



**Appalachian Technology Teleconference  
Final  
January 2010**

Dave Clark (OH)  
Robin Lighty (PA)  
Harve Mooney (VA)  
Paul Rothman (KY)  
Charles Sturey (WV)  
Jeff Trump (OSM)  
Lois Uranowski (OSM)

Team Reports:

**Harve Mooney (VA):**

- Budget concerns continue in the state. The newest proposals include the addition of new permitting fees in the mining divisions.
- The general assembly of Virginia will initiate the long session in Richmond on January 18, 2010. There will be a number of proposed regulations that may affect how our business.

**Paul Rothman (KY)**

- An interagency meeting was held with OSM, Army Corps of Engineers, State of KY, EPA and USGS to discuss valley fills status, and the introduction of new employees to mine suites. Enterprise Coal has scheduled a field trip with nine different agencies and 52 regulators.
- The Legislature also met to discuss permitting and a permit assessment fee.

**Charles Sturey (WV)**

Last Call for Workshop Registration: WVDEP is hosting a Workshop on the recently updated Range-wide Guidelines for the Indiana bat and coal mining implemented January

1, 2010. WVDEP will also answer questions regarding full implementation of electronic processing of coal permitting endangered species consultations effective February 1, 2010. The Workshop will be held Thursday, January 14, 2010 from 1:00pm to 3:00pm. If not already registered, you may do so prior to January 9, 2010 by e-mail only to: [Cindy.S.Lawson@wv.gov](mailto:Cindy.S.Lawson@wv.gov). Refer questions to Bob Fala at 304-926-0499, Ext. 1507.

The Workshop will be held at the Ramada Inn at South Charleston, WV. Directions and other information on the Workshop location is available at their following link: <http://www.ramadacharleston.com/>

### **Robin Lighty (PA)**

- The PA Environmental Quality Board proposes to amend 25 Pa. Code Chapter 95 (relating to Wastewater Treatment Requirements). The proposed amendments include the elimination of a redundant provision, the recognition of applicable TMDL requirements, and the establishment of new effluent standards for new sources of wastewaters containing high Total Dissolved Solids (TDS) concentrations. This will apply to mining operations. The proposed limits are as follows:
  - The discharge may not contain more than 500 mg/L of TDS as a monthly average. The discharge may not contain more than 250 mg/L of total chlorides as a monthly average. The discharge may not contain more than 250 mg/L of total sulfates as a monthly average. In addition, discharges to groundwater, including land application and discharges to existing mine pools, must comply with 91.51 and 91.52 (relating to underground disposal).
  - The public comment period runs until February 12, 2010. The proposed regulation is available on the Internet at <http://pabulletin.com/secure/data/vol39/39-45/2065.html>

### **Dave Clark (OH)**

- Ohio is continuing its legislative efforts that spun out of the statute changes in 2007. We've filed numerous rule packages, and are now finalizing discussions with the industry regarding bonding, long-term water treatment trust funds, and acid-base accounting. We remain hopeful that the industry will follow through with its commitment to include additional funding as was discussed during the last call.
- We are preparing comments for OSM regarding their oversight initiative.
- Ohio received approval to hire 5 new field inspectors. These 5 will serve as functional supervisors for inspectors. They will assist the field supervisor, while remaining available for emergencies, complaints, and critical inspections.

- One of our sister Divisions, Soil and Water Resources, completed an assessment of 34 ash impoundments. These are impoundments generally tied to power plants, and none of them are SMCRA impoundments. They found two that had some issues with leakage and stability, but none were listed as “unsatisfactory” in the report. This study dovetails nicely with the large impoundment study were doing with OSM this year.

**Lois Uranowski (OSM)**

Discussion was held to discuss the National Technical Transfer Team meeting to be held April 7-8, 2010 in San Antonio, TX. This meeting is the annual meeting to vote on funding for Applied Science Projects.



**Appalachian Technology Teleconference  
Final  
February 1, 2010**

Arielle Avishai (OSM)  
John Carey (MD)  
Dave Clark (OH)  
Jeff Emmons (OH)  
David Lane (OSM)  
Paul Rothman (KY)  
Jeff Trump (OSM)  
Lois Uranowski (OSM)

**Team Reports:**

**Dave Clark (OH)**

- Ohio is engaged in a significant legislative effort regarding their oil and gas regulatory program. Effort is underway to secure additional funding and to update a number of regulatory requirements.
- USEPA & USACE have scheduled a full week of field visits in early March with one of the mining companies in the southern part of the state. It is his understanding that they will be conducting compliance inspection of nine 404 permits. DMRM and OEPA will accompany the agencies on these site visits.

**Paul Rothman (KY)** : Nothing to report

**John Carey (MD)**

- Next week, MD and OSM will begin a review of AOC and Bonding
- MD's arbor Day will be April 7th this year

**Lois Uranowski (OSM)** Discussion was held on the AR representative for the National Technical Transfer Team. Paul Rothman was selected by the team to be the AR representative at the NTTTT Meeting to be held in San Antonio April 5-8, 2010.

**David Lane (OSM)**

- The team elected to return the ARTT Teleconference calls schedule back to the first Monday of the month instead of the first Tuesday of the month. Call time will remain the same, 1:30PM-3:30 PM.
- A brief “draft” agenda for the Spring Team meeting was discussed. This meeting will include team reports followed by the review and ranking of the Applied Science Project Proposals.

**Jeff Trump (OSM)**

The Appalachian Region Technology Transfer Team will hold the Spring Team meeting February 24-25, 2010 in Charleston WV at the Embassy Suites Hotel.



