NAAMLP

NATIONAL ASSOCIATION OF ABANDONED MINE LAND PROGRAMS

NEWSLETTER
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INSIDE

UPCOMING MEETINGS

NAAMLP Annual Conference
Oct. 7 - 10, 2007
Bloomington, Indiana

MISSION STATEMENT

1. To provide a forum to address current issues, discuss common problems and share new technologies regarding abandoned mine land reclamation;
2. To foster positive and productive relationships between the states and tribes represented by the Association and the federal government;
3. To serve as an effective, unified voice when presenting the states'/ tribes' common viewpoints; and
4. To coordinate, cooperate and communicate with the Interstate Compact Commission, Western Interstate Energy Board and all other organizations dedicated to wise use and restoration of our natural resources.

Message From the President

Greetings members and friends of the Association –

I would like to start off by the thanking John Kretzmann and New Mexico's AML staff for hosting a well-organized business meeting in Santa Fe. The business meeting was extremely productive and again has proven to be a great forum to discuss important issues facing the States and Tribes such as OSM's implementation of AML Reauthorization, proposed rules, amending the By-laws, the approval of the Statement of Mutual Intent between BLM and NAAMLP and welcoming the Association's newest member, California. Again, thanks to New Mexico's AML staff. The facilities could not have been any more accommodating.

Since Santa Fe, OSM has provided two forums in St. Louis and Indianapolis for the Association to meet and discuss the implementation of AML Reauthorization and the proposed rules. These meetings have gone a long way to assist the Association in better understanding the distribution and the color of the AML funds. Comments were sent out to OSM the week of May 21st regarding the Associations questions and concerns on OSM's interpretation and the proposed rules. Please remember that States and Tribes should also work internally on issues that need to be addressed and / or changed that affect their respective AML Programs. There are many important issues, such as the distribution of funds, inadequate minimum program funding, grants, reporting and eligibility criteria that will significantly impact the States and Tribes and now is our opportunity to comment.

I want to thank Danny Lytton and OSM for their coordination with the Association on the proposed rules. OSM's coordination has been invaluable to the States and Tribes as we have the responsibility to communicate the implications of AML Reauthorization back home and it could not have been done effectively without these meetings. I also want to thank Greg Conrad and the IMCC for facilitating the meetings between OSM and NAAMLP. Again, Greg's assistance in providing the infrastructure and forums allows the Association to communicate effectively with OSM and Congress.

President John Husted, Ohio

I am looking forward to this year's NAAMLP Annual Conference in Bloomington, Indiana on October 7th-10th. The State of Indiana has an outstanding reputation in innovative and quality AML Reclamation work and is a leader in GIS, so I am sure this year's conference will prove to be one of the best! Remember the deadline for the Stan Barnard Award and the Dave Bucknam Instructor Award is June 15th.

I hope everyone has a great summer! John

Mark Mesch Moves On

Mark Mesch retired from the Utah Abandoned Mine Reclamation Program on May 1, 2007 after 11 years as the program Administrator and before that, 5 years on the AMR team. Wanting no fan fare, he refused a retirement party and instead took his entire staff (plus some hangers on) out to lunch that day and wished them well. Mark will be remembered as a truly unique character who taught his staff and co-workers much about life, work and the desert. Mark's guiding philosophy as a manager is not to tell his staff what to do, but rather to create an empowering work environment that allows his staff to solve problems and do what needs to be done. His staff nominated him for the Utah Department of Natural Resources Manager of the Year Award in 1999, which he won. In 2007, they again nominated him, this time for the statewide Manager of the Year Award.

Even though the job of President of the National Association of Abandoned Mine Land Programs (NAAMLP) caused him much consternation, Mark excelled at the job. He spent many late hours preparing for his presidential duties and fretting about his ability to do the job justice. And it showed in the masterful way he steered the organization through the trying times leading up to reauthorization. His signature wild cackling laughter punctuated many a NAAMLP meeting. His trademark salt-and-pepper dreadlock braids accompanied him to the U.S. Capitol to testify on behalf of NAAMLP (although we hope the laugh didn't). Although always a source of anxiety for him, his public speaking skills allow him to charm an audience, engage the listener in his story, present scientific facts with clarity, and patiently keep explaining the same concept over and over until the message is not only delivered, but heard.

A herpetologist by avocation, Mark has degrees in Wildlife Biology and Psychology. He uses his psychology background to his best advantage - it's almost impossible to pull one over on Mark. A confirmed desert rat, Mark is a skilled field naturalist with an eye constantly scanning his surroundings. Many of his passengers have shared the experience of Mark slamming on the brakes mid-sentence at 50 mph, leaping out of the vehicle, and emerging from the sagebrush moments later with a snake in hand.

Mark's dedication to excellence in his work, his friendships and associations will not be forgotten. We know he is off to another exciting chapter of life and we wish him well in his new endeavor as a well-paid consultant!

