy Range Road

At UW

- Art Museum
 - » <http://www.uwyo.edu/artmuseum/index.html>
- Berry Biodiversity Conservation Center
 - » <http://www.uwyo.edu/berrycenter/>
- Fine Arts/Theatre/Vedauwoo Rock performers
 - » <http://www.uwyo.edu/finearts/>
- Geology Museum
 - » <http://www.uwyo.edu/geomuseum/>
- Insect Museum
 - » <http://wyoalumni.uwyo.edu/s/1254/index.aspx?sid=1254&gid=1&pgid=390>
- Planetarium
 - » http://www.uwyo.edu/physics/_files/docs/planetarium.html
- Williams Conservatory
 - » <http://www.uwyo.edu/botany/williams-conservatory/index.html>

The floor plan illustrates the layout of the Grand Ballroom and its associated facilities. The Grand Ballroom is the central feature, divided into seven salons: Salon A, Salon B, Salon C, Salon D, Salon E, Salon F, and Salon G. A UW Boardroom is located adjacent to Salons F and G. To the left of the ballroom is the Main Conference Center Entrance. To the right, there are restrooms for men and women, a pool, a lounge, and a garden area. The Hilton Garden Inn logo is positioned in the bottom right corner of the plan.

A detailed map of the University of Wyoming campus and surrounding area. The map shows the following streets: 3RD STREET, 9TH STREET, 15TH STREET, LEWIS ST., CEDAR, HARVEY, REYNOLDS, 30TH STREET, 22ND ST., and GRAND. Key landmarks include the GW Campus (highlighted in orange), a Hospital (marked with a cross), and the Hilton Garden Inn University of Wyoming Conference Center (marked with an arrow). The map also shows the Laramie River to the west and south. Directions and distances are provided for several locations: To Rawlins (100 miles) via Highway 80; To Rock River (39 miles) via Highway 30; To Centennial and Snowy Range Scenic Byway (30 miles) via Highway 130; To Woods Landing (27 miles) via Highway 220; To Cheyenne (49 miles) via Highway 30; and To Fort Collins, CO via Highway 287. An Airport is also indicated near Highway 130.

TECHNICAL PROGRAM AGENDA

Saturday, June 1, 2013

9:00 am – 5:00 pm	Workshop #1 – ArcGIS and GPS – <i>College of Agriculture and Natural Resources, Room 316</i>
Begins 10:00 am	Exhibitor set up

Sunday, June 2, 2013

7:00 am – 5 pm	Registration – <i>(speakers, give registration desk flash drives with presentation immediately)</i>
8:00 am – noon	Workshop #2 – Session 1 – <i>Laramie Research and Extension Center Greenhouse</i>
9:00 am – 4:00 pm	Workshop #1 – ArcGIS and GPS – <i>College of Agriculture and Natural Resources, Room 316</i>
1:00 pm – 5:00 pm	Workshop #2 – Session 2 – <i>Laramie Research and Extension Center Greenhouse</i>
5:00 – 8:00 pm	Sponsor's Welcome Reception – <i>Salon B and Lobby</i>

Monday, June 3, 2013

6:30 – 8:30 am	Breakfast – <i>Salon ABCD</i>
6:30 – 10:00 am	Registration – <i>lobby</i>
8:30 – 11:30 am	PLENARY SESSION – <i>Salon ABCD</i>
8:30 – 8:45 am	Welcome by Dr. Pete Stahl, Director of the Wyoming Reclamation and Restoration Center, University of Wyoming
8:45 – 9:00 am	Dr. Frank Galey , Dean, College of Agriculture and Natural Resources, University of Wyoming
9:00 – 9:30 am	Wyoming Governor Matt Mead
9:30 – 10:00 am	The State of Wyoming if the Sage Grouse Gets Listed - The importance of Land Reclamation and Habitat Restoration to Wyoming Bob Budd, Executive Director, Wyoming Wildlife and Natural Resources Trust
10:00 – 10:30 am	Break – <i>Lobby</i>
10:30 – 11:00 am	Land Reclamation in the Rocky Mountain West Mark Paschke, Shell Endowed Chair of Restoration Ecology and Research Associate Dean, Warner College of Natural Resources, Colorado State University
11:00 – 11:30 am	Ghost Towns of the Rocky Mountains Preethi Burkholder
12:00 – 1:00 pm	Lunch – <i>Salon ABCD</i>