**Appalachian Technology Teleconference  
Face to Face Meeting  
February 24-25, 2010  
Embassy Suites Charleston, WV**

Arielle Avishai (OSM)  
John Carey (MD)  
Roger Calhoun (FOD-WV)  
Jeff Emmons (OH)  
David Lane (OSM)  
Robin Lighty (PA)  
Harve Mooney (VA)  
Paul Rothman (KY)  
Charles Sturey (WV)  
Jeff Trump (OSM)  
Lois Uranowski (OSM)  
Sheila Walton (TN-OSM)

Team Reports:

**Charles Sturey (WV)**

- EPA reviewing all renewals, revisions, permissions, permits, asking for redesigns in the NPDS process, not setting national limits (200+TDS). 402 limits are changing and the limits are permit specific.
- Conflict with EPA is asking the operators to do over stacking on permits and SMCRA's AOC requirement.
- EPA is asking the WV to come up with numerical standards for its narrative standards.
- Earthfirst sued by Massey for 100K lawsuit

## **Robin Lighty (PA)**

### **Bond Rate Guidelines for the Calculation of Land Reclamation Bonds on Coal Mining Operations**

- The Department of Environmental Protection (Department) announces the 2010 bond rate guidelines for anthracite and bituminous coal mining operations. These rates become effective April 1, 2010. These new guidelines are available on the web at:  
<http://www.dep.state.pa.us/dep/deputate/minres/bmr/programs/bonding.htm>
- The authority for bonding coal mining operations is found under the Clean Streams Law, act of 1937 (P.L. 1987, No. 394), the Surface Mining Conservation and Reclamation Act, act of 1945 (P.L. 1198, No. 418), the Coal Refuse Disposal Control Act of 1968 (P.L. 1040, No. 318), and the regulations promulgated thereunder at 25 Pa. Code Chapter 86, Subchapter F. The unit costs listed in these guidelines will be used in calculating the land reclamation bonds for surface coal mining operations including, surface mines, coal refuse disposal sites, coal refuse reprocessing sites, coal processing facilities, and the surface facilities of underground mining operations. The procedures for calculating land reclamation bonds are described in technical guidance 563-2504-001, “Conventional Bonding for Land Reclamation – Coal,” which is available on the Department’s website at the following link:

<http://164.156.71.80/WXOD.aspx?fs=2087d8407c0e0000800006fb000006fb&ft=1>.

- The Department may review the adequacy of bonds on existing permits based on the bond rate guidelines at any time. The Department will conduct these reviews before issuing permit renewals. The Department may conduct similar reviews at the mid-term of a permit and before approving a permit revision.
- These bond rate guidelines do not apply to bonds assuring replacement of water supplies under subsection 3.1(c) of the Surface Mining Conservation and Reclamation Act or to bonds ensuring compliance with the requirements of the Bituminous Mine Subsidence and Land Conservation Act.

### **Rates to be Used for Calculating Long-Term Operation and Maintenance Cost Bonds for Water Supply Replacement-Mining Operations**

- The Department of Environmental Protection (Department) announces the rates to be used to calculate bond amounts for water supply replacement operation and maintenance costs for anthracite and bituminous coal and industrial mineral mining operations. The authority for bonding mining operations is found under

The Clean Streams Law (35 P.S. §§691.1—691.1001), the Surface Mining The Clean Streams Law (35 P.S. §§ 1396.1—1396.19a), the Coal Refuse Conservation and Reclamation Act (52 P.S. §§ 30.51—30.66), the Bituminous Mine Subsidence Disposal Control Act (52 P.S. §§ 1406.1—1406.21), the Noncoal Surface and Land Conservation Act (52 P.S. §§ 3301—3326) and the Mining Conservation and Reclamation Act (52 P.S. §§ regulations promulgated thereunder at 25 Pa. Code Chapters 77 and 86 (relating to noncoal mining; and surface mining of coal).

- The rates are used in calculating the water supply operation and maintenance bond amounts for replacement water supplies affected by activities at mining surface mines, coal refuse disposal sites, coal refuse operations including: reprocessing sites, coal processing facilities, underground coal mining operations and industrial mineral surface mines. The procedures for calculating water supply operation and maintenance bonds are described in technical guidance 562-4000-102, "Increased Operation and Maintenance Costs of Replacement Water Supplies," which is available on the Department's web site [http://www.depweb.state.pa.us/portal/server.pt/community/dep\\_home/5968](http://www.depweb.state.pa.us/portal/server.pt/community/dep_home/5968), at the Public Participation Center page.

The Department may review the adequacy of bonds on existing permits at any time. The Department will conduct these reviews before issuing permit renewals. The Department may conduct similar reviews at the mid-term of a permit and before approving a permit revision.

#### *Rates*

- The Department calculated the rate of inflation and rate of return using 5-year averages. For the rate of inflation, the Consumer Price Index (Northeast Urban) from the United States Department of Labor, Bureau of Labor Statistics, was averaged for the calendar years 2005-2009, resulting in a rate of 2.77%. For the rate of return, the interest rate for the 20-year Treasury bill as reported by the Federal Reserve was averaged for the calendar years 2005-2009 resulting in a rate of 4.604%.

For background information and supporting documentation regarding the rates, contact the Bureau of Mining and Reclamation, Division of Monitoring and Compliance, P.O. Box 8461, Harrisburg, PA 17105-8461, (717) 787-5103.

#### *Effective Date*

- The rates in this notice become effective on April 1, 2010. They will remain in effect until new rates are published. It is anticipated that these new rates will be published in February 2011 to be effective April 1, 2011.

### **Paul Rothman (KY)**

- State retirement system being looked at.
- Wrong time to lose funding for training opportunities. State looking at alternatives for training.
- EPA problems in KY similar to those in WV. Still approving permits-but revisions being reviewed by EPA.
- GAO report ramification. OSM “non-jurisdiction”
- Focus on Valley fills, Bonds, water chemistry, but NOT on fact sheets. All State programs took issue, Federal agencies did not.
- Fraud, misuse on collusion unless blowout.
- Massey (blowout) reported within 24 hours. This was done.
- EPA asking for 12 months baseline info. The State only asks for six months data.

### **Jeff Emmons (OH)**

- Ohio DMRM has established monthly meetings (3rd Tuesday of each month) with the Corps, USEPA, OEPA where industry can schedule meetings to discuss permitting actions.
- Ohio relies heavily on the NTTTP courses to provide training for inspectors. Budget cuts in the training program will burden the states with the need to develop & establish training and professional development courses for new and existing staff. Ohio encourages OSM to retain the current level of funding for the NTTTP.

### **Harve Mooney (VA)**

- The VA DMME is in the final stages of developing online submittal of electronic forms for certifications for fills and ponds, water monitoring, and coal exploration notices. The project forms have been finalized by the in-house test group and now public users are being canvassed to test the system. Once these testers are satisfied with the project, all users who request access may enter the forms through the web based interface. The systems are scheduled to go live in July, 2010.
- The GIS Section of DMME headed by Daniel Kestner has developed processes by which GIS data can be interfaced with Google maps. Points and other data such as structures that are gathered in the field can be processed to the online service.

### **John Carey (MD)**

- Coal ash issues/coal ash regulations now working on the law.
- Eastern Md-to further regulate ash disposal. Some sites would be affected, some would not be.
- Deep Mine permit-EPA reviewed with little or no comments. Normal NPDS.

