

NAAML P

NATIONAL ASSOCIATION OF ABANDONED MINE LAND PROGRAMS

NEWSLETTER

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UPCOMING MEETINGS

NAAML P Winter Meeting
 Feb. 27 - 28, 2008
 Chandler, AZ

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.

Greetings Members and Friends of the Association

I am honored to serve as the president of the NAAML P for this year. It is great to be a part of this organization that includes such outstanding professionals, committed people and great friends. I look forward to working with Steve Herbert as Vice-President and Mike Garner as Secretary Treasurer as we move forward with work on behalf of the Association.

I want to thank our friends from Indiana for hosting a great annual conference. Every conference reiterates how much the States and Tribes are committed to abandoned mine land reclamation and in forwarding more technological advances in this field. The conference gave us an opportunity to sample a lot of what Indiana has to offer as well as showcasing our own projects and accomplishments. Every year we bring in more partners and opportunities for others to become involved in abandoned mine reclamation.

I also want to thank John Husted for his leadership last year and his continued support and friendship. Finally, my thank you's would not be complete without mentioning Greg Conrad, IMCC and Danny Lytton, OSM who are always there for advice and counsel.



President Loretta E. Pineda, Colorado

The 15-year extension and increased funding will provide the States and Tribes with the ability to carryout the remaining AML reclamation work in our nation. We face some challenges in assuring that our voice is heard as the new amendments are implemented and change is managed. I know we speak with a unified voice in assuring that abandoned mine reclamation and restoration of our natural resources remains as a priority. I look forward to the coming year and to working with all the members of the Association. See you all in Chandler, Arizona.

Loretta Pineda, President

West Virginia's Patrick Park Wins Stan Barnard Memorial Award

Each year the Association awards the Stan Barnard Memorial Award to an individual who has provided exemplary service, integrity, and commitment to the Abandoned Mine Land Program. The award is named in honor of Stan Barnard, the former Wyoming AML Administrator.

Patrick Park, a long time employee of the West Virginia AML program and Association delegate was chosen as the 2007 recipient of the Stan Barnard Award.

Pat has devoted a long career to the AML program. For more than 25 years



John Husted (NAAML P President), Pat Park, Brent Wahlquist (OSM Director)

he has worked for the West Virginia AML program and is responsible for many of that program's outstanding accomplishments.

Pat is a former two-time president of the NAAML P, in 1999 and 2000. He became president during a period when AML reauthorization was the foremost challenge confronting the AML

program. He worked tirelessly on behalf of the Association and represented it before Congress when testifying before Congressional committees supporting AML reauthorization.

As president, Pat worked to unite the membership of the Association on key issues. His patience, leadership, knowledge, and interpersonal skills made him an effective uniting force in the Association.

In 1985 and 1997 West Virginia hosted the Association Annual Conference and Pat was instrumental in the planning and execution of those conferences.

Pat has been a longtime instructor for the OSM National Technical Training Program. He teaches the Principals of Reclamation AML class each year and was a member of the Master Instructor Refresher Class development team. His leadership and extensive knowledge of the history and workings of the AML program were key reasons for his selection to this team.

The Award was presented to Pat by Greg Conrad, the 2006 recipient, at the 2007 NAAML P Annual Conference awards ceremony in Bloomington, Indiana.

OSM's Allen Kraps Awarded Prestigious Dave Bucknam Award

Allen Kraps, a veteran instructor for the OSM National Technical Training Program (NTTP), was recognized by the NAAML P and the NTTP for his longtime, varied contributions to the OSM training program. Allen was selected by the Association and NTTP as the 2007 recipient of the Dave Bucknam Award. The Bucknam Award is given annually to the trainer who best represents the spirit, dedication, and purpose exhibited by the award's namesake, Dave Bucknam of Colorado.

Allen began teaching the Instructor Training Course for OSM in 1985. Over the past 20+ years Allen has trained over 500 individuals to be instructors for the NTTP and the OSM Technical Information and Processing System (TIPS). Additionally, Allen has taught other OSM NTTP classes for many years, reaching students all across the United States and beyond. In fact, for the last 11 years Allen has coordinated a training program with the country of Indonesia. He has traveled to Indonesia and taught Instructor Training, Mine Inspector Training (basic and advanced), and Coal Fire Training. He has mentored several Indonesians in the United States by providing them with hands-on experience in our active mining coalfields. Lately, Allen has been a member of the team that developed and is now teaching the Instructor Training refresher classes.