Monday, June 3, 2013

	Wildlife Impacts <i>Garden Ballroom</i>	Reforestation <i>Salon D</i>	Oil/Gas Site Reclamation/ Monitoring <i>Salon E</i>	Passive Water Treatment <i>Salon FG</i>
	Moderator – Jeff Beck	Moderator – Jennifer Franklin	Moderator – Chris Johnston	Moderator – Louis McDonald
1:00 – 1:30 pm	Female Wild Turkey Ecology on a Midwest Reclaimed Surface Mine by K.S. Delahunt, J.R. Nawrot and C.K. Nielsen	Rebuilding Soils for Forest Restoration on Appalachian Mined Land by C.E. Zipper, J.A. Burger, C.D. Barton and J.G. Skousen	Reclamation Planning for Energy Development Projects: Wamsutter, WY; A Case Study by C. Driessen, B. Teson, D. Marshall and R. Ansotegui	Passive Treatment Systems for the Removal of Selenium: Selenium Removal Mechanisms with Biochemical Reactor Substrate by R.C. Thomas, J.J. Tudini, J.S. Bays, M.A. Girts, K.B. Jenkins, L.C. Roop and T. Cook
1:30 – 2:00 pm	Can Elk Mitigate Disturbance Risk Associated With Natural Gas Development? By C.B. Buchanan and J.L. Beck <i>(STUDENT)</i>	Growth of Hardwood Trees on Brown and Gray Mine Spoils in West Virginia by L. Wilson-Kokes, J. Skousen, P. Emerson, C. DeLong and C. Thomas <i>(STUDENT)</i>	Quantitative Monitoring in Oil and Gas Reclamation: What Can It Do For You? By T.J. Minnick	Passive Treatment Systems for the Removal of Selenium: Barrel Substrate Studies, Design, and Full-Scale Implementation by R.C. Thomas, M.A. Girts, J.J. Tudini, J.S. Bays, K.B. Jenkins, L.C. Roop and T. Cook
2:00 – 2:30 pm	Sustaining Raptor Populations at the North Antelope Rochelle Mine in Northeast Wyoming by G. McKee, P. Griswold and M. O'Rourke	Native Tree Survival and Herbaceous Establishment on an Experimentally Reclaimed Appalachian Coal Mine by S.C. Koropchak, C.E. Zipper, J.A. Burger and D.M. Evans <i>(STUDENT)</i>	Approaching Oil and Gas Pad Reclamation Using Data Modeling: A Framework for the Future by M.F. Curran, B.J. Wolff and P.D. Stahl <i>(STUDENT)</i>	Off-the-Grid Aeration to Address Nuisance Constituent Production from Specific Passive Treatment System Process Units by R.W. Nairn, and K.A. Strevett
2:30 – 3:00 pm	Genetic Diversity of Brook Trout Populations in Several Sub-watersheds of the West Branch Susquehanna River Watershed by S.M. Rummel and F.J. Brenner	Mature Subalpine Tree and Shrub Transplanting at the Climax Mine, Climax, CO by R.F. Bay, K.E. Carlson and A. Hilshorst	Defining Oil and Gas Pad Reclamation Success on Wyoming BLM Lands by M.F. Curran, B.J. Wolff and P.D. Stahl <i>(STUDENT)</i>	Seasonality of Iron Removal Within the Initial Oxidation Cell of a Passive Treatment System by L.R. Oxenford and R.W. Nairn <i>(STUDENT)</i>
3:00 – 3:30 pm	Break - Salon ABC and lobby			
	Wildlife Impacts <i>Garden Ballroom</i>	Revegetation <i>Salon D</i>	Oil/Gas Site Reclamation/ Monitoring <i>Salon E</i>	Passive Water Treatment <i>Salon FG</i>
	Moderator – Jeff Beck	Moderator – Abbey Wick	Moderator – Chris Johnston	Moderator – Buck Neely
3:30 – 4:00 pm	Predicting the Influence of Restoration on Greater Sage-Grouse Lek Connectivity by B.A. Fitzpatrick and M.A. Murphy <i>(STUDENT)</i>	Factors Influencing the Establishment of Volunteer Vegetation on Quarry Overburden by J.A. Franklin and D.S. Buckley	Preliminary Findings from Analyzing an Oil and Gas Reclamation Database by M.F. Curran, B.J. Wolff and P.D. Stahl <i>(STUDENT)</i>	The Construction and Initial Results of a Demonstration Passive Treatment System for Removing Sulfate at a Site on Vancouver Island, British Columbia by E.P. Blumenstein, R.J. Schipper and J.J. Gusek