### **Sheila Walton (OSM-TN)**

KFO hosted an inter-agency meeting February 16 and 17<sup>th</sup>, with cooperating agencies to provide an opened discussion with EPA concerning the federal permitting process for coal mine sites in the State of Tennessee. Other participating agencies include TDEC, US Army Corps of Engineers, and the U. S. Fish and Wildlife Service. Presentations were presented on the following topics.

- Alternative analysis, avoidance/minimization
- JD determinations, Waters of the State/US determinations
- Baseline monitoring
- Cumulative Impact Analysis
- Mitigation
- SMCRA processes such as PHC, Surface Water Run-off Analysis, Toxic Material Handling Plan,
- Overburden Analysis, Surface water monitoring and Bond Release

Each agency provided presentations related to their respective authority. Discussions were opened and lengthy; but, appeared meaningful.

The meeting allowed EPA to meet the technical team members and enlightened them of how agencies coordinate and work their permitting processes as external teams to protect the environment while mining coal in Tennessee.

### **Roger Calhoun (WV-FOD)**

- TIPS Remote Sensing Team. Roger encouraged ARTT to engage in all the changes occurring in GIS and remote sensing. TIPS web page a work in progress. Roger gave a handout on “Assessing the use of High Resolution Satellite Imagery to Inventory Abandoned Mine Land Features in Virginia” as an example of the changing technologies.
- Drones-OSM is working with USGS to gain access to drones USGS is obtaining.
- SMCRA information on impoundments. Roger encouraged the ARTT to place slurry impoundment higher on the list for applied science type projects. He advised that oversight is producing more issues than answers on these large manmade structures. And they are direct SMCRA responsibilities.
- Geospatial Plan-Roger advised that OSM is about to publish its geospatial plan and that there are new capabilities for GIS/other data base systems data to be interlinked.

### **Lois Uranowski (OSM)**

After the team reports, the Team reviewed all of the Applied Science Proposals. The Team voted on and then ranked the applied science proposals in accordance with established guidelines. The next step is for the National Technical Transfer Team to vote on those sent forward for approval and funding. This meeting will be held April 5-8, 2010. Paul Rothman will be the AR representative for this endeavor.

### **David Lane (OSM)**

Before adjourning the meeting, it was discussed to check into several locations for the Fall ARTT meeting. The Team voted on these: 1. Pipestem 2. Chief Logan 3. Canaan Valley and 4. Ogelbay. Jeff Trump is to check into the possibilities of these-selection choice will be based on travel and related costs.



**Appalachian Region Technology Transfer Teleconference  
Final  
May 3, 2010**

John Carey (MD)  
Dave Clark (OH)  
David Lane (OSM)  
Harve Mooney (VA)  
Jeff Trump (OSM)  
Sheila Walton (OSM-TN)

Team Reports:

**John Carey (MD):** Nothing to report

**David Clark (OH):**

- Ohio continues to participate during IMCC's conference calls regarding water quality and stream protection. We sent a representative to the April OSM outreach meeting in WV.
- Received positive outcome from our Reclamation Commission regarding the appeal of our disapproval of an experimental practice application where the permittee desired to leave permanent, water that was impounded on slurry that is located over mine voids. 18-days of testimony were required to hear the appeal. The Commission upheld the Chief's decision to disapprove the application. OSM provided testimony during the hearing.
- Will have our last vacancy filled in our permitting section, and our 4 remaining inspector vacancies filled by July 2010.
- USACOE, and USEPA conducted 2-days of site inspections on 5 mine sites in Ohio. OEPA and our Division were invited to participate. USACOE generated a 6-page letter that outlined their areas of "significant concern". I've summarized below:

- a. They will require a “re-start” of the 5-year monitoring requirement at each site.
- b. Stream mitigation issues included:
  - i. Lack of woody vegetation in riparian zones.
  - ii. Reconstructed stream reaches are non-jurisdictional, and must be made jurisdictional.
  - iii. Streams where hydrology has been mined out must be mitigated elsewhere.
  - iv. Suggested that the permittee consider deer fencing to protect tree plantings.
- c. Wetland mitigation issues included:
  - i. Lack of hydrology, jurisdictional status. Must be jurisdictional
  - ii. Too much open water.
  - iii. Dominance of invasive species.
  - iv. No wetland soils development.
- d. Reminded the operator that the mitigated resource must meet or exceed the pre-mining Ohio Rapid Assessment and Quality Habitat Evaluation Index (stream classification tool).

**Harve Mooney (VA):** Virginia and Kentucky participated in a joint Arbor Day celebration with the planting of trees on a permit site straddling the Kentucky-Virginia border on April 30, 2010. School children (approximately 150) were present at the tree planting of hardwoods on the site, a Cumberland River Coal Company permit number 1101623.

**Sheila Walton:** Nothing to report.

**David Lane:** The semi-annual face-to-face meeting will be held at Pipestem or Chief Logan Lodge in WV. Arrangements are being made by Jeff Trump. Dates are August 30 thru September 2, 2010.





**Appalachian Technology Teleconference  
Final  
June 14, 2010**

Dave Clark (OH)  
Harve Mooney (VA)  
Paul Rothman (KY)  
Charles Sturey (WV)  
Jeff Trump (OSM)  
Lois Uranowski (OSM)  
Bill Winters (OSM/TN)

Team Reports:

**Dave Clark (OH):**

- OSM hosted a mine site tour here in Ohio for the USACOE, the USEPA from Region 5, and from Washington, the OEPA, and the USFWS as a follow-up to the November meeting in Pittsburgh regarding coordination of SMCRA and CWA. The objective was to provide a hands-on learning experience about coal mining and reclamation. DMRM's field supervisor and site inspector participated. B&N Coal in Dexter City, Ohio was the host.
- The Jockey Hollow Wildlife Area was chosen as the site for the Thursday field trip for the ARRI Conference in Pittsburgh. DMRM staff participated, and the weather cooperated.
- Our budget remains solid after we were able to secure a one-time transfer of money from another agency. This transfer will allow Ohio to make match, and will relieve us from dependency on our general revenue funds for FY-11. Ohio's coal industry has committed to finding an additional source of revenue for FY-12.

**Charles Sturey (WV)**

- WV DEP Water Quality database is being updated by interns using OSM funds. The interns are linking information to GIS databases.
- WV DEP met with the Director of OSM and staff and discussed proposed rulemaking changes.