Public Information Is Power In AML Programs

The National Coal Mining Geospatial Committee Provides Resources To Help

"Information is power." It's an old cliché. Yet it has never been more true than today regarding the AML Reclamation Program. As reclamation professionals, we work hard to close mineshafts, backfill highwalls, and abate emergencies like subsidence and mine fires to increase public safety and improve public health and welfare. Yet we realize that even with the welcome extension of the AML fund authority, we cannot possibly eliminate all current and future public health and safety hazards caused by abandoned mine lands. We know that underground mines will subside for hundreds of years, and we are frustrated because people continue to build roads, homes and utilities on the surface above them. We do our best to reclaim the scars of past refuse piles, highwalls and strip mines, eliminating the current hazards, only to find people digging basements, building houses and planting corn on the reclaimed lands. I suspect that, like me, you have often found yourself saying, "if they only knew what they are building on, they would do things differently". The unfortunate reality is that, in most situations, the public does not know about the past

mining that occurred in their area, nor are they aware that we have completed reclamation projects on the beautiful countryside that surrounds them.

I call your attention back to my opening line, "Information is Power". The power we have as reclamation professionals is information about these AML features. We have accumulated geospatial information about abandoned mine problems and reclamation projects in our maps, files, memories and engineering work stations over 30 years of successful reclamation programs. Much of that information is on paper in our files, inaccessible to the public. This power is unique to us in the AML programs. We have the information equivalent of the horseracing trifecta. We have the information in our files, the authority to collect and maintain it, and with the reauthorization of the AML program, the funding necessary to develop the information into a public resource. While we can't make decisions for the public on where people will live, what they will build or how deep underground they will investigate before developing previously mined lands, we can provide the information they need to make better decisions.

If you have watched the television program called CSI, or many of the other recent police dramas, you know that geographic information systems (GIS) are becoming increasingly influential in affecting public and commercial planning, disaster relief and emergency response. As reclamation professionals, we are in the unique position today, with the extension of the AML fund, to collect and make available to the public, information about the location and characteristics of abandoned mines and the reclamation practices we have used, before that information is lost forever.

Three types of information seem to stand out as significant to capture and make publicly available. The Que Creek Mine accident called national attention to the first type of information - the location, extent and characteristics of underground mines including mine shafts and boreholes. Historic underground mine maps are being lost rapidly and many of us are working feverishly to preserve them digitally before they are gone. The second information type relates to the remainder of unreclaimed surface mine features. This information is in our file cabinets annotated by dedicated reclamation specialists working in the field. No one else has this information. The last type of information, reclaimed AML sites, is one that I believe will become more and more of an issue in coming years. That is information on areas we have already reclaimed, those areas where we have successfully closed mine openings, covered and revegetated gob piles, regraded highwalls and turned mine spoil areas into productive farmland. While many of us personally know where these reclaimed AML sites are and what their limitations are on development, the next generation of landowners, home developers and city planners do not.

We have, for years, taken telephone calls from landowners who wanted to know about an AML project that occurred on a property they were buying and we have been able to answer their questions. However, those times are changing. I know of at least one reclamation program that moved offices a few years ago. By state mandate, all of the reclaimed AML project information: designs, specifications, site maps, etc., from the past 20 years were boxed up and sent to the State archive. Now, when the public calls to ask the office "what was done on a site, how deep the gob is buried, where was the shaft, how was it closed, it is difficult if not impossible for staff to provide the information. Many of the people who worked on the projects have retired or moved on to other opportunities. Who will be able to tell the people of the future where the shaft was plugged or the portal opening was located? How many homes will be built on these locations, exposing future generations to hazards we tried so hard to eliminate? These three types of information: underground mines, unreclaimed abandoned surface mine features and the locations of reclamation features on reclaimed AML sites, are of significant importance to future generations.

In late 2005, the Office of Surface Mining (OSM) began working with States and tribes in a partnership called the National Coal Mining Geospatial Committee (NCMGC) to promote the use of geospatial data in implementing the Surface Mining Control and Reclamation Act (SMCRA). The NCMGC is composed of seven people representing the three (OSM) regions, OSM Headquarters, and three State/Tribe representatives. The Interstate Mining Compact Commission (IMCC), the Western Interstate Energy Board (WIEB) and the National Association of Abandoned Mine Land Programs (NAAMLP) each nominate one of the three State/Tribal representatives. Each State/Tribal Reclamation Program has identified a Geospatial Data Steward from within their personnel to work with the NCMGC to communicate and coordinate organization geospatial needs, to assist in special projects, and participate in geospatial technology transfer.

During 2006 and 2007, the NCMGC surveyed SMCRA organizations regarding the extent of geospatial data use and infrastructure; conducted its first national meeting of the Geospatial Data Stewards; conducted a training needs survey on high end geospatial infrastructure software and began funding vendor training in software courses for ArcSDE, ArcGIS Server 9.2 and Microsoft SQL Server, three software packages integral to implementing enterprise geospatial infrastructure necessary to provide public access to the data discussed earlier in this article. Members of the NCMGC are currently working on developing data standards for two of the important coal mining spatial data sets discussed above, underground mine boundaries and surface mine boundaries. These voluntary data standards are the first step toward making mine related data generated at state and tribal levels available to the public nationally. The NCMGC is now planning a new national geospatial conference for spring 2008 to provide greater technology transfer, education and ideas for using geospatial information to meet the needs of SMCRA programs. We still have many data issues to resolve including data security, stewardship, accuracy, confidentiality, and compatibility. The partnership that is the NCMGC gives us new opportunities to resolve these issues and move forward to providing valuable information on abandoned mines to the public.