John Husted, Sarah Domnelly, Allen Kraps, Brent Wahlquist

State Projects Recognized By OSM for Excellence In AML Reclamation

(Bloomington, IN) Six state offices responsible for reclaiming mines abandoned prior to passage of the Surface Mine Control and Reclamation Act of 1977(SMCRA) were awarded top honors for the 2007 competition sponsored by the US Office of Surface Mining Reclamation and Enforcement(OSM).

The States were recognized at an awards banquet hosted by the National Association of Abandoned Mine Land Programs. In addition to ensuring that mines are reclaimed as America's coal energy is produced, SMCRA also provides for reclamation at sites abandoned before the act. In the past thirty years all AML reclamation has eliminated safety and environmental hazards while creating useful land on over 314,108 acres. These awards honor the accomplishments of state regulatory officials and their contractors.

The National Award

New Mexico Mining and Minerals Division **Mine Reclamation Bureau**

Real De Dolores Mine Safeguard Project

The mining camp at Real De Dolores was mining gold in 1822, well before it was a United States Territory and operations continued at least through the 1880s. Reopened in the 1980s, some reclamation had occurred, but open shafts and pits remained to threaten public safety. Planned as a public recreation area that would give insight into the history of mining while maintaining and protecting plant and wildlife species, this project also became a demonstration and test for using lightweight plugs to close mine shafts, an important technique for reclaiming old Western mines.



John Kretzmann(New Mexico), Brent Wahlquist

The National Award – Category II

Virginia Department of Mines, Minerals and Energy **Division of Mined Land Reclamation**

Buchanan County Park Highwall Elimination Project

With 3200 feet of dangerous high wall in an area already used for recreation, reclamation at this site would have to undo the results of deep mining, auger mining and surface mining. Using OSM's AML enhancement rule, which enables a contracting company to sell coal incidentally mined during reclamation, Virginia was able to complete this project at extensive savings. The result provides 20 new acres of useable, safe recreation land that is part of 50 acres that includes a football field, basketball courts, a softball field, playgrounds, volleyball courts, an outdoor amphitheater and is the site of the Buchanan County fair. Once again dangers are eliminated and useable land is provided.



Richard Davis, Roger Williams(Virginia), Brent Wahlquist

Mid Continent Regional Award

Kansas Department of Health and Environment **Surface Mining Section**

Overman AML Reclamation Project

Prior to SMCRA, and before passage of Kansas' first reclamation law in 1968, over 14,000 acres in Cherokee County had been mined beginning in the 1870s but without reclamation. The Overman site, surface mined prior to 1950, left behind 2 dangerous high walls near heavily traveled roads. Working around a 4inch gas pipeline and with portions of one high wall already collapsed, reclamation at this site has eliminated 2,095 feet of dangerous high wall, established an enhanced wildlife area, increased shoreline, and provided new spawning grounds for fish.



Murray Balk, Tim Wilson, Darrell Preston(Kansas), Brent Wahlquist

Western Regional Award
Wyoming Department of Environmental Quality
Abandoned Mine Land Division

Kemmerer Coal Reclamation Project 17H, Phase I, Contract A

This extensive reclamation project successfully reclaimed multiple abandoned underground mines that had supplied coal to the railroads beginning in the late 1800s and in some cases and for different uses into the mid 20th Century. Numerous open or partially filled portals and abandoned mine workings created a severe problem. There were 5 open portals, 15 covered portals, subsidence opened to mine workings, coal slack stood in the watershed drainage and a firewall had to be built to halt an underground fire.

Taking advantage of available historic data the reclamation was carefully sequenced to remove significant dangers to a public that uses the area for outdoor recreation. At the Gomer mine site, care was taken to both close a portal and design an area as it would have been in the early days of active mining.



Harold Hudson, Ernie Robb, Todd Parfitt(Wyoming), Brent Wahlquist

Appalachian Regional Award
Pennsylvania Department of Environmental Protection
Bureau of Abandoned Mine Reclamation
Kalp and Melcroft AMD Abatement Projects

Underground mining near the Indian Creek and Champion Creek valleys - began in the mid to late 19th century. It continued into the 1960s and left behind serious acid mine drainage problems; flooding basements in the town of Melcroft, harming nearby streams, and damaging highways and croplands. With funding coming from OSM, Pennsylvania, US Department of Agriculture and private sources, mine drainage was abated using cross drilling techniques and lowering and treating mine pools.