- Due to budget constraints-WV DEP may have to look at limiting the number of attendees going to various conferences.

### **Paul Rothman (KY)**

- Kentucky is currently involved in a number of recent and ongoing special studies (Bond Computation, AOC, etc.)
- Kentucky is currently in the midst of conducting a lot of basic training for a large number of new permitting and enforcement personnel.
- We have recently revised our CHIA process and are seeking to develop and expand on the number of “trend stations”. We are developing trend stations at the mouth of approximately two hundred and fifty HUC 12 watersheds where most of the current and future coal mining activity will occur.
- As a result of a recently passed biannual budget bill, Kentucky state government will be taking additional budget cuts of 3.5 and 4.5 percent in FY 2011 and 2012 respectively.
- We are conducting reforestation and “Indiana Bat” training for all the field inspection personnel located in our 5 regional offices.

### **Harve Mooney (VA):**

In the fall of 2009, Virginia initiated development of a web-based application to accept certifications, water monitoring reports, and coal exploration notices as well as other submittals online. After a few issues concerning permissions, the application was deemed ready for testing. As of the first of June, 2010 the agency has completed in-house testing of the applications. The next phase of the development will be a demonstration to customers and should that phase prove effective, the application will go live in July, 2010. This system will allow inquiry as well as update.

### **Bill Winters (OSM/TN):**

- Teams are busy writing rule and preamble text: Stream protection rule/EIS – contract awarded for EIS, scoping meetings to begin in mid July.
- LCC has finished the third trust: work began work on fourth and final trust.
- TDS meeting was held in Nashville with discussion between EPA and TDEC on 402 program and 4/1/10 TDS guidance
- NPDES meeting in Pittsburgh – EPA Region 3 will hold NPDES meeting in Pittsburgh next week to discuss implementation of 4/1/10 guidance

Next teleconference set for July 6, 2010 at 1:30PM.



**Appalachian Technology Teleconference  
Final  
July 6, 2010**

John Carey (MD)  
Jeff Emmons (OH)  
David Lane (OSM)  
Robin Lighty (PA)  
Harve Mooney (VA)  
Paul Rothman (KY)  
Charles Sturey (WV)  
Jeff Trump (OSM)  
Lois Uranowski (OSM)  
Sheila Walton (OSM/TN)

Team Reports:

**Paul Rothman (KY):** Nothing to report

**John Carey (MD):** Nothing to report

**Jeff Emmons (OH):**

- Ohio continues to hold monthly meetings with the OEPA, USACOE, and USEPA from Region 5, and coal companies to resolve permitting issues. Meetings are held 3<sup>rd</sup> Tuesday of each month.
- An Ohio company recently proposed longwall mining under FAA navigational towers. During permit review the method was changed to room & pillar mining. OH DNR questions if other states have had experience with longwall mining under sensitive structures and how material damage was prevented or mitigated. Please send state contact info to Dave Clark or Jeff Emmons.
- An Ohio company is considering disposal of lime mining waste (Lime Kiln Dust) with coal prep plant waste. Regulations don't speak to it directly. Can it be treated similar to beneficial use of CCBs? Please send state contact information to Dave Clark or Jeff Emmons.

Ohio's Industrial Minerals law, OAC 1501:14-1-01 (Y), defines Lime Mining Wastes as residual solid or semisolid materials generated from lime or limestone mining and processing operations, including, without limitation, lime kiln dust, scrubber sludge from kiln operations, lime or limestone materials not meeting product specification, lime hydrating materials, and other lime or limestone mining, processing, or calcining materials associated with lime or limestone mining or processing. "Lime Mining Wastes" does not include materials generated for the manufacture of cement.

**Harve Mooney (VA):** Nothing to report

**Charles Sturey (WV):** Nothing to report

**Robin Lighty (PA):**

A briefing of new guidance for abandoned underground mine mapping was provided. When this new guidance is posted on the PA DEP website-Robin will forward the link to the team.

**Sheila Walton (OSM/TN):**

- LCC treatment trust funds – finishing the third trust, working on the fourth and final trust
- Region 3 NPDES meeting (Pittsburgh) highlights:
  - Comment from EPA: "EPA does not review the cumulative impact of all NPDES points in a watershed"
  - Region 3 considers the TDS as guidance, not a standard.
  - TDS limits are 300 to 500 uS/cm – no issues or additional information needs at TDS below 300, impacts at 500 and above, 300 to 500 is a gray area and requires additional information/data

**Lois Uranowski (OSM):**

- Reviewed information on the Stream Protection Zone for EIS. There will be 10 meetings held across the country.
- Applied Science Funding-reviewed and discussed with the team. CLT's accepted the list of proposals as ranked. Notifications were sent out to those who won. Lois reviewed the list of proposals that were funded.

**Jeff Trump (OSM):**

The Fall meeting trip to Pipestem was reviewed with the team. Pipestem was going to charge for the first night of lodging when reservations are made. A call is to be made to

Ruth Ann Hatchett at Pipestem to review and see if this could be waived. The way the contract reads is as follows:

“A deposit in the amount of the first night’s rental will be required when making individual reservations. At Check-in, payment is required for remaining balance. No refunds are granted for early check out. Individual reservations may be cancelled 48 hours before arrival without penalty. Cancellations under the 48 hour time limit will be charged the first night’s rental”.

Next teleconference is set for August 2, 2010 at 1:30PM.





**Appalachian Region Technology Transfer Team Teleconference  
Final  
August 2, 2010**

John Carey (MD)  
David Clark (OH)  
David Lane (OSM)  
Robin Lighty (PA)  
Harve Mooney (VA)  
Paul Rothman (KY)  
Charles Sturey (WV)  
Jeff Trump (OSM)

Team Reports:

**Paul Rothman (KY):**

- Kentucky is working with the OSM Lexington Field Office to finalize some of the on-going Special studies. This includes 2 national oversight studies on “AOC” and “Bond Computation”. Kentucky will provide a more detailed update on the bond computation study and the outcome at the fall meeting at Pipestem.
- KY DNR is currently conducting “Indiana Bat Protection and Enhancement Plan” and “Reforestation” training for all the field inspection personnel in our 5 regional offices.
- Kentucky has notified OSM Director Pizarchik that we are interested in being a “cooperating State agency” on the stream protection rule EIS.
- Due to a worsening budgetary situation in Kentucky, state programs are taking another 3.5 and 4.5 % cut in FY 2010 and 2011 respectively. State personnel will be taking 6 furlough days this year and there will be a number of reductions in appointed personnel.