We are in a unique position today to make a difference in the lives of future generations. We have a new lease on the life of the AML Program, but equally as important, we have gained perspective over the past few years when many of us saw how real the possibility of the AML Program's end, and with it, our ability to help people of the coalfields through AML and emergency reclamation projects. We also have the power of widespread and easy public information access through GIS and internet mapping. We reclamation professionals have an opportunity to inform the public as never before and help people make good decisions on how to use or not use the abandoned mined lands we have so carefully reclaimed, and the mined lands we may never be able to touch because of funding and time limitations. In the years we have ahead, we can leave a legacy of information that will inform, educate and improve the lives of future generations who live, work and play in the historic coal fields of America. The NCMGC can assist reclamation programs in providing this information. If you would like more information, see the NCMGC page on the OSM TIPS Web Site at WWW.TIPS.OSMRE.GOV/NCMGC or call Len Meier at 618-463-6463 ext. 5109.

The author, Len Meier, works in the Office of Surface Mining Reclamation and Enforcement's Mid-Continent Regional Office in Alton Illinois. Len has 25 years of experience in State and Federal AML Programs and is a member of the NCMGC.

AML Emergencies Continue To Plague Oklahoma

Probably one of the best kept secrets related to the Oklahoma AML Reclamation Program is that there are more than 40,000 acres of abandoned underground coal mines. For the last two years (2005 and 2006) Oklahoma has experienced drought conditions. Invariably, significant rainfall events after extended periods of dry weather, result in AML emergency subsidence problems. From July 2006 to January 2007, six (one gob fire and five subsidences) AML emergencies were declared. The Oklahoma Conservation Commission AML Emergency Coordinator Henry Roye works closely with Lachelle Harris, reclamation specialist with OSM Tulsa Field Office, to confirm that the emergencies are coal related.

Irwin Gob Fire

A coal refuse pile was located along a natural bluff approximately 125 feet south of the portal to the old Union Coal Mine #4, a slope mine that was closed in 1914. The gob pile was located on U.S. Army Corps of Engineers (COE) Lake Eufaula property. The gob pile measured 82 feet from the top of the bluff to the bottom. The average thickness of the gob was 4½ feet. An old mine hoist foundation structure was next to the gob pile.

In June 2006 the gob caught fire. According to the adjacent landowner, Thomas Irwin, the gob fire was started by a brush fire. Henry Roye worked closely with COE staff to develop a strategy to extinguish the fire and vegetate the reclaimed site.

A staging area was prepared to receive the hot gob material, by removing all the brush and trees and leveling the area. Hot gob material was removed from the bluff down to the toe of the bluff with a trackhoe, and then a dozer pushed it to the staging area. The burning gob was spread over an area about 160 feet long by 90 feet wide and averaged 20 to 24 inches thick. This allowed the gob to burn itself out. It took about three to four days for the gob to burn out and begin cooling. It was closely monitored by Mr. Roye during the cooling process.

Eight days after completion of the work, the area received a small rain. After the rain, the gob fire became active at the top of the bluff. Equipment was brought back to the job site, and the hot spots were excavated into 2-foot piles. The piles burned out in three days. A 1-inch rain fell on the site three days later ending all fire activity. The area was then smoothed and blended into the contour of the bluff. Hay bales were installed for erosion control along the toe of the work area.

COE - Irwin Emergency

Perennial ryegrass was planted on the disturbed area in October 2006. After seeding, the area was hay mulched to assist in controlling soil erosion. The Pittsburg County Conservation District Youth Board members planted 550 tree seedlings on the access road to the site and on the disturbed area. The tree seedlings consisted of Green Ash, Lacebark Elm, Hackberry, Sawtooth Oak, Northern Oak, Sycamore, Black Locust, Fragrant Sumac, Sand Plum, Autumn Olive, and Bush Honeysuckle.

The total construction cost was $12,352.75 and the vegetation cost was $950.00.

Highway 270 - Hillside West

Early one Saturday morning, Bradley Hamilton, district manager for the Pittsburg County Conservation District, was pulling a horse trailer with his pickup when he almost lost control of his pickup after driving over a subsidence area on the inside lane of U.S. Highway 270 in Alderson, Oklahoma (population 260). U.S. Highway 270 is a very heavily traveled four lane highway (approximately 9,000 vehicles per day) that is three miles east of McAlester, Oklahoma, the county seat.

At that time, Mr. Hamilton told the Oklahoma Department of Transportation (ODOT) officials that the area was about 2 feet wide and 10 inches deep on the inside lane. ODOT closed off a portion of the west bound lane and patched the subsided area that day. The next day ODOT workers found the same area had sunk another 10 inches and the collapsed area measured about 11 feet wide and 16 feet long. They filled it with additional asphalt and contacted the Oklahoma Conservation Commission (OCC) for a more long term solution.

An agreement was signed between OCC and ODOT to abate the subsidence problem. OCC would pay 70 percent of the reclamation expenses and ODOT would pay 30 percent. ODOT performed test drilling and traffic control. Henry Roye worked on-site with ODOT officials. ODOT's test drilling encountered two coal pillars and 16 voids filled with loose material. There were no open voids. The overburden or consolidated material above the voids ranged from 11 to 22½ feet.