This reclamation will lead to increased property values, enhanced educational and recreational opportunities, community revitalization, and improved economic development.



Eric Cavazza, Rich Beam(Pennsylvania), Brent Wahlquist

Article reprinted from OSM press release

Reclamation Closeup: Virginia's Buchanan County Park Highwall Project

At the 2007 NAAML Conference in Bloomington, Indiana, the federal Office of Surface Mining (OSM) recognized the Virginia Department of Mines, Minerals and Energy (DMME) for excellence in abandoned mine land (AML) reclamation. OSM presented DMME with its National Reclamation Award-Category II for reclamation of the Buchanan County Park Highwall Elimination Project.

The project is located directly adjacent to the Buchanan County Park, a heavily used recreational area. "The county had concerns with young children playing near the highwall and had even noted children attempting to scale the 60 foot highwall," stated Roger Williams, DMME's AML Services Manager. The project area contained over 3200 feet of Priority 2 dangerous highwall.



DMME contracted with the Buchanan County Industrial Development Authority (IDA) to accomplish the reclamation using the new AML enhancement rule. Buchanan County IDA subcontracted the reclamation work to a mining company that had a large surface operation adjacent to the park. OSM's 1999 AML enhancement rule allows the contractor to recover coal that is strictly incidental to the project excavation and use the sale proceeds to offset the cost of the reclamation. The enhancement rule requires special consultation between Title IV and Title V programs, but otherwise is similar to routine state projects.

The project resulted in 20 acres of flat to gently rolling land available for the county's recreational development. The reclaimed area has been used for youth soccer practices and now features children's playgrounds, a horse rink, and a community center with an indoor basketball court. As a service to Buchanan County, DMME assisted the county in obtaining a soccer start-up kit consisting of necessary equipment for implementing a youth soccer league at the park.

"To our knowledge, this was the first implementation of the AML enhancement rule in the nation," Williams remarked. "DMME realized an estimated cost savings of \$220,000 by implementing AML enhancement. With the cooperation of OSM, Buchanan County, DMME, and the contractor, this project met the highest goals of the AML enhancement opportunity. OSM's award



for the project is a well deserved recognition for the dedicated efforts of state, local, and federal agencies seeking to eliminate AML features and improve the local environment," Williams added.

For additional information on this project or implementation of the AML enhancement rule, please contact Roger Williams at Roger.Williams@dmme.virginia.gov or 276-523-8208, or Richard Davis at Richard.Davis@dmme.virginia.gov or 276-523-8216.

Richard Davis, DMME Minerals Specialist

Pennsylvania's Kalp and Melcroft Projects Succeed

The Pennsylvania Department of Environmental Protection, Bureau of Abandoned Mine Reclamation (PA-DEP BAMR), the USDA Natural Resources Conservation Service (NRCS), and the Mountain Watershed Association, Inc. (MWA), a local grassroots group, completed phase I of an innovative mine drainage abatement project. The Kalp and Melcroft Mine Drainage



Abatement project in Saltlick Township, Fayette County involved two abandoned underground mine sites that exhibit significant water quality and public health and safety problems. The Melcroft #1 mine pool at the Kalp site was recognized as a significant priority 2 health and safety hazard, because of its impact to adjacent homes, properties and public highways and its potential for a mine pool blowout. The Melcroft #3 mine pool at the adjacent Melcroft site was inundating a number of basements and causing considerable damage to homes and streets in the nearby Village of Melcroft.

Innovative technology aided the remediation efforts at both sites. In-seam directional drilling was used in the fall of 2005 to control the mine pools and collect and convey the mine discharges to locations where they could be treated passively. This was the first time that directional drilling was used on a Pennsylvania AML site. During the spring of 2006, PA-DEP BAMR released two contracts to dewater and chemically treat both the Melcroft #1 and #3 Mine pools in order to expeditiously address the aforementioned health and safety concerns and to aid in the design and construction of the pending phase 2 passive treatment projects. Approximately 30 feet of mine pool hydraulic head was gradually and permanently removed at both project sites.

