Indiana AML Program Wins Regional Award

AML Site 2083, Sugar Ridge Fish & Wildlife Area 2, received the Office of Surface Mining's 2017 Mid-Continent Abandoned Mine Land Reclamation Award. The project addressed a dangerous highwall and exposed gob material within a popular public fish and wildlife area.

The design involved burying the gob pile in the bottom of the pit to isolate it from oxygen. Unfortunately, adjacent underground mine workings formed direct conduits to another large pit on the property over a mile away, causing blowouts in the gob disposal area. After establishing an outlet on the second pit, staff worked quickly to install a series of temporary dams and plugs to stabilize the blowouts and proceed with the reclamation project.

Geomorphic landform grading techniques were used to tie the highwall backfill material into the landscape and to mimic natural drainage patterns throughout the site. Major sources of acid mine drainage were eliminated, and wetlands were enhanced by planting native species. Great fishing opportunities are now more accessible due to improved trails and a lakeside bench. Increased meadow openings, forest edge, and upland game habitat provide additional recreational opportunities.

2017 Project Summary

<table>
<thead>
<tr>
<th>Project Type</th>
<th>Total</th>
<th>Funds Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>AML</td>
<td>9</td>
<td>$7,382,420.84</td>
</tr>
<tr>
<td>Emergency</td>
<td>9</td>
<td>$44,324.00</td>
</tr>
<tr>
<td>STRC&amp;D</td>
<td>3</td>
<td>$33,663.38</td>
</tr>
<tr>
<td>Tree Planting</td>
<td>2</td>
<td>$25,806.00</td>
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<tr>
<td>Unit Price Contract</td>
<td>39</td>
<td>$307,656.68</td>
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<tr>
<td>Construction Total</td>
<td>62</td>
<td>$7,793,870.90</td>
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<tr>
<td>Special Services</td>
<td>11</td>
<td>$341,593.02</td>
</tr>
<tr>
<td>Grand Total</td>
<td>73</td>
<td>$8,135,463.92</td>
</tr>
</tbody>
</table>

These figures represent all Abandoned Mine Land reclamation projects that received funds in 2017.

The Special Services category includes aerial photography, exploratory drilling, and other special grant-funded projects.
**AML Projects**

**Site:** 287, Friar Tuck Wetlands  
**Location:** Wright Twp., Greene Co.  
**Cost:** $799,057.48  
**Dates:** 8/13/17 - 1/9/18

**Problem Description:** Acid mine drainage (AMD) from two previously reclaimed coal refuse piles was degrading the water quality of Mud Creek and one of its tributaries. The tributary was among the worst AMD-impacted streams in Indiana, with a low pH and high concentrations of dissolved metals, whereas sedimentation of precipitating minerals downstream of the confluence of the two streams significantly degraded the water quality of Mud Creek.

**Reclamation:** A multi-component water treatment system was designed and built to attenuate the AMD entering the tributary to Mud Creek. Five treatment cells and seven sediment ponds were constructed in two of the three branches of the tributary to treat the water and add alkalinity to those branches. Water from the two branches was then combined with the third, severely impacted branch in order to remove dissolved metals as precipitated minerals. Two sediment ponds were built downstream of the confluence of the tributary branches in order to trap the precipitated minerals and prevent them from being flushed into Mud Creek.

**Other AML Projects**

<table>
<thead>
<tr>
<th>Site</th>
<th>Name</th>
<th>Site</th>
<th>Name</th>
<th>Site</th>
<th>Name</th>
<th>Site</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1803</td>
<td>Gambill Lake Highwall</td>
<td>1804</td>
<td>Steep Lake Highwall</td>
<td>2115</td>
<td>Weigand</td>
<td>2148</td>
<td>McElroy Subdivision</td>
</tr>
<tr>
<td>2151</td>
<td>Hickory Grove Highwalls</td>
<td>2197</td>
<td>Collie Road Highwall</td>
<td>2253</td>
<td>Cross Highwall</td>
<td>2273</td>
<td>Trimmer Hill Highwalls</td>
</tr>
</tbody>
</table>

*Ongoing Project

**Emergency Projects**

**Site:** 3081, Bigly Subsidence  
**Location:** Nevins Twp., Vigo Co.  
**Cost:** $4,632.96  
**Dates:** 1/25/17 - 1/26/17

**Problem Description:** A dangerous opening 6 feet in diameter and 8 feet deep formed in a gravel lane at the Vigo County Conservation Club.

**Reclamation:** The opening was excavated to a stable base and backfilled with 82 tons of aggregate.
Unit Price Contract Projects

Site: 2287, Sittig Subsidence  
Location: Lewis Twp., Clay Co.  
Cost: $10,674.88  
Dates: 7/10/17 - 7/19/17

Problem Description: Although it’s common to find a variety of trash items in old subsidences, this particular subsidence contained a very unusual object. During the site investigation, an item that appeared to be an old bomb or missile was discovered. The Indiana State Police was initially contacted and investigated the unusual object. They suggested we contact the US Air Force Explosive Ordnance Disposal Unit at the Grissom Air Base. Two sergeants from that unit visited the site and determined the object was an MK 88 Practice Bomb from the Vietnam War era and properly removed it from the site. It is now being used for training purposes at Grissom Air Base.

Reclamation: Once the bomb was removed, the subsidence was filled using typical reclamation techniques.

Sycamore Trails RC&D

Site: 2527, Sandytown  
Location: Clinton Twp., Vermillion Co.  
Cost: $22,445.74  
Dates: 8/30/17 - 9/12/17

Problem Description: This site consisted of two lakes created by an abandoned coal mine, one of which contained exposed coal refuse resulting in impaired water quality. During rain events, fish kills occurred due to the highly acidic water influx.

Reclamation: The coal refuse was excavated and a 4” layer of lime was blended into the material. Clean soil was generated on site to cover the coal refuse area. The landowner removed several trees along the channel and revegetated the site as his match for the program.
Special Services
Contract Projects

ATC performed geotechnical drilling investigations at multiple potential grouting project locations.
ATC also completed their design services for AML Site 882, Snow Hill.
Williams Aerial & Mapping collected digital aerial photography for several AML sites.
Purdue University compared survival rates of bare root and container seedlings on reclaimed sites in this ongoing project.

Tree Plantings

<table>
<thead>
<tr>
<th>Site</th>
<th>Name</th>
<th>Acres</th>
<th># Trees</th>
</tr>
</thead>
<tbody>
<tr>
<td>146</td>
<td>Davis Cemetery</td>
<td>25</td>
<td>20,300</td>
</tr>
<tr>
<td>1744</td>
<td>Smith Creek Planting</td>
<td>11</td>
<td>9,100</td>
</tr>
</tbody>
</table>

Staff News

Two Project Managers were hired this year. Jay Akes started on January 3, and Travis Dunn started on October 23.
Site Investigator Andy Ripley welcomed daughter Brooklyn Shannon on January 11.
GIS Inventory Specialist Jill Flachskam accepted a position with the State Land Office. Her last day was October 20.

Staff Awards

Reclamationist of the Year:
Kit Turpin, Project Management Supervisor

Outstanding Achievement:
Nick Lorenzo, Project Manager
Andy Ripley, Site Investigator

Esprit de Corps:
Kim Tibbett, Financial Officer

Five Years of Service:
Jill Flachskam, GIS Inventory Specialist
Andy Ripley, Site Investigator

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