Brundage-Bone Concrete Pumping of Tulsa, Oklahoma, was the only bidder out of three contractors that attended the prebid meeting. They bid $120 to $125 per cubic yard, depending on the grouting option selected by OCC. Additional costs were bid for other incidental work. Thirty two cubic yards of grout was pumped to form a curtain using the test holes, and four cubic yards of flowable fill was pumped into the center of the subsided area. OCC was fortunate the mine voids were filled with loose material, because little grout was required to fill the subsided area. The total construction cost was only $4,480. This area will require continuous monitoring because of its history of subsidence.

In 2005, less than ¼ mile east from the Highway 270-Hillside West Emergency Project on U.S. Highway 270, $120,000 was spent grouting voids under the highway.

Highway 270 - Haileyville Sinkhole

The Mayor of Haileyville, Oklahoma, (population 891) and an ODOT worker notified Henry Roye that a sinkhole had started two feet south of the asphalt shoulder on U.S. Highway 270 between Haileyville and Hartshorne, Oklahoma. The sinkhole developed within one week of the Highway 270-Hillside West subsidence. The sinkhole was approximately 4 feet deep and almost six feet wide. This four lane highway is very heavily traveled. But more importantly is the fact that many residents are adjacent to the highway increasing the potential for someone to get into the open sinkhole. Mr. Roye worked with ODOT and local officials to abate the AML emergency.

Mark's Construction, LLC of Wilburton, Oklahoma, was the low bidder. The contractor excavated the sinkhole to a depth of 15 feet to the coal bed. Further excavation continued in the highway drainage ditch. Old mine timbers were excavated during the process indicating that the mine roof had collapsed. After the excavation, 27 tons of 18-inch rock rip-rap were placed in the sinkhole and six dump truck loads of clay were put on top of the rock and packed. The highway ditch and shoulder were reshaped. The total cost was $2,608.80.

About one month later the same area had sunk and one load of clay was required to fill the area. The potential for further subsidence is very high.

Arends Sinkhole

OCC was notified by a landowner about 1½ miles north of the small community of Dow in Pittsburg County that a sinkhole had developed approximately 20 feet from their carport in a flower bed. The opening measured about 2 feet across and 100 feet in depth, and the sides around the vertical opening were actively eroding. The owners of the property have a commercial horse training facility with high "foot traffic" around the vertical opening. Mr. Roye thought the opening could have been an old coal pump station.

The low bidder was Mark's Construction, LLC, of Wilburton, Oklahoma. The contractor excavated the surface area around the vertical opening about 4 feet to solid rock. A 6-inch by 20-foot joint of PVC pipe was set inside the opening with a 6-inch by 4-inch Y pipe installed about 18 inches below the surface. About one ton of small rock and gravel was used around the pipe, then grout was poured on top of the gravel. A portion of the 6-inch pipe was left above the surface of the ground and a cap, with a small vent hole, was placed on top of the 6-inch pipe. The total cost was $3,488.00.

Mason-Pipeline

A landowner, Brian Mason, contacted OCC about an underground coal mine that had collapsed. He said that he found the vertical opening in the east lane of a logging road on his property. An active natural gas line was within 2 feet of the vertical opening. The logging road is also frequented by all terrain vehicles. In addition, the property is just off State Highway 63 and approximately two miles southeast of the town of Haileyville.

The vertical opening was 16 inches across at the top of the opening and "belled out" at the bottom to about 12 feet. According to old mine maps, the sinkhole was directly over the main entry to an underground mine.

The gas company was contacted and was on-site during all reclamation work. The contractor, Mark's Construction, LLC, excavated two ramps to the sink hole, approximately 18 feet from the surface. These ramps verified that there was no collapse under the pipeline. The subsidence area was excavated and one load of 18-inch rock rip-rap was put in the bottom of the subsided area. On-site shale was then used to fill the remainder of the excavated area, including the two ramps. A 12-inch to14-inch "crown" of shale was put over the original subsided area. The total construction cost was $3,710.20.

Ute Street

Henry Roye received a call from Hartshorne Mayor Carolyn Jo Trueblood that a sinkhole had opened up at the intersection of 12th and Ute street in Hartshorne (population 2,102). The sinkhole was about 2 feet in diameter at the opening, but under the surface it was about 6 feet long by 4 feet wide by 5½ feet deep. The OCC AML staff has reclaimed numerous AML subsidence emergencies over the last several years in Hartshorne. City workers secured the subsidence area to protect the public until a contractor could begin the abatement work.

Mark's Construction, LLC, was the low bidder. City officials alerted the OCC and the contractor that there were two 4-inch service sewer lines and one 8-inch clay tile main sewer line inside the sinkhole. First, the contractor excavated all of the soft dirt. He then stabilized the bottom of the excavated area with clay, 4-inch rock, and small gravel. All three sewer lines that were disturbed were replaced. The contractor then packed the sinkhole area up to the surface and prepared it for asphalt. The city provided the asphalt and the contractor assisted the city work crew in laying the asphalt. The total cost was $3,231.80.

