

**OFFICE OF SURFACE MINING RECLAMATION
AND ENFORCEMENT**

*Annual Evaluation Summary Report
for the
Abandoned Mine Lands Program
Administered by the Public Service Commission
of the State of
NORTH DAKOTA
for
Evaluation Year 2000
(October 1, 1999 to September 30,2000)*

Grout truck falls into subsidence hole in Beulah, North Dakota

2000 ANNUAL REPORT FOR NORTH DAKOTA

Part I. Introduction

The North Dakota Abandoned Mine Land Reclamation (AMLR) program operates under the guidelines of the Surface Mining Control and Reclamation Act (SMCRA), the approved State Reclamation Plan, the Federal Assistance Manual, and associated rules, regulations and policy decisions. The State program is administered by the Abandoned Mine Land Division (AMLD) of the Public Service Commission (PSC). The State was granted primacy in 1981 and they administer an excellent AMLR program in full compliance with their approved AMLR Plan. Oversight of the program is conducted by the Casper Field Office (CFO) of the Office of Surface Mining (OSM), and the topics of this report were selected in a shared commitment process with the State. Annual evaluation methods