Monday, June 3, 2013

4:00 – 4:30 pm	Greater Sage-Grouse Response to Bentonite Mining in the Bighorn Basin, Wyoming by A.C. Pratt and J.L. Beck <i>(STUDENT)</i>	Russian Thistle Population Dynamics at A Former Coal Mine in Northern New Mexico by A. Maier and J. White	Soil Property Recovery on a Natural Gas Pipeline Reclamation Chronosequence by C.K. Gasch, S.V. Huzurbazar and P.D. Stahl <i>(STUDENT)</i>	Passive Aeration Using a Trompe by B.R. Leavitt, B.J. Page, C.A. Neely, R.M. Mahony, T.P. Danehy, C.F. Denholm, S.L. Busler and M.H. Dunn
4:30 – 5:00 pm	FORESTRY AND WILDLIFE TECHNICAL DIVISION MEETING	Conserving an S1/G5/T2 Mustard at a South-central Montana Coal Mine Through Nursery Propagation and Transplanting by G.L. Johnson and R.A. Producers	Natural Gas Field Reclamation Integrating Reclamation Science, Weed Management, and Monitoring, Wamsutter, Wyoming. A Pre-Field Trip Overview by D. Marshall, R. Ansotegui, B. Teson and C. Driessen	Passively-Enhanced Lime Mixing and Dissolution by T.P. Danehy, B.R. Leavitt, B.J. Page, R.M. Mahony, C.A. Neely, C.F. Denholm, S.L. Busler and M.H. Dunn
5:00 – 7:00 pm	Sponsor's Social/Posters – Grand Ballroom Lobby and Salon ABC			

Tuesday, June 4, 2013

6:30 – 8:30 am	Breakfast – Salons ABC
8:00 – 5:00 pm	Wamsutter Field Trip – meet at Hilton lobby between 7:30 am and 7:45 am
6:00 – 10:00 pm	Early Career Professionals Social , UW Visual Arts Building

Wednesday, June 5, 2013

6:30 – 8:30 am	Breakfast – Salons ABC			
	Geomorphic Reclamation Case Studies <i>Garden Ballroom</i>	Amendment Impacts on Soils and Vegetation <i>Salon D</i>	Revegetation on Oil & Gas Sites <i>Salon E</i>	Stream and Drainage Characterization <i>Salon FG</i>
	Moderator – Kimery Vories	Moderator – Jay Norton	Moderator – Cally Driessen	Moderator - Leah Oxenford
8:00 – 8:30 am	Geomorphic Reclamation of Abandoned Coal Mines Near Raton, New Mexico I. Design and Construction Oversight by R. Spotts, M. Brennan, R. Wade, K.J. Malers, K.E. Carlson and Z. Isaacson	Long-Term Effects of Organic Amendments and Potential Carbon Sequestration in Southwest Virginia Mine Soils by W.L. Nash, W.L. Daniels and J.A. Burger	Design, Development, and Field Experience with Wood-Strand Erosion Control Mulch for Mine and Pipeline Projects by J.H. Dooley, D.N. Lanning and M.C. Perry	Long-Term Trends of Specific Conductance in Waters Emerging From Headwater Valley Fills in Virginia, USA by D.M. Evans, C.E. Zipper, P.F. Donovan, and W.L. Daniels