Ute Street Emergency

Two Methods Of Extinguishing Surface Burning In Coal Refuse Piles

The Alaska Experience

There was at one time approximately 58 acres of refuse piles with fire burning just under, and at times through, the surface. The AML Program took on the task of extinguishing these fires. All but the final 10 acres is out. There have been two phases to date using different approaches to extinguish the fires demonstrating vastly different levels of efficiency for the operators involved.

General Project Data: The entire area was drilled to determine temperatures and verify the existence or absence of voids so we could provide the operator with some indication of what the conditions were that they would encounter. No large voids were found in any of the drill holes and temperatures varied widely. The Phase II area showed higher temperatures than did Phase I. The goal of the project was to dig out 100% of the refuse piles down to native ground to insure the fire was completely out, cool off all

Figure 2 *Jonesville Fire Phase II - Cat pushes trenches into hot refuse*

material to under 120 degrees Fahrenheit, replace and compact the coaly material to remove oxygen that might support ignition, and finally cover the entire area with a fire resistant cap of clay material to reduce the probability of re-ignition from surface sources such as camp fires. Part of the project was to create an underground "firebreak" of rock between areas of either combustible or burning material and the area where the fire had been extinguished.

Phase I Methodology: The contractor opted to dig out the material in "cells". This consisted of digging the material out of the "hot" side while spot hitting with water streams, spreading it on the cell floor, cooling it with water spray, moving the material to the "cold" side and compacting it in lifts using a grid roller on the opposite side of the cell. After the project area was done in this manner a clay cap was placed over the entire area. There were many flareups and steam explosions as the water was directed into the hot material ahead of the excavators that were digging into the hot side. Material with a maximum depth of 40 feet was handled multiple times under this scenario but the fire was ultimately extinguished. This phase was about 22 acres and took two field seasons to complete generating lots of noxious odors for the down-wind residents the entire time.

JFI - Construction Sequence by Cell

Construction Encounters Hot Spots

Phase II Methodology: The contractor on this phase opted to cut trenches up to one and a half meters in depth across the surface of the refuse piles using crawler tractors – in this instance a D-8R and a D-10T. Each trench was then flooded with water from an off-road tank truck using water from Slipper Lake and allowed to soak into the surface until the trench was cooled down to the level required. Once cooled the trench was dug down until the temperatures again rose above the threshold mark as determined by hand held infrared thermometers. The material pushed out of the trench onto already cooled ground was then compacted to over 90% by the passage of both water trucks and bulldozers. After the entire phase area was completed in this manner, a clay cap was also spread over it similarly to what was done in Phase I. This phase of 26 acres with depths of 70 feet was done in four months of one field season without any reports of noxious odors down-wind of the project.

Figure 3 *Mass production to prepare trenches for water flooding.*

Remaining Work: The work remaining to do on these two phases is limited to fixing a 27,000 cubic yard pile of surplus material, on top of the airstrip, created during Phase I that made the north shore of Slipper lake unusable for the historic camping activities plus revegetating the area. On Phase II the contractor will be back in this spring to hydroseed the area. Not shown on the map is the outline of the final 10-acre Phase III area which is due west of the Phase I.

Cost Comparisons: These two project phases were bid separately with Phase I in 2002 and Phase II in 2005. The operator on the latter phase only had the experience of the former project to go on and, although the depth of material on the second area was twice that of the first and the temperatures were higher the cost per acre was quite similar between the two at $122,000 per acre. The other difference between the two phases is that the former did not incorporate any revegetation work and the latter does include that aspect due to a fundamental change in the way the Alaska AML Program does its project contracts for major earthwork mitigation. The difference in efficiency between the two types of contractor efforts should result in a savings of roughly 35% to 40% for comparable deliverables on future projects. We have the last 10-acres of this project area left to complete plus an additional area a few miles away with some 20 acres and depths of up to 200 feet.

By Joe Wehrman

Partnership To Address Underground Coal Fire

Navajo AML, Window Rock, AZ - Two neighboring tribes, a local government and one of the largest coal producer's in the United States joined up with Navajo AML to address a dangerous underground coal fire within the Black Mesa coal basin in Shonto, Arizona. About 10 acres of the mountain side gradually subsided posing physical hazards to human, livestock and wildlife. Chemical emission of sulfur and other hazardous fumes were being released into the atmosphere causing possible health risks, and threatening the customary land use and the coal reserves.

In 1987, the U.S. Office of Surface Mining Reclamation Enforcement (OSM), Emergency Program discovered the coal fire. Shortly afterward, OSM made an attempt to extinguish the fire by using a technique known as drilling and grouting with a high-tech expansive grout. The objective was to suffocate the fire, but the geology of the site (comprised of numerous layers of fractured sandstone) and numerous other unknown factors rendered the technique as a short-term solution, but overall ineffective. OSM was unable to achieve the required seal needed to suffocate the fire. Although OSM's efforts did cool down the coal fire temporarily, 10 years later the fire was again active and further subsidence was once again evident. Obviously, this was a major concern for the Navajo AML Program and the local community.