The application of directional drilling technology provided a mechanism to address and reduce the blowout potential and furnished a lower cost, minimal disturbance alternative to route and consolidate AMD discharges for treatment. The phase 2 passive treatment project is nearing completion at the Kalp site and design of the Melcroft passive treatment system is currently underway.

Beneficial impacts of the Kalp and Melcroft projects encompass both the safety of local residents and substantial environmental restoration. Solutions to these water quality problems will provide many associated beneficial impacts including increased property values, increased opportunities for economic development, enhanced educational and recreational opportunities and improved aesthetics. Mine reclamation projects often stimulate community revitalization. A cost/benefit analysis conducted by NRCS indicated that each reclamation dollar spent in the Indian Creek Watershed would generate \$2.40 in economic benefit to the community.

The long-term benefits to the Indian Creek Watershed are the restoration of nine miles of coldwater fishery. The long-term benefits to the community are: an increase in property values; expanded opportunities to use the stream for fishing and other recreational purposes; a reduction of health and safety impacts from the mine pools and discharges; and an improvement in



community self-esteem. For this small, rural, southwestern Pennsylvania community, this result amounts to a priceless long-term benefit.

Richard Beam P.G., PA DEP BAMR, Cambria Office
Eric Cavazza P.E., PA DEP BAMR, Cambria Office

Millsap Tailings Project - More Than A Reclamation Project

“Thank you for helping make the best of a bad situation.”

“You can be one person to the world or you can be the world to one person.”

These sentiments expressed by inmates who worked on the Millsap Reclamation project.

Since early June, Colorado Department of Corrections inmates have been working with the Colorado AML Program at the Millsap Tailings site. Millsap is located near the historic mining towns of Cripple Creek and Victor in the mountains west of Colorado Springs, Colorado. Reclamation work involved re-contouring, capping and revegetating over 70 acres of historic mill tailings. The inmates are enrolled in the Buena Vista Heavy Equipment Vocational Training Program and are all non-violent and nearing the end of their terms. The number of inmates working at the site ranged from 10 to 20 people. They earn 60 cents an hour for their work. Students at the Millsap project learned to operate a variety of types of heavy equipment including excavators, bulldozers, graders, and dump trucks. They rotated through different



U.S. Senator Ken Salazar talks to inmates at a celebration honoring the project partners that was held in early October.

equipment and tasks about every three to four days. This gave them an opportunity to learn different operating skills as well as management techniques. The program is successful in training and developing life long skills which greatly reduces recidivism; easing the burden on Colorado’s prison system. This program provides jobs to the inmates and over 95% of the participants have jobs waiting when they are released. The vocational program utilizing offenders to perform work for governmental agencies saves taxpayers more than \$500,000 each year, based on in-kind services.

Tom Bowen, director of the DOC Vocational training program, started the program 12 years ago. Since its inception, over 140 inmates have graduated from the program. All were employed following their incarceration in good paying jobs. “This transitional program gives inmates a chance at success upon their release. We are literally teaching these guys how to run the equipment, but also so much more than that. They learned cooperation and responsibility,” said Bowen.



Before — Channel erosion in fine grained mill tailings, approximately 50 feet deep with near-vertical side walls, looking northwest

The project was challenging from a technical standpoint as well as financially. However, every challenge brought new opportunities to reach out to the community and to forge new partnerships. The tailings were deposited in the valley containing Millsap Creek decades ago. Two dams were originally built to contain the tailings but the dams failed. In recent years the tailings have been eroding and washing onto valuable agricultural lands and into the water supply for downstream communities. The tailings do not contain heavy metals or other acidic components. However, erosion caused the development of 60 to 80 foot highwalls that were a danger to the public.

There were no mining regulations in place at the time the tailings were deposited in the drainage. Consequently, there was no continuing reclamation responsibility for the cleanup. So the Colorado AML program brought together over 20 diverse groups including the Department of Corrections to complete the project.

This project would not have been possible without our partners: Bureau of Land Management, Office of Surface Mining, Cripple Creek and Victor Gold Mining Co., Teller County Commissioners Teller County Soil Conservation District, Bielz Trucking, Army Corps of Engineers, Colorado Soil Conservation

Board, Co. Dept. Public Health & Environment, City of Victor, Trout Unlimited, Bob Shoemaker, Victor Fire Department, Woodland Park Sanitation, Kessler Reclamation, Wagner Equipment Rental, Fremont County Commissioners, Plainview Ventures, Department of Corrections Facilities, Canon City. Reclamation and safeguarding at the site was performed for a project cost of \$800,000. This includes in-kind and cash match provided from the project partners.