Wednesday, June 5, 2013

8:30 – 9:00 am	Geomorphic Reclamation of Abandoned Coal Mines on Vermejo Park Ranch Near Raton, New Mexico II. Reclamation and Revegetation by K.E. Carlson, R.F. Bay, R. Spotts, and Z. Isaacson	The Fate of Nitrogen in Biosolids Amended Mineral Sands Mine Soils by J. Dickerson, W.L. Daniels, G. Evanylo and K. Haering (<i>STUDENT</i>)	Silvertip Pipeline Spill Revegetation by L.J. Ballek and L. Alvey	Chemical Constituents in Water and Sediment from Grand Lake O' the Cherokees, Oklahoma, Downstream from the Tri-State Lead-Zinc Mining District by S.C. Zawrotny, J. Arango-Calderon, L. Diede, A. McLeod, G. Rutelonis, M. Salisbury, M.P. Beltran-Zuniga, G.A. Busch, K.R. Douglas, E.F. Garifalos, L. Liu, N. Nabavizadeh, M. Rice, D.W. Stevens, J.A. LaBar, D.E. Townsend III, R.C. Knox and R.W. Nairn (<i>STUDENT</i>)
9:00 – 9:30 am	A Comparison of the Vegetation Communities on Geomorphic and Non-geomorphic Reclaimed Mine Lands in Northwestern New Mexico by J. Voss and T.C. Ramsey	From BS to BMP - Using Biosolids for Taconite Tailings Reclamation by P. Eger, C. Lincoln, T. McMillen, K. Hamel, K. Dykhuis, C. Maxwell and J. Takala	Monitoring and Thresholds for Irrigated Lands in Coal Bed Methane Areas by J. Thomas	A Comparison of Stream Chemistry in Three Restored Illinois Coal Basin Streams: Initial Conditions vs. 10 and 20 Years Post-Restoration by B. Borries, K. Williard, J. Schoonover, and J. Nawrot (<i>STUDENT</i>)
9:30 – 10:00 am	Achieving Contemporaneous Geomorphic Reclamation at El Segundo Mine, New Mexico by E. Hydrusko	Compost Rates for Remediating Reclaimed Saline Soils by C. Strom	ECOLOGY TECHNICAL DIVISION MEETING	A Combination of Alumina Refining Residue - Bauxsol (Acid B Extra™) and Biochar to Reduce Metal Concentrations in Acid Mine Drainage by C.D. Peltz, C. Zillich and K.L. Brown
10:00 – 10:30 am	Break – Salons ABC			
	Geomorphic Reclamation Case Studies <i>Garden Ballroom</i>	Organic Impacts on Soils and Vegetation <i>Salon D</i>	Revegetation on Oil & Gas Sites <i>Salon E</i>	Stream and Drainage Characterization <i>Salon FG</i>
	Moderator – Kimery Vories	Moderator – Jay Norton	Moderator - Cally Driessen	Moderator - Leah Oxenford
10:30 – 11:00 am	Stream Restoration Initiative at the Jewett Lignite Mine by J. McKinney, J. Young and D. Ezell	Biochar for Reclamation in the Rocky Mountains: Context, Science and Policy – Can We Find A Nexus That Works? By A. Harley, B. McMullen, and M. Williams	Soil Amendment Application during Drought on Oil and Gas Sites in Wyoming by B.K. Schladweiler	Determination of Dominant Trace Metal Sequestration Processes in Two Vertical Flow Bioreactors Using Modified Tessier Extractions by J.A. LaBar and R.W. Nairn (<i>STUDENT</i>)