In September 2006, Navajo AML contracted Clawson Excavating, Inc., of Wales, Utah to unearthed more than 1,000 linear feet of fire line, ranging from 40 to 60 feet. During the reclamation, the contractor discovered four to six coal seams burning at extremely high temperatures. Clawson extinguished the coal fire by excavating the coal burning seams and quenching the coal fire with water to cool down the process, and then backfilling the trench with a layer of sand to permanently seal out the oxygen to suffocate the coal seams followed by overburden material.

This reclamation was all possible through partnership with the U.S. Office of Surface Mining (OSM), Hopi Tribe AML Program, Shonto Chapter Governance, and Peabody Western Coal Company (PWCC). The Shonto Chapter government provided in-kind services from Western Peabody Coal Company (WPCC) by donating water to the project site. In good partnership spirit, the Hopi Tribe AML Program assisted with their heavy equipment to transport large volumes of water from WPCC (40,000 to 50,000 gallons) daily to cool down the coal seams. With a combined effort, Clawson Excavating, Inc., successfully eliminated the underground coal fire project. After the reclamation was completed, the site was contoured to a more natural state; revegetation was necessary to stabilize the ground and also to the benefit the livestock and wildlife.

The other construction projects that were part of the Midlands AML Reclamation Project contract were: 1) Cow Springs Mine (two underground mine opening were addressed); 2) Montezuma Chair Mine (addressed a subsidence at a previous reclaimed portal and a gabion drop structure installation); 3) Twin Peaks Mine (an erosion control structure was implemented); 4) Chindee Wash (five soil and surfaces run-off control structures were installed); and 5) Window Rock Mine (several subsidence problems and erosion problems were addressed). This was the largest coal fire abatement project for the Navajo AML Program. For more information contact Harlan Charley at (928) 871-6982.

By Harlan Charley, Public Information Officer

Susquehanna River Basin Low Flow Mine Storage And Treatment Project

The Susquehanna River Basin Commission (SRBC) is a federal-interstate agency established to protect and manage the water resources of the Susquehanna River basin. The SRBC regulates certain consumptive water uses and requires regulated users to compensate for that use during times of low flows. Users may choose to make payments to the Commission based on a rate of $0.14 per 1,000 gallons of water consumptively used as an alternative to providing actual compensation water. Because of the economic burden its compensation options created for the farm community, the SRBC has temporarily suspended its regulation for agricultural uses and is studying options to assist the farm community in developing reasonable and sustainable solutions to compensate, to the fullest extent practicable, for impacts of consumptive water use.[1]

One of the options under consideration to compensate for agricultural consumptive use during periods of low stream flow is to use abandoned mine pools as reservoirs to provide additional water to the river basin. Because of the numerous existing large mine pools in the Susquehanna River Basin, there are many opportunities to address an escalating problem of consumptive demand. In addition, mitigating the pollution coming from these mine pools by treatment would be a step towards meeting Pennsylvania's initiatives to restore the West Branch Susquehanna River Watershed.

The Pennsylvania Department of Environmental Protection (PA-DEP) Bureau of Abandoned Mine Reclamation (BAMR) identified a number of mine pools that could possibly meet the needed flow and storage requirements. The PA-DEP-BAMR has retained GAI Consultants, Inc. to evaluate and select the mine pools. U.S. Environmental Research Services (USERS) is assisting GAI in this effort. The evaluation includes flow monitoring, chemical analyses, exploratory drilling and hydrology.

The SRBC anticipates a supply requirement of 15.7 million gallons per day (MGD) during low flow time periods as a replacement for water withdrawn by agricultural consumptive users. The envisioned scenario would select one or more mine pools that could be drawn down, treated and discharged during low flow periods

(up to 120 days) and allowed to recharge during high flow periods. BAMR would construct needed treatment facilities using AML funds. Cost of treatment will be provided by a trust fund to be established with monies appropriated by the Pennsylvania Legislature. The one-time appropriation is the present value equivalent of the SRBC fee for the consumption of this water. BAMR and the SRBC expect other entities to consider similar consumptive use agreements.

BAMR currently plans to relocate an existing treatment system from the Blacklick Creek Watershed and add it to the West Branch Susquehanna River. The system, which has been treating the Barnes and Tucker Lancashire No. 15 mine pool, was constructed in 1970 following a mine blow out significant enough to make the national news. This mine complex straddles the divide between the Susquehanna and Allegheny River Basins. The relocated discharge is estimated to provide as much as 10 MGD of the 15 MGD needed to replace the agricultural consumptive use water. The selected mine pool(s) from the GAI evaluation must provide the additional 5 MGD needed during low flow conditions.

Five mine pools are currently under evaluation as possible candidates: Cresson/ Gallitzin complex; Hughes Mine; Argyle/Stone Bridge Mines; Eureka 29; and the Broad Top Complex. Only mines that have no private party identified to have continuing responsibility for the mine discharge are being considered. The capacity of the mine to store a large volume of water is another consideration. Another important criteria is the ability of the mine to recharge its pool after being diminished by pumping during dry weather. The amount of pollution load and the impact to the receiving streams were also evaluated.

The situation is a win-win for all parties. AMD affected streams will be restored; cost of treatment will be provided by a trust fund; and SRBC receives needed water for agricultural use during low flow periods.