More than one inmate expressed gratitude for the experience. One inmate said, “I didn’t have a lot of worth and this teaches me to get up early and to work. Thanks for supporting this program which gives us a chance to become citizens and a chance at life.”

For the Colorado AML program staff that worked with the Department of Corrections and with the inmates it was truly a rewarding experience...restoring abandoned mined land while helping individuals reclaim their lives. This made the project “more than just a reclamation project”.

**Julie Annear, Colorado AML Program
Project Coordinator**



After — View looking northwest across the channel shown above (from farther away)

Illinois AML Reclamation Enriched By Lafarge Partnership

The Illinois Department of Natural Resources’ Abandoned Mined Lands Reclamation Division (AMLRD) is utilizing an alkaline by-product of cement manufacturing to aid in the reclamation of acid producing abandoned mine sites in Southern Illinois. The AMLRD has been utilizing various alkaline by-products in reclamation since 1992 to limit acid mine drainage (AMD) production. In 1999 a new by-product material became available to the AMLRD. Cement Kiln Dust (CKD) a highly alkaline white dust derived from the manufacture of cement was offered by the Lafarge Group, a world leader in building materials. The CKD has a pH of 11.85 and

a calcium carbonate equivalent of 720 tons per 1000 tons. The CKD is produced at the Lafarge Group Joppa Cement Plant in Grand Chain, Illinois. Since 2003, the Joppa Cement Plant has provided over 430,000 tons of CKD for reclamation of abandoned mine sites in Southern Illinois. The use of Joppa CKD has allowed the introduction of additional alkalinity into acid producing abandoned mined lands that otherwise would have been economically unfeasible. The AMLRD is utilizing CKD in a variety of ways to treat and limit AMD production at the following three project sites:



Project: Peabody Will Scarlet Mine
Owner: Private Ownership
Project Cost: \$993,146

The Will Scarlet site is a pre-law surface mine that contributes heavily mineralized and acidic seeps into the South Fork of the Saline River. The spoil material contains pyritic sandstones that leach acid as they weather, polluting adjacent surface water impoundments. The ridges and valleys of the mine spoil trap surface water and charge the ground water system with acidified water. The groundwater flows to the impoundments and to the South Fork. Reclamation includes filling the valleys with CKD to eliminate the surface water trap. The spoil ridge tops are graded to promote positive runoff while capping the CKD valley fills. After reclamation, precipitation that was once trapped in the valleys is directed away from area with minimal grading. Any infiltration into the valley fills will contact the CKD and transport alkalinity into the groundwater system. This technique has limited infiltration and created a potential alkaline recharge zone.

Project: Sahara Coal Co. #6 Mine, Phases I- V
Site: Sahara Woods State Fish and Wildlife Area
Owner: Illinois Department of Natural Resources
Project Cost: \$9,319,430

The Sahara Woods site contains 450 acres of acid producing gob piles from past underground and surface mining operations. The large gob piles were re-graded to promote positive drainage and direct surface runoff away from the piles. CKD has been incorporated into the upper strata of the re-graded gob. A 3' thick soil cover cap was constructed over the gob piles to discourage precipitation from entering the pile. Any infiltration entering into the pile will contact the CKD and transport alkalinity into the pile. This reclamation technique has limited acid seep production and the subsequent acid loading flowing into Bankston Creek. Continued monitoring of surface water discharges will examine the long term effectiveness.



Project: Palzo Mine, Phases I - II,
Site: Palzo Tract
Owner: U.S.D.A. Forest Service
Project Cost: \$1,585,720

The Palzo site is a partially reclaimed surface mine that contributed heavily mineralized and acidic seeps into Sugar Creek, completely devastating life in the stream. The spoil material, ungraded and re-graded, contains pyritic sandstones that leach acid as they weather, polluting the groundwater. CKD has been mixed with soil and placed in compacted layers to reduce the infiltration of surface precipitation and runoff into the subgrade. CKD has also been mixed with the acidic spoil to neutralize it. This reclamation technique has reduced the volume of infiltration and the subsequent acidic seeps into the stream. Monitoring continues to determine the long term effects of the cap on groundwater quality.