Wednesday, June 5, 2013

11:00 – 11:30 am	Integrating Geomorphic Reclamation with Undisturbed and Previously Reclaimed Areas Using A Multi-program Computerized Design Approach at McKinley Mine by H. McCabe, S. Motycka, M. Siemsglusz, K. Kutter, R. Spotts, M. Brennan, R. Wade, K.J. Malers, W. Erickson	A Comparison of Different Volumes of Biochar on Acidic Soils to Increase Plant Growth and Reduce Soil Acidity by C.D. Peltz	Comparison of Basal and Aerial Cover for Total Vegetation Cover and Total Ground Cover on Oil and Gas Sites in Wyoming by C. Adams	Decommissioning of an Anaerobic Passive Biochemical Reactor at the Standard Mine Superfund Site, Crested Butte, CO by N.T. Gallagher, E. Blumenstein, T. Rutkowski, J. DeAngelis and C. Progress
11:30 am – 12 noon	Interactive Discussion	Organic Matter Dynamics in Reclaimed Mine Soils by A.F. Wick, P.D. Stahl and W.L. Daniels	WATER MANAGEMENT TECHNICAL DIVISION MEETING	Ten Years After: The Operation of the Luttrell Biochemical Reactor by A.K. Frandsen, D.J. Reisman, and D.T. Shanight
12:00 – 1:00 pm	Lunch – Salons ABC			
	Advances in the Science of Geomorphic Reclamation <i>Garden Ballroom</i>	Water Processes in Natural and Mined Sites <i>Salon D</i>	Revegetation Technologies <i>Salon E</i>	Geochemical Processes <i>Salon FG</i>
	Moderator – Kimery Vories	Moderator – Tom Wildeman	Moderator – Brenda Schladweiler	Moderator – Lindsay Wilson-Kokes
1:00 – 1:30 pm	Evaluation of Geomorphic Reclamation Performance and Models in the Southwestern U.S. by M. Stone, J. Stormont, E. Epp, C. Byrne, S. Rahman, R. Powell, W. Rider and S. Perkins	A Comparison of Soil Condition, Vegetation Communities, and Soil Redox Characteristics of Surface Mined Wetlands and Natural Wetlands in Southern Illinois by B. Borries, K.W.J. Williard, J. Schoonover and S. Indorante <i>(STUDENT)</i>	Control of Water-soluble Metals and Revegetation of Acidic Mine Waste by Soil Remediation by S.R. Jennings and D.R. Neuman	Geochemical Properties of Weathered Soils and Underlying Overburden of the Pottsville Group in Central Appalachia by D.K. Johnson and W.L. Daniels <i>(STUDENT)</i>
1:30 – 2:00 pm	Comparative Analysis of Multiple Softwares Used in Aiding Geomorphic Reclamation by K. Brown	Field Trial of a Pulsed Limestone Diversion Well by P.L. Sibrell, C. Denholm and M.H. Dunn	Investigating Sagebrush Reclamation Success for Bentonite Mined Areas in the Big Horn Basin, WY by Z.J. Liesenfeld, P.D. Stahl and L.C. King <i>(STUDENT)</i>	Predicting Total Dissolved Solids Release from Overburden in Appalachian Coal Fields by J. Odenheimer, J. Skousen and L.M. McDonald <i>(STUDENT)</i>
2:00 – 2:30 pm	High Resolution LiDAR as a Base for Designing Geomorphic Reclamation Schemes for Surface Mines in the Central Appalachians by C. Yuill	Infiltration in Reconstructed Channels by K. Bramlett, J.C. Stormont and M. Stone <i>(STUDENT)</i>	Rehabilitation Ironstones Outcrops Area Degraded by the Iron Mining Activity on Minas Gerais State-Brazil by L.A. Lobo de Rexenda, L.E. Dias, I.R. de Assis and R. Braga	Leaching Potentials of Coal Spoil: Effects of Rock Type and Degree of Weathering by Z. Orndorff and W.L. Daniels
2:30 – 3:00 pm	Interactive Discussion	Geochemical Modeling of Uranyl Sorption at a Colorado Test Site by K.M. Brown	SOILS AND OVERBURDEN TECHNICAL DIVISION MEETING	Use of Spoil as a Low Permeable Barrier by M. da Rosa, C.T. Agouridis and R.C. Warner <i>(STUDENT)</i>