By Shirley Sholtis, Geologic Specialist

[1] *SRBC Information Sheet: Agricultural Consumptive Water Use Study*

Missouri's Rocky Fork AML Reclamation Project Gets Underway

In March 2007, the Missouri Land Reclamation Program (LRP) began construction work on the Rocky Fork AML Reclamation Project. The Rocky Fork project site is a 27-acre eroding coal waste pile and a 35-acre coal slurry pond that pose a threat to public safety and to water quality in Rocky Fork Creek. This site is located in the Missouri Department of Conservation's Rocky Fork Lakes Conservation Area in Boone County, approximately 10 miles north of the City of Columbia (population 84,531).

The project site is located within a 3,500-acre area that was strip-mined by the Peabody Coal Company from the late 1950's until 1972. Over the years, erosion has cut deep ravines in the coal waste pile which is now located in a highly visited public use area. The 15 to 20 ft. deep ravines are very unstable, creating significant danger to visitors using public lands. The slurry pond dam is broken in several locations. If the dam were to become completely breached, thousands of tons of coal slurry could enter Rocky Fork and Perche Creeks. These creeks are located in a rapidly developing area in Boone County including parts of Columbia.

The ongoing reclamation project includes the grading of approximately 27 acres of exposed mine waste and gob material at the old tipple site and loadout facility to a gentle slope. The mine wastes are extremely acidic, so large quantities of agricultural lime will be applied and incorporated into the graded area. Following lime application, the area will be covered with 2 to 3 ft. of good quality glacial-till overburden borrowed from a nearby 9-acre mine spoil ridge. Additionally, a 5-acre eroding portion of the slurry pond will be reclaimed by grading, incorporating lime and covering with glacial-till overburden. Limestone armored drop-down structures will be installed to control erosion and improve the long-term stability of the slurry pond. All affected areas will be revegetated. Three acid wetland areas, totaling one acre, will be reconstructed or enhanced. The wetlands will be surface treated with calcium carbonate in the form of agricultural lime and covered with organic matter obtained from the City of Columbia's compost facility. Two small acid ponds, not directly associated with the earthmoving activities, will also be neutralized under this project.

Steep, unstable banks are a hazard to hikers and cause acid mine drainage in streams at the Rocky Fork Conservation Area.

The trackhoe is placing agricultural limestone to neutralize acidic coal wastes prior to grading the gob pile. This preventative treatment measure is being taken because ravines like these often act as conduits for acid water seeps, even after the site is graded.

The gob pile will be graded to gentle slopes that minimize erosion and prevent the redevelopment of gullies. The sub-grade coal waste will then be treated with ag-lime and covered with 2 to 3 ft. of good quality glacial-till soil.

C. L. Richardson Construction Company, of Ashland, Missouri is performing the construction work. The contract amount is $913,086.45. The Rocky Fork Project is a relatively long-term cooperative effort between LRP and the Missouri Department of Conservation (MDC). LRP will be responsible for seeing the project through construction and subsequent green mature plantings. MDC will be responsible for selecting the permanent warm-season grass mixture and assisting with tree planting recommendations. LRP will supply the revegetation materials and MDC will provide their expertise, equipment and labor for planting the final, permanent vegetation.

Virginia AML Program Celebrates Arbor Day

Planting Trees On Priority 3 Site

On April 13, 2007, over 170 secondary school students from Wise and Dickenson Counties celebrated Arbor Day by planting trees on mined land adjacent to the Powell River Project (PRP) Research and Education Center in Wise County, Virginia. The tree planting took place on an abandoned mine land project that is being reclaimed through a partnership between the Virginia Department of Mines, Minerals and Energy (DMME) and Red River Coal Company. The students planted over 1500 trees, including oaks, ash, white pine, and blight resistant American chestnuts.

State and federal officials also introduced students to the latest research on establishing valuable and productive forests on mined lands. High schools participating in the project included Powell Valley, Appalachia, J.J. Kelly, Pound, Coeburn, St. Paul, and Clintwood.

"We had over twenty groups of students planting trees in the morning and after lunch," stated DMME Director George "Bo" Willis. "This was our third Arbor Day celebration and we had great support from the industry and schools from throughout Wise and Dickenson Counties. The students did excellent work in planting the trees in accordance with the research from Virginia Tech."

The Arbor Day celebration is an event of the Appalachian Regional Reforestation Initiative (ARRI), a partnership to promote reforestation on permitted coal mines and abandoned coal mine sites. Sponsors of the event included the DMME, the federal Office of Surface Mining, the Virginia Department of Forestry, and Virginia Tech's Powell River Project. Director Willis added, "In addition to being an enjoyable outdoor experience for the students, Arbor Day activities also emphasize Virginia Standards of Learning (SOLs). Virginia Tech faculty and DMME personnel give presentations that directly relate to secondary school SOLs for biology and earth science. We hope that Arbor Day activities will encourage the students to consider a career in natural resources management."