Arkansas To Reclaim The Number 6 Mine Project

The proposed 8-acre Number 6 Mine Project is located in western Arkansas approximately 2 ½ miles west of Huntington, Arkansas. There are two shafts and two gob piles on the proposed project area. According to historical records, the Central Coal and Coke No. 6 Mine, with mine shafts over 285 feet deep, operated from about 1908 until the late 1920s.

The Number 6 Mine Project will be completed in two phases. The first phase will be comprised of backfilling a hoisting shaft and hauling two gob piles to a strip pit east of the project. The estimated cost to do the first phase is \$196,500. The second phase will consist of the construction of vertical flow ponds and an aerobic wetland that will treat an artesian discharge from the second shaft. The second phase will commence once representatives from the Office of Surface Mining's (OSM) Mid-Central Regional Office devise a plan to treat the artesian discharge.

There are numerous concrete remnants of the No. 6 Mine on the site. The Arkansas Department of Environmental Quality (ADEQ) was mindful that their presence would elicit a recommendation to conduct a cultural resource survey prior to any reclamation work. The cost of the cultural resources survey was \$8,750 and contrary to the report's determination that the remnants were not eligible, the State Historic Preservation Officer (SHPO) concluded that the eligibility would remain undetermined. However, recognizing the real environmental and safety hazards on the site, the SHPO concluded that the ADEQ's proposed work should not be postponed, provided the Department preserved as much of the existing above-ground remains as possible.

OSM conducted an in-house pH paste test on samples from both gob piles and the north gob pile was 3.37 and the south gob pile was 1.96. A substance with a pH paste of less than 4.0 is defined as an acid- and/or toxic-forming material. Approximately 50,000 cubic yards of gob material will be buried in an open pit of a permanent program permit that has undergone bond forfeiture action. With all alternative enforcement actions having been exhausted, there were still insufficient funds to complete the



reclamation. Making use of the permanent program site provides for a convenient Title IV disposal area while at same time achieving the Title V reclamation that might go unrealized for years to come.



Closeup of AMD

One of the airshafts has a continuous discharge of water containing significant amounts of iron that precipitates out and forms a yellow-orange crust on the stream bed. The discharge has continued unabated throughout the hottest and driest of Arkansas summers. The other shaft has no discharge but a 10-foot drop to the water level. The side walls of the non-discharging air shaft are sheer with no hand hold should someone fall in. It contains a large number of floating bottles and garbage. On January 30, 2007, representatives of the Office of Surface Mining used a video camera to examine both flooded shafts. The depth of the non-discharging shaft was 45 feet and the discharging shaft was 255 feet deep.

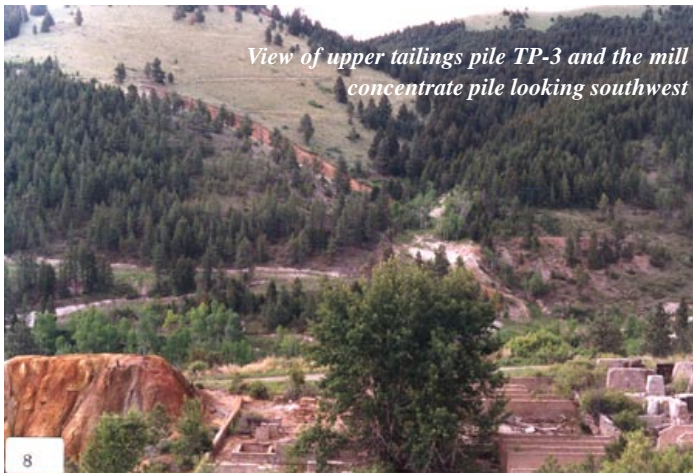
Wayne Van Buren, Arkansas DEQ

Spring Hill Mine - Montana

The beer is cold and the fire is hot. The lookout is posted 300 yards from the mine entrance; the fire is roaring up through the natural chimney, the Glory Hole. High school kids are confident that no law enforcement will follow them into the myriad of tunnels at the Spring Hill Mine.

Another Saturday night near Helena, Montana, and you've got trouble my friend. Right Here.

Montana's Abandoned Mine Land Program installed guardrails and trenches to banish third generation revelers and pranksters from the site and then set to work plugging tunnels and eliminating attractive nuisances. Burned out stolen vehicles were hauled off for junk and tailings piles were consolidated and capped to limit exposure to arsenic and lead. Once hazards to human health and the environment were eliminated, the whole site was revegetated and the restoration complete.