**John Carey (MD):**

- Maryland has cooperated with OSM to complete their state study on AOC and bonding. Comments have been provided to the regional office; the final OSM report has not been released.

- Program funding is becoming a real concern in that the State has neglected to sponsor a bill to increase the severance tax on coal production which supports the coal mining regulatory program. Discussions are underway for the 2011 legislative session.
- State employees will receive another 9 furlough days in FY2011.
- Our attorney has advised us that Maryland should no longer flush our passive AMD treatment systems due to regulatory liability. This will result in the systems eventually failing and the AMD discharges that were being treated will return to a pre-treatment quality. A significant amount of money has been wasted building these systems.

**David Clark (OH):**

- Ohio continues its practice of conducting quarterly meetings with the industry and our sister agencies. A good cross-section of the industry and their consultants meet with representative of USEPA, USACOE, USFWS, OSM, and OEPA. These meetings have provided a consistent and routine forum for providing direction, sharing information, and questions. Approximately 55 people attended the last quarterly meeting.
- Ohio has published a revised Procedure Directive (PD) for Protection of the Endangered Indiana Bat. The document is titled “PD Permitting 2010-01” and it can be located on the division’s web site at “[ohiodnr.com](http://ohiodnr.com)”. This document includes revisions brought about by the recent changes suggested by USFWS. Ohio prepared the document in cooperation with USFWS, and it was interesting to note that industry did not provide and comments during the comment period.
- Ohio inquired if any recent successes have been documented regarding the repair of stream flow lost to subsidence? Consol has undertaken a project in SE Ohio, and after extensive pressure grouting and clay lining, the repaired section has failed and stream loss is occurring over the panel. Dave Clark will send a note to Robin Lighty directly, per his suggestion. Ohio appreciated the discussion about pumping the pool and its potential effect on the stream, and John Carey’s suggestion about using a liner.

**Robin Lighty (PA):**

The Pennsylvania Department of Environmental Protection is concerned that the proposed rule “Identification of Non-Hazardous Secondary Materials That Are Solid Waste” will jeopardize Pennsylvania’s efforts at eliminating legacy coal waste piles. A summary of PA’s comments has been distributed to the ARTT Team members.

**Harve Mooney (VA):**

- Callahan Creek Special Focus- As part of the 2010 Work plan, the Office of Surface Mining Reclamation and Enforcement conducted a special focus evaluation of mine sites in the Callahan Creek Watershed. The final report is under development as a part of the annual report .
- OSMRE has completed a series of independent inspections in the state (inspections that were unattended by the state regulatory authority). It remains to be seen what the findings will be, or whether or not the efficiency of enforcement in the state will be affected positively or not.

**Charles Sturey (WV):**

The Abram Creek Watershed restoration project consists of 6 treatment sites in the watershed. Treatment at those sites involves periodically dumping acid-neutralizing limestone sand directly into the stream. Because Abram Creek has been identified as the most significant West Virginia contributor of acid water to the North Branch of the Potomac, and thus to the Chesapeake Bay, the State of Maryland has joined forces in the project and will operate and maintain the three dosers. Another partner in the project, Fairfax Materials Inc., will provide and transport materials for one year to the three additional treatment sites.



**Appalachian Region Technology Transfer  
Final  
Face to Face Meeting  
August 31-September 2, 2010  
Pipestem, WV**

John Carey (MD)  
Roger Calhoun (OSM/FOD-WV)  
David Clark (OH)  
Gregg Conrad (IMCC)  
Lee Daniels (Professor of Crop and Soil Environmental Sciences, Virginia Polytechnic and State University, Blacksburg, VA)  
Sarah Donnelly (OSM/NTTP/teleconference)  
Lou Hamm (OSM/TIPS)  
James Kern (Operations Officer, MapTech, Inc, Blacksburg, VA)  
David Lane (OSM)  
Robin Lighty (PA)  
Harve Mooney (VA)  
Paul Rothman (KY)  
Tom Shope (OSM Appalachian Region Director)  
Charles Sturey (WV)  
Jeff Trump (OSM)  
Lois Uranowski (OSM)  
Carl Zipper (Associate Professor of Environmental Sciences, Virginia Polytechnic and State University, Blacksburg, VA)

**Team Reports:**

**Harve Mooney (VA):**

In August 2010, The Virginia Department of Mines Minerals and Energy initiated online access to web-based applications to accept certifications, water monitoring reports, and coal exploration notices as well as other submittals online. The agency has also opened the applications to the public for their use. This system will allow inquiry by the public as well as updates by industry and consultants. The implementation of this system will

allow for downloads of data for use in new permit applications as well as revisions. Both permit history and violation history will be available in the near future. All are encouraged to go to the [www.dmme.virginia.gov](http://www.dmme.virginia.gov) web site to request site access to the new e-forms systems. Current systems available include access to both coal and non-coal mining information as well as tonnage information for the Division of Mines.

**Robin Lighty (PA):**

Robin provided three handouts: “Marcellus Shale Drillers in PA” (1435 violations in 2.5 years), “Inspectable Units as of June 30, 2010”, and “Surface Mining and Reclamation Effects on Flood Response of Watersheds in the Central Appalachian Plateau Region”.

**John Carey (MD Bureau of Mines (BOM)):**

- John noted that OSM has completed the AOC and Bonding studies for MD. The State has no comments or concerns with the AOC study but does have questions about the Bonding study. Final copies of these reports have not yet been received.
- MDBOM is moving forward on full cost bonding and is reviewing options on AMD bonding as well. Processes will likely be in place in about a year.
- MDBOM is proposing an increase on the state severance tax on coal to assist funding of the regulatory program. Industry does not view the increase favorably but probably will not put up too much of a fight.
- MDBOM has been put on notice that an organization known as the River Keepers is planning to sue, in part, because AMD treatment systems in place do not have an NPDES permits. No decision has been made to date as to how the department will respond.
- MDBOM is suspecting that a prohibition on mountaintop mining will be introduced during the MD 2011 legislative session. Maryland has no mountaintop removal operations in the state and is anticipating that mining on mountains with AOC reclamation may be under attack by the bill.