During the event, DMME recognized Paramont Coal of Virginia, LLC and Red River Coal Company for their achievements with reforestation. Paramont won the ARRI award for excellence in reforestation of an active mine. This company has implemented the forestry reclamation approach to establish a diverse young forest on its Black Bear #4 Surface Mine. Red River Coal won the ARRI award for abandoned mine land (AML) reclamation through its implementation of the forestry reclamation approach on an AML project in Wise County, Virginia. Also during the Arbor Day celebration, DMME recognized Roger Shortt of Cumberland Resources, LLC for individual excellence in reclamation.

"Over eighty percent of Virginia's coal mine land is reclaimed to a post-mining land use of forest," Director Willis stated. "To ensure that current and future generations realize the environmental and economic benefits of reforestation, it is important that agencies promote the ARRI to the industry and those who will follow us."

For further information on ARRI, please check the website http://arri.osmre.gov/ For additional information on Virginia's Arbor Day please contact Richard Davis at 276-523-8216 or Richard.Davis@dmme.virginia.gov.

Virginia Pursuing Opportunities To Reclaim Priority 3 AML Projects

The Virginia Department of Mines, Minerals and Energy (DMME) is continuing to aggressively pursue funding opportunities for reclamation of Priority (P) 3 Abandoned Mine Land (AML) sites. With the recently passed legislation extending fee AML collection and restricting P 3 reclamation, DMME is refocusing efforts for non-OSM funding opportunities for P3 sites.

In February of 2007, DMME partnered with the Upper Tennessee River Roundtable to submit two requests to the United States Fish and Wildlife Service under its Private Stewardship Grant Program. The two requests would be to fund stream restoration work along tributaries of the Clinch and Powell Rivers in southwest Virginia. These two rivers are nationally recognized for their biodiversity and especially for their assemblages of threatened and endangered species. Through the partnership, the Roundtable would administer the funds and DMME would design plans and specifications and provide construction inspection.

In May of this year, DMME will submit grant requests to the Virginia Department of Conservation and Recreation through its Water Quality Improvement Fund (WQIF) project solicitation. DMME plans to target P3 sites in watersheds for which a Total Maximum Daily Load (TMDL) implementation plan has been developed. The P3 sites in these TMDL streams severely impact water quality and thereby limit the biological health and uses of the waters with impacts from AML sites as the main impairment

In addition to DMME's own submittal through WQIF, the agency will partner with local watershed groups to target additional reclamation of P3 sites. These submittals will continue the successful collaborative efforts that have resulted in accomplishing reclamation that otherwise would not have occurred.

By Roger Williams

For further information on DMME's efforts to reclaim P3 sites, please contact Roger Williams at 276-523-8208 or Roger.Williams@dmme.virginia.gov.

Letter Of Thanks ....from Alan Bucknam

Dear members of the NAAMLP and friends,

You guys have made the world a better place**.** But I'm sure you know that already. Reclaiming and restoring abandoned mine sites, returning the land back to productive use, it's a great thing to do (plus you get to go out into the "out of doors" and call it "work", which has always seemed really cool to me). But that's not really what I'm talking about. You've made the world a better place by helping others to pursue their dream of a career in environmental stewardship by the generous contributions the NAAMLP and many of its individual members have made to the David L. Bucknam Memorial Scholarship Fund. Because of your generosity, you are enabling future generations of people just like you to keep up the good work of mine land reclamation, acid mine drainage remediation, wetlands restoration, and all the rest.

The first seeds of the Fund's scholarship awards are bearing fruit. This past fall, we awarded the Fund's inaugural scholarship to Elizabeth Fortushniak, a senior at Mesa State College in western Colorado. Fortushniak is a senior majoring in Environmental Science, who hopes to someday work in restoration and land management. She was selected because of her experience in working in the out of doors as well as her dedication to her studies and the environment. Her work, both in returning land to beneficial use and in educating others in land restoration techniques shows her commitment to the ideals embodied in the Scholarship.

Today we are announcing the date and location of the Fund's third annual fundraising event. The third annual Bedbug Hat Trick will take place on Saturday, September 8th, at the Alderfer/Three Sisters Open Space Park near Evergreen, Colorado. Once again, the event will include a driving tour of some of the area's most scenic routes, lots of mountain biking (with trails for novices and experts), and hiking. And of course, lots of excellent food, drink, and friends. As you plan your late-summer travels, I hope you can join me and many others in the foothills of Colorado for a good cause--and a great time. To get updates on event specifics, drop us a line at bucknamscholarship@gmail.com, and we'll keep you posted!

Thank you again for your generosity. It's just one more way that you make the world a better place! See you in September

Alan Bucknam

Friends and colleagues of Dave Bucknam meet with Elizabeth Fortushniak at Mesa State. (L to R) Russ Walker, Professor, Mesa State College; Paul Krabacher, Colorado Inactive Mine Reclamation Program; Elizabeth Fortushniak; Loretta Pineda Colorado Inactive Mine Reclamation Program

NEWSLETTER ARTICLE SPECIFICATIONS

400 - 500 words. Articles subject to editing. Submit in e-mail or hard copy. 2 photo limit. Include author's name, title of article, captions for photos.Submit photos in TIF(preferred) or JPG format, 300 DPI, and original photo size. E-mail photos as individual files, not embedded.
Deadline for the Fall edition is November 15, 2007.

Email articles to steve.hohmann@ky.gov or mail articles to:
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