View of upper tailings pile TP-3 and the mill concentrate pile looking southwest

With the completion of the reclamation project the Spring Hill Mine was about to enter a new phase of its history. In December 1999, the Prickly Pear Land Trust purchased the property to preserve open space and to connect a network of USFS public trails south of Helena. On July 1, 2007, after seven years of fighting assorted bureaucratic red tape and mountains of paperwork, the reclaimed Spring Hill Mine Site has been deeded to the Forest Service and the trail connections completed. This partnership between the state AML program, the Prickly Pear Land Trust and the US Forest Service has extended access to public lands and improved the environment for current and future generations.

History:

The Spring Hill Lode, located 3 miles outside Helena's city limits, was patented in 1866. Between 1885 and 1890, 23,000 tons of ore were shipped from the mine. A valuable gold vein was discovered in 1906, renewing interest in Spring Hill. The mine

employed 65 men and within the next few years and additional 21,000 tons of ore were processed. In 1929, the mill was converted from cyanide mill to a flotation mill, treating another 40,000 tons of ore and producing an additional 66,055 ounces of gold before the final shutdown in 1939.



View of the tailing pile TP-1 dam prior to reclamation looking southwest

The Objectives of the Spring Hill Tailings Reclamation Project were specifically selected to limit human and environmental exposure to contaminants and reduce the mobility of those contaminants in surface water and groundwater resources. The total surface area of the consolidated tailings area is approximately 11.9 acres. A rip-rap-lined stream channel, designed to convey the 100-year flood flow, was constructed along the northern perimeter of the tailings piles.

A runoff control swale and a runoff control ditch were constructed along the southern perimeter of the tailings. A geosynthetic clay liner, geocomposite drainage layer, and a 1.5 feet thick soil cap were placed over the tailings and then re-vegetated.

Reclamation work started in August 1999 the contract did not include provisions for winter shutdown. Costs were \$1,137,183 for reclamation construction and \$234,847 for engineering and construction management. The work was completed as designed and was substantially finished by December 1999, including reclamation of roads constructed at the site. The areas targeted for reclamation at the Spring Hill Tailings have been reclaimed and the hazards associated with the site have been mitigated.

Spring Hill today has the look and feel of a peaceful mountain meadow. In October 2007, Montana AML staff returned to the site.

Fast forward seven years –

The Prickly Pear Land Trust has successfully negotiated the land transfer to the U.S. Nation Forest Service for use by current and future generations



Evidence shows that elk and deer make are regular visitors to the site. Residents and guests use the trail system that winds through the mountains south of Helena. Damaged caused by motorized vehicles has been repaired or is naturally recovering. This restoration of this site shows that Montana's AML program plays both important and successful role in protecting the environment and human health.

For more information on this and other Montana Reclamation sites, please visit:

<http://www.deq.mt.gov/AbandonedMines/Index.asp>

J. Koerth and H.A. Cannon Montana DEQ

Overman AML Reclamation Project

The Overman Project addressed Priority 2 dangerous highwalls along two county roads in Cherokee County, Kansas. In 1999, an 80 foot long section of the highwall sloughed off, endangering the road and a four inch high pressure natural gas pipeline. That portion of the project was addressed as an emergency in order to secure the pipeline and prevent damage to the roadway, but the potential for additional slides remained. Engineering design on a permanent solution was started in November 2001 by Spectrum Engineering of Billings, Montana. Construction was completed in June 2003 by Preston Construction Company of Columbus, Kansas at a final cost of \$238,812.85.



The project eliminated a total of 2095 feet of dangerous highwall which was from 15-20 feet away from the roads. There was a 15 foot drop over the highwall to the surface of the strip pit impoundment where the water depth ranged from 15-20 feet. Adding to the problem, the impoundment drained and seeped in an uncontrolled fashion saturating the roadbed, and creating flood and maintenance problems.

To address the highwall and drainage problems, a rock fill toe was designed. The rock toe had a 12 foot wide top bench top, was located 80 feet from the road and contained 6,000 tons of 18" light riprap. An earthen berm built between the road and the rock toe provided a recovery area for stray vehicle, while directing stormwater to a new grass lined outlet channel. Lying at an angle of repose, the rock toe buttressed the earth berm, reduced the amount of fill required, and reduced the amount of water surface lost.