Wednesday, June 5, 2013

3:00 – 3:30 pm	Break – Salons ABC		
	Soil-Plant Relationships <i>Salon D</i>	Assessment & Permitting Evaluations <i>Salon E</i>	Geochemical Processes <i>Salon F-G</i>
	Moderator – Stephen Williams	Moderator – Anna Krzyszowska-Waitkus	Moderator – Jerry Schuman
3:30 – 4:00 pm	Reclamation of Mined Land with Switchgrass, Miscanthus, and Arundo for Biofuel Production by J. Skousen and B. Gutta	Federal Agency Benefit Analysis of a Remediation Monitoring tool for Abandoned Mine Lands by L.M. Barber Franklin and D.R. Neuman	Changes in Spoil Electrical Conductivity (EC) and Sodium Adsorption Ration (SAR) Following Irrigation at a Mine Site in Northwestern New Mexico by S. Perkins, K. Applegate, B. Musslewhite, B. Buchanan, and T.H. Brown
4:00 – 4:30 pm	Ectomycorrhizal Species Beneficial for Plant Establishment on Abandoned Mine Lands by S. Hiremath, K. Lehtoma and J.M. Bauman	Transitioning From Clean Water Act Nationwide Permitting to Individual Permitting by M.P. Owens and C.K. Applegate	Coal Combustion By-Products Disposal Practices at a Surface Coal Mine in New Mexico: Leachate and Groundwater Quality Study by C. Parker, K. Hart, R. Webb, B. Thomson, J. Stormont and M. Stone
4:30 – 5:00 pm	GEOTECHNICAL ENGINEERING/ TAILINGS TECHNICAL DIVISION MEETING	Using Texas Rapid Assessment Method for Pre-mine and Post-mine Wetland Evaluations by E.D. Bearden and J.D. Wooten	LAND USE PLANNING TECHNICAL DIVISION MEETING
4:30 – 5:30 pm	Happy hour, Hilton shuttle service to Wyoming Territorial Park begins at 5:00 pm		
5:30 – 10:00 pm	Social, Wyoming Territorial Park, 975 Snowy Range Road		

Thursday, June 6, 2013

6:30 – 9:00 am	Breakfast – Salons ABC		
	Evaluation of Reclamation Success <i>Salon D</i>	Methods for Evaluating Revegetation <i>Salon E</i>	Mine Water Treatment <i>Salon FG</i>
	Moderator – Vern Pfannenstiel	Moderator – Lyle King	Moderator – Bob Nairn
8:00 – 8:30 am	Is the Definition of Scale the Key to our Understanding and Delivery of the Components of Structure, Diversity and Function in the Restoration of Ecosystems? By R.N. Humphries	Fitness More Than Diversity Guides Vegetational Recovery by R.A. Producers	A Study on the Possibility of Passively Treating a Heap Leach Pad Drain Down Solution by A.M. Moderski, J.J. Gusek, C. Bucknam, C. Hager and T.R. Wildeman
8:30 – 9:00 am	Development of a Spodumene (Lithium) Mine on Agricultural Land in the Southwest of Western Australia by K. Lindbeck and B. Clark	Vegetation Inventory and Survey Methods; A Reclamation Tool by M.L. Pokorny, D.R. Neuman, K. Edwards and P.D. Smith	Bench-Scale Treatability Testing for <i>In Situ</i> Bioremediation of Mining-Influenced Water by N.T. Smith, N.A. Anton, D.J. Reisman, M.R. Nelson, A.K. Frandsen, R.L. Olsen and W.A. Rosche
9:00 – 9:30 am	Reclamation of Two Coal Mines in Mongolia: The Eren Mine and the Planned Tavan Tolgoi Mine by S.E. Williams, V. Pfannenstiel and A. Jalsrai	Comparison of Vegetation Cover vs. Precipitation on a Reclaimed Coal Mine in Northeastern Wyoming by D. Gardner and B. Schladweiler	Antimony Removal From Mine Water Using Adsorbent Media by D.T. Klempel