**Paul Rothman (KY)**

- The Kentucky legislature passed a bill this past spring that increased surface coal mining application fees significantly, but this legislation is written such that these fees will not provide any funding for regulatory oversight (inspections) and will be used by permitting.
- Kentucky’s Division of Gas and Gas Conservation is dealing with a number of issues, but given that they are NOT a regulatory agency, they currently have little control over some of the conflicts occurring between the coal mining industry and the oil and gas industry.
- Kentucky has recently signed a MOU indicating they will be a “cooperating state agency” in the development of the EIS for the Stream Protection Rule.
- Kentucky’s coal industry is having terrible problems obtaining 402/404 permits. The industry is convinced that this delay is largely the result of EPA actions.

### **Charles Sturey (WV)**

- As the West Virginia Department of Environmental Protection committed to doing in March, the agency has developed a guidance document for implementing and enforcing West Virginia's narrative water quality criteria. The guidance document was developed in accordance with parameters set forth in the federal Clean Water Act and applied through the West Virginia Water Pollution Control Act. Contact Charles Sturey at (304)926-0499 or Charles.S.Sturey@wv.gov for additional information.

### **David Clark (OH)**

- Ohio is poised to complete reclamation on its last bond forfeiture site in 2010. The bid opening will take place later in August. Ohio has not issued a bond forfeiture order since 2005, and this will be the first time in the history of the Ohio program that no forfeiture sites remain to be reclaimed.
- All of Ohio's vacant inspection positions are now filled, and both our permitting and field inspection programs are staffed at the levels we need to run the program. 12 of the 18 field inspectors have less than 24 months of experience and we are fully engaged in the training process. Our 4 newest inspectors will attend the pilot NTTP SMCRA Principals and Procedures class. Ohio continues to express its support of both NTTP and TIPS.
- Representatives from Ohio will be contacting several states to further explore issues and options related to data management and tracking. We have secured funding to re-work our permitting database in FY '11. We are also beta testing a new water database. The majority of our industry supplies both their monthly and quarterly sampling results electronically and we have developed a database to track, manage, and report the results to our permitting and field staff. (*OSM Applied Science program funded this project*).
- Our field offices are testing a simple "depth-finder" tool that should allow the inspectors to quickly gauge the depth of sediment ponds and impoundments. The "Humminbird" company makes a small "fish-finder" sonar unit that can be operated by one person from the shore. We will continue to test this application and report our progress and findings during future calls.
- Ohio recommends a possible Tech Transfer workshop topic related to offsite impacts. OSM continues to measure offsite impacts nationally, and the thought of a workshop tied to a national priority seems to make sense. Each of the ARTT States could offer feedback as to our processes for tracking and reporting, and combine that with discussion about possible solutions for reducing and/or eliminating offsite impacts.

### **Gregg Conrad (IMCC)**

- IMCC supports training and technology transfer. There is a concern that these initiatives are being cut as budgets are being curtailed.
- The House Interior committee has restored all \$11M cut from Title V by the Administration. Senate will probably set the number at \$5.5 million.
- IMCC is closely watching oversight documents that are being circulated.
- Data collection for Reg 8 is an issue that must be addressed.
- There is an interagency pilot program, GeoMine, to facilitate data sharing between States. Common data storage will save money.
- Coal ash EPA rule is critical especially as it relates to mine placement. Terms and definitions are not consistent with SMCRA.
- IMCC benchmarking efforts include electronic permitting, water quality standards, trust funds for stream protection, special oversight studies and data collection.
- IMCC is working with EPA on financial assurances for hardrock mining.
- Several States have agreed to be cooperating parties in the development of the EIS for the Stream Protection Rule.

### **Roger Calhoun (FOD/WV):**

Roger gave a handout (Technical Position Paper) on the “Potential of Impounded-Fine-Coal-Refuse Breakthroughs into Underground Mines” (Issues and Answers). Issues included:

- What is a minable seam?
- Can we trust mine maps to give us all the mining-related information we need?
- How can we determine whether minable seams have been mined?
- What do we know about the flowability of fine refuse slurry in active, inactive, capped impoundments; and capped impoundments below multiple layers of slurry cells?
- How can we accurately determine the flow characteristics of the impounded slurry?
- What are the concerns, and what precautions and restrictions should we recommend when we know that the slurry in an impoundment basin is flowable?
- If an underground mine that intersects or lies below an impoundment is below drainage, should we still be concerned about breakthrough potential?

Roger made the following suggestions for Applied Science Priority Topics

- Slurry impoundments:upstream construction issues, potential blasting impacts, and geotechnical aspects of long-term stability
- Stream loss prevention and remediation.
- Stream loss prediction

He also suggested that future ARTT Workshops be small “tight-knit” workshops that may be appropriate considering funding restrictions. Suggestions included:

- Some use of Humminbird Sonar-depth finder to determine effectiveness of pond depth.
- AOC Modeling for land forming and natural channel design.

**Lee Daniels (Professor of Crop and Soil Environmental Sciences), Carl Zipper (Assistant Professor of Environmental Sciences), Virginia Polytechnic and State University, Blacksburg, VA**

Lee Daniels and Carl Zipper provided a briefing on the Applied Science Project, “Predicting Contaminant Leaching Potentials for Central Appalachian Overburden and Coal Refuse Materials”.

**Lou Hamm (OSM/TIPS).**

- New priorities include training initiatives, MOA’s, TIPS website revision, remote sensing pilot project.
- Training program initiatives include the expansion of the AR training room (from 12 to 16 students), TIPS virtual campus, Adams State College awarding full credits, blended learning, PDHs, and onsite training.
- We are in the process of updating the TIPS website so that we are able to download TIPS software, and provide the ability to add WEB 2.0- and 3.0- based tools such as Blogs and WIKI’s. We also want to add more success stories on how using TIPS has benefitted recipients. Continued funding and support for TIPS is dependent upon the passing along of information on how TIPS has benefitted the user. Training information is available on the website.
- Data Miner is a compilation of links to provide remote-sensing data/satellite imagery/maps. There is a plan to add more mine sites this year.
- TIPS is exploring the use of Unmanned Aerial Systems (Drone Aircraft) in its Remote Sensing program. We have joined in a partnership with the USGS, along with other Interior Bureaus, to use RAVEN drones that the USGS has acquired. These drones are equipped with exchangeable color and thermal cameras mounted in the nose to obtain aerial photo imagery.

Lou also provided information on tools that can be shared among States, OSM and the Mining Industry. Handouts were given on the Niton XL3t GOLDD+ Technology Mining Analyzer and on a Drager Gas Meter. The Drager Gas Meter is an innovative solution for the simultaneous and continuous detection of up to five gases. It will be assigned to Ken Eltschlager.