A portion of the pond was filled in and replaced with a new pond. The new pond design eliminated the "bathtub" look typical of strip pits and created some shoreline sinuosity. It was connected to the older, deeper portions of the existing pond with a pool-channel structure, traversable in low water. Benches provide transition from the original deep water to shallow connector channels with deeper pools in between. The new design provided for 3H:1V side slopes on the six foot deep connecting channel to minimize problems with plant invasion.

Approximately 212,420 cubic yards of material was moved to complete the highwall stabilization and pit relocation. The area was treated with a lime/mulch mixture to neutralize potentially acid/toxic spoil material and help rebuild a beneficial microbial population to enhance vegetative growth. Fertilizer was applied and timothy, orchard grass, red clover and ladino clover were seeded over 18 disturbed acres. Approximately 2500 trees were planted including redbud, oaks, dogwood, honey locust and pecan.

While the landowners were initially hesitant about the project, they now enjoy waterfowl hunting made possible by the restructuring of the slopes, in addition to fishing. Shoreline footage was increased due to the completion of the new curvilinear design of the pond. Introduction of shallow areas has promoted new spawning grounds for the resident fish population, while the construction methods employed salvaged the majority of the fish without the need for restocking.

**Marlene Spence
Kansas Department of Health and Environment
Surface Mining Section**



AML Reclamation Through TMDL Crediting

The Virginia Department of Environmental Quality lists many streams in the southwest Virginia coalfields as 303d impaired streams. The Virginia Department of Mines, Minerals and Energy (DMME) has contracted for Total Maximum Daily Load (TMDL) investigations on a number of these coalfield streams. Many of the 303d impaired streams list resource extraction as one of the impairments. With nearly a century of pre-SMCRA mining in southwest Virginia, it is easy to understand how abandoned mine lands have impacted and continue to impact these streams.



With the understanding that AML sites are often impairments on 303d streams, DMME proposes that applicants for mining permits reclaim AML sites to reduce the pollutional loading of impaired streams. Such agreements would accomplish reclamation of the AML feature(s) at no cost, and allow the regulatory authority to issue permits.

TMDL investigations quantify the pollutional loading for a number of pollutants. If any pollutant is at its maximum, additional loadings for the stream cannot be approved. Such limitations can effectively block additional disturbances such as new mining operations.

As of November 2007, DMME has two pending TMDL crediting projects. Both projects will accomplish reclamation on abandoned gob pile features and reduce pollutional loading in the impaired stream. With the offsets, DMME can proceed to approve permit applications in the watershed.

For additional information on this project or implementation of TMDL crediting, please contact Roger Williams at Roger.Williams@dmme.virginia.gov or 276-523-8208, or Richard Davis at Richard.Davis@dmme.virginia.gov or 276-523-8216.

Richard Davis, DMME Minerals Specialist

Vic Andersen Retires

Vic Andersen, Montana AML Chief, retired December 28, 2007. Vic was Vice President of NAAML in 1994 and President in 1995. Vic presided over the NAAML Conference in Kalispell in 1996 and again in Billings in 2006. Vic's fondest memory of the NAAML Conferences was all the birthday desserts that he got to enjoy at the 1996 Conference.

Vic served a total of 38 years of government service, including 15 years as head of Montana's abandoned mine reclamation program. Vic started with the State of Montana in June of 1973 in the Solid Waste Program. During his time in government he organized and started many ground breaking environmental programs including junk vehicles, underground storage tanks, hazardous waste and



Superfund. Vic applied his organizational talents to revitalizing the Montana AML program in 1992. Vic recently reflected that he liked AML best of the various programs that he had worked on "because AML folks are the finest folks in the world, and unlike other federally funded environmental programs, AML got things done".

Vic will be retiring to volunteer work for the Montana House Sanctuary. The goal of the non-profit Montana House Sanctuary is to improve the life for horses by providing a safe sanctuary for horses in need, whether displaced from a loving home, or turned over to law enforcement because of abuse or neglect. The sanctuary provides refuge, rehabilitation, and placement of horses, as well as wide array of educational opportunity for horsepeople.

John Koerth, Montana DEQ

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 Spring edition is April 15, 2008.

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

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