Thursday, June 6, 2013

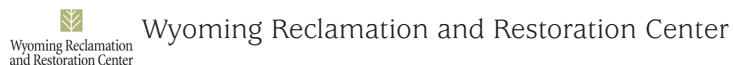
9:30 – 10:00 am	The Contribution of Active Surface Mines in the Conservation of Lower Plant Communities in the South Wales Coalfield, United Kingdom by R.N. Humphries	Long-term Comparison of Vegetation Reference Area on Reclaimed Coal Mines in Northeastern Wyoming by B.K. Schladweiler	A Short History of Pyrite and Acid Rock Drainage: An Engineer's Perspective of ARD by J.J. Gusek
10:00 – 10:30 am	Break – Salons ABC		
	Evaluation of Reclamation Success <i>Salon D</i>	Long-term Mine Land Reclamation in Australia <i>Salon E</i>	Remediation Problems for Reclamation <i>Salon FG</i>
	Moderator - Vern Pfannenstiel	Moderator – Neil Humphries	Moderator – Bob Nairn
10:30 – 11:00 am	Using The RQ-11 Raven A and the T-Hawk for Oversight Inspections of Surface Coal Mines in West Virginia by N.L. Carter, L.J. Monette and D.T. Beaman	How far have we come? A Reflection of Rehabilitation Research in Australia over the Past Two Decades by D.R. Mulligan	Co-Treatment of Acid Mine Drainage with Municipal Wastewater using the Activated Sludge Process: Impacts on Wastewater Treatment Performance by T.A. Hughes and N.F. Gray
11:00 – 11:30 am	Field Direct, A Field Inspection Application Designed to Improve Data Integrity and Accessibility for Management Oversight by K. Ward	Developments in Mine Closure and Integration with Operations in Australia by H.W.B. Lacy	Case Study: Utilizing Paste Technology for Reclamation of the Ute Ulay Upper Tailings Impoundments, Lake City, Colorado by T. Taft
11:30 am – 12:00 pm	Effectiveness of Commercial Compost Soil Amendment in Montana upland and Riparian Revegetation by R.A. Producers	The 8 th Year of the International Mine Closure Conferences: Its Positive Influences on Effective Mine Closure, Completion and Reclamation in Australia by H.W.B. Lacy	Remediation of the Milltown Sediments in Montana by D. Neuman, F. Hons, T. Moore, H. Shahandeh, R. Loeppert and C. Bangira
12:00 – 2:00 pm	ASMR Awards Luncheon – Salon ABCD, photos of award recipients will take place after luncheon.		
	Innovations in Reclamation/Restoration <i>Salon D</i>	Mine Modeling & Reclamation <i>Salon C</i>	Special Reclamation Challenges <i>Garden Ballroom</i>
	Moderator – Calvin Strom	Moderator – Jessica Odenheimer	Moderator – Stuart Jennings
2:00 – 2:30 pm	Geotechnical-Geophysical Void mapping and Foamed-Sand Backfilling of the Rapson Coal Mine, Colorado Springs, Colorado – Case Study by K. Hanna, J. Pfeiffer, S. Hodges, D. Dunham, R. Palladino and A. Amundson	Azurite Mine – A CERCLA Removal Action Case Study by D.G. Wasley	Surface Reclamation of the Captain Jack Mill Superfund Site by N. Anton, T. Bragdon, M. Boardman, J. Jenkins and C. Van Drie
2:30 – 3:00 pm	Kerber Creek Restoration Project: Case Study Employing Statistical Techniques to Analyze Effects of Restoration Activities, Saguache CO by T.I. Klein, L. Archuleta, J. Willis N. Tedela and B Sanchez	Creative Approaches To Old Reclamation Challenges by D. Close	Site Characterization and Evaluation of Reclamation Alternatives at the Black Pine Mine by K.T. Houck, D.J. Clary and M.R. Donner
3:00 – 3:30 pm	Application of Advanced Ecosystem Based Reclamation Study for a Steeply Dipping Open Pit Mine of India: A Case Study by P. Kumar and A. Horel	Application of Landform Grading To Reclaim a Former Wyoming Uranium Mine by J.K. Murphy and M.R. Donner	Ecological Restoration Plan for Abandoned Underground Coal Mine Site in Eastern China by Z. Hu, W. Xiao, Y. Zhao and F. Wang

[illegible]

[illegible]

MEAL AND BREAK SPONSORSHIP

\$500



\$350

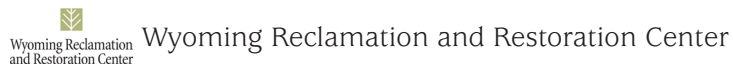


\$300



EARLY CAREER PROFESSIONALS SPONSORSHIP

\$500



\$250-499



\$150-249



EXHIBITORS



AC2 Laboratories
Arkansas Valley Seed

Sustane Natural Fertilizers
Rocky Mountain BioProducts