## **Lois Uranowski (OSM)**

Lois gave an update on the draft language for the Preliminary Stream Protection Rule concepts.

- Baseline sampling is in 30 CFR §780.19
- Includes a definition of Material Damage (MD)
- Includes impacts on stream biology as part of MD determination using CWA approved methods.
- Monitoring requirements would necessitate revising 30 CFR §780.23, §816.35, §816.36, §816.37. Monitoring would include an expanded parameter list, location and duration. Long term pollutional discharge requirements are now included in 30 CFR §700.11, §800.18, and §800.42.
- AOC definition in (30 CFR §701.5) is being revised to include a more clear “as documented by landform measurements and analysis” This incorporates topographic measurements (slope, aspect, relief) and features (fluvial processes, stream, wetlands, hills, and cliffs).
- Requires establishment of trust funds or annuities for unanticipated long-term pollutional discharge.
- AOC exceptions ( 30 CFR§785.14 and §785.16) The objective is to ensure that these exceptions to AOC result in achievable, reasonable, and sustainable PMLU and that the environmental impacts are no greater than reclamation to AOC standards.
- Requirements for excess spoil (30CFR §780.35, §816.72 and §816.73) are being revised to minimize the volume of material placed in fills and stream lengths buried; requires construction techniques to minimize the elution of toxic constituents.
- Fish and Wildlife protection/enhancement measures requires for establishment of a 300 foot forested (or other native species) buffer zone for mine troughs and buried streams.
- Adjustments are allowed to the buffer zone if crop land was in place prior to mining.
- Surface water runoff analysis requirements in 30 CFR§780.19 (a)(20) and (c)(2), §780.23 and §780.29 require a plan approval in the permit area inspection of the facilities required after a precipitation event.

Discussion was held again about the Applied Science Program and where the emphasis should be for FY11, including an Impoundment Workshop and the development of an NTTP training class on impoundment inspection.

The following topics were discussed as possible Applied Science High Priority Topics. By a vote of 6-2 the team chose as its number one topic to be the Geotechnical properties of slurry/fine refuse of slurry impoundments. (This was selected by the team in a latter vote in September).

- **#1 Geotechnical properties of slurry/fine coal refuse of slurry impoundments.** Evaluate geotechnical properties, especially flowability, of coal slurry over time. This would include initial pumping into the impoundment; during upstream construction where coarse refuse is placed on slurry; at post final reclamation when surcharges may be placed on the reclaimed impoundment; and from the impact of external forces like blasting.
- **#2 Develop biological tolerance values in mine-influenced streams:** Collecting and evaluating existing data to assign genus level tolerance values to macro-invertebrates in mine impacted waters across the coal mine regions. The comparative analysis would involve review of the composition of mine-influenced water quality parameters, selection of representative parameter(s) and development of tolerance values based on a comparison of the macro-invertebrate health and representative parameter(s). It would be imperative that data sets from streams without influenced habitats other than mining be used to develop the tolerances. The developed tolerance values will be at a resolution for further use in developing biological stream index.

**Thomas Shope (RD-OSM):**

- The Technical Transfer program is important to OSM and is not going away. There has been a lot of focus on the Applied Science Program.
- Stream protection rules have a priority with the Director. A refocus of efforts may be necessary.
- There has been an increase in oversights/inspections.
- OSM and states need to take advantage of the improved technologies and better tools to improve our programs.
- The bonding and AOC oversight reports are in “draft” and should be finalized in the near future.

**James Kern (Chief, Operations Officer, MapTech, INC, Blacksburg, VA)**

Mr. Kern provided a briefing on the Applied Science project, “An evaluation of BMP Efficiencies in reducing TDS loads from Active and Abandoned Mine Lands and Acid Mine Drainage”.

**Sarah Donnelly (OSM/TIPS/NTTP):**

By teleconference, Sarah joined the meeting and discussed how both NTTP and TIPS were being impacted from projected 2011 budget constraints. She reviewed the number

of classes offered from 1989 through the present. Sarah gave demographics for both students and instructors who participate in the NTTP. She discussed the following:

- NTTP/TIPS Cooperation
- Improving job performance through both TIPS and NTTP
- Changes in Student population
- New SMCRA Field Course for Inspection (Boot Camp-2 week class)
- Class update on Acid forming materials: Soils and Overburden
- FY 11 plans



**Appalachian Region Technology Team Teleconference  
Final  
October 4, 2010**

**“CORRECTED COPY”**

David Clark (OH)  
David Lane (OSM)  
Brian Loges (MCR/OSM)  
Robin Lighty (PA)  
Harve Mooney (VA)  
Charles Sturey (WV)  
Jeff Trump (OSM)  
Lois Uranowski (OSM)  
Sheila Walton (TN)

**Brian Loges (MCR/OSM)**

Brian asked ARTT to consider the topic “Establishing Biological Indices Based on Aquatic Macroinvertebrates Tolerance to Pollution” as the Applied Science Priority Topic for Appalachia. Discussion points are summarized below.

- Many state water quality programs include biological indices that are based on tolerance values for organic pollution.
- Any index using tolerance values developed specifically for mine drainage is unknown. An index developed for one or more mine related water quality parameters could enhance the assessment of streams receiving mine drainage.
- Sulfate was proposed as one parameter indicative of mine drainage, but the detection of any impacts directly related to sulfate and not a combination of parameters would be difficult. It was agreed that a multiple mine drainage parameters would be preferred if resources allow.
- The development of the index would also provide a valuable tool for evaluating the recovery of AMD impacted streams following abatement efforts.

### **Team Reports:**

**Charles Sturey (WV):** Nothing to report.

### **Robin Lighty (PA)**

- PA DEP Secretary John Hanger received written notice from OSM Regional Director Thomas Shope that OSM will cease to fund the Abandoned Mine Land (AML) Emergency Program in the Commonwealth of Pennsylvania effective October 1, 2010. During FY 2009 OSM investigated 311 complaints in Pennsylvania, with 87 complaints resulting in declared emergencies. OSM's average cost to operate the Emergency Program and complete emergency projects in PA has averaged \$6.2 M annually over the past 5 years.
- EPA Region III has implemented interim objections to 4 permits with the Kiskiminetas and Conemaugh watersheds in Armstrong and Indiana counties. These objections impact 5 year permit renewals on two underground mines, a 5 year permit renewal on a coal refuse disposal site and issuance of a new underground mine permit. PA DEP has submitted additional water monitoring and all historical biological assessment data to EPA. TMDLs on relevant stream segments were developed by EPA.
- The presence of the golden algae *P. parvum* has been observed in samples collected during September at several ponds and a slurry pond at the Consol Bailey mine complex. The algae also was reported present in in stream samples from Enlow Run and Tally Run.
- After discussing the recent Lands Unsuitable for Mining Petition filed by the state of Tennessee, Robin discussed a 2002 PA Supreme Court case which ruled that designating an area unsuitable for mining was not a takings issue. A pdf copy of this 44 page strongly worded court opinion was later distributed to the ARTT team members.

### **David Clark (OH)**

- Ohio experienced a significant slurry release on Friday October 1<sup>st</sup>. A slurry line operated by one of the Murray Energy companies failed, and released slurry into the floodplain of, and ultimately into a high-quality perennial stream. Ohio issued an IHCO and the company is in the process of cleaning the stream and the associated floodplain. Approximately 1.5 miles of stream were impacted, and there was a noticeable fish kill.

Ohio appreciated West Virginia's offer to share technical information about pipeline operations and the conditions that WV applies to slurry lines.

- Ohio participated in a meeting in St.Louis that was called by IMCC and OSM. OSM's Director Pizarchik asked for input from representatives of all three regions regarding OSM's proposal to re-instate/revise INE-35 as it relates to the use of Ten-Day-Notices for permit defects. OH, WV, VA, CO, IN, and WY were represented. The exchange of information was productive and the states appreciated the opportunity to meet face-to-face with the Director.
- NTTP conducted the pilot session of the 2-week SMCRA Principals and Procedures class in Columbus in September. 32 students from 10 states participated. Early reports suggest that the class was very successful.

**Sheila Walton (TN)**

- KFO received a Lands Unsuitable for Mining (LUM) petition for the North Cumberland WMA. The LUM proposes to designate the areas within 600 feet on each side (1200 feet total) of all ridge lines lying within the North Cumberland Wildlife Management Area (WMA) and, the Emory River Tracts Conservation Easement, as unsuitable for surface coal mining operations.
- KFO is tracking time spent for evaluating permit applications using project tracking codes to capture permitting costs in Tennessee. This effort is lead by Office of Management and Budget(OMB). The goal of this effort is to recover fees related to permitting.
- KFO has a request to provide technical assistance to the Lexington Field Office regarding the hydrology and engineering evaluations for an environmental assessment (EA) required for a proposed mine at the East Fork. The South Fork Coal Company owns the private coal and desires to mine 65 acres of land in Kentucky owned by the U.S. Forest Service(USFS). The portion of the mining operation that is located on USFS land requires federal action; thus, requires an EA.

**Harve Mooney (VA):** Nothing to report





## **Appalachian Region Technology Team Teleconference November 1, 2010**

### **Participants:**

John Carey, Maryland Bureau of Mines (MD BOM)  
David Clark, Ohio Department of Natural Resources (OH DNR)  
David Lane, Office of Surface Mining Appalachian Regional Office (OSM ARO)  
Harve Mooney, Virginia Department of Mines Minerals and Energy (VA DMME)  
Paul Rothman, Kentucky Division of Mine Reclamation and Enforcement (KY DMRE)  
Charles Sturey, West Virginia Department of Natural Resources (WV DEP)  
Jeff Trump, Office of Surface Mining Appalachian Regional Office (OSM ARO)  
Lois Uranowski, Office of Surface Mining Appalachian Regional Office (OSM ARO)  
Bill Winters, Office of Surface Mining Knoxville Field Office (OSM KFO)

### **Team Reports:**

#### **Paul Rothman (KY):**

- KY DMRE continues to provide training to new inspection staff on Reforestation and the Regional “Indiana Bat Protection and Enhancement Plan”. To date training has been completed in the London, Middlesboro, Pikeville and Prestonsburg DMRE Regional Offices.
- Kentucky has entered into a Memorandum of Understanding (MOU) with OSM to be a “Cooperating State Agency” on the Stream Protection Rule Environmental Impact Statement (SPR EIS).
- KY DMRE is currently revising its bond computation process and a working group comprised of representatives from the engineering industry, the surety industry, our Abandoned Mine Land (AML) program and the KY DMRE mine permitting staff has been formed for that effort.

**John Carey (MD):** Nothing to report.

### **David Clark (OH):**

- OH DNR is continuing its investigation of the Murray Energy slurry release that occurred on Friday October 1<sup>st</sup>. A slurry line operated by one of the Murray Energy companies failed, and released slurry into the floodplain of and channel of a high-quality perennial stream. The company has completed the clean-up and Ohio has terminated its enforcement action. OSM is assisting the agency with the development of corrective measures that will be necessary to prevent future spills.
- OSM issued a Federal Imminent Harm Cessation Order that related to a permit defect. Ohio authorized placement of overburden outside the permit limits for the purposes of public road construction, and OSM disagreed with that decision. The US Army Corps of Engineers also issued a Cease & Desist Order on the same permit for the unauthorized disturbance of a jurisdictional wetland. OH DNR is working with the operator to correct the deficiencies.
- OH DNR submitted comments for Chapter 2 of the EIS, but may not have the resources necessary to review and comment on the contents of Chapter 3.
- Ohio is electing a Governor on November 2, 2010.

### **Harve Mooney (VA):**

- DMME will be getting a new Director. The current Director Steve Walz will be leaving the agency in December. No Announcement has been made as to his replacement.
- The new electronic forms center is now online.

### **Bill Winters (OSM KFO):**

- KFO received a Lands Unsuitable for Mining petition for 160,000+ acres in northern Tennessee. Petitioners allege mining is not compatible with the regional land use plan.
- KFO developed a set of project codes for all new permit applications and is tracking time of application review as part of an effort to recover permitting costs in TN.
- SPR EIS Chapter 2 has been distributed to cooperating agencies and comments have been received. OSM is deciding how to handle the comments. SPR EIS Chapter 3 has been received, reviewed, and comments being evaluated. The Rule preamble is currently under development and is expected to be complete by 11/12/10 for review by Department of the Interior solicitors.

**Lois Uranowski (OSM):**

Lois led a discussion on workshop topics. The three topics of interest identified are:

1. Stream loss remediation and prediction
2. Approximate Original Contour (AOC) modeling
3. Determining sediment levels using a Humminbird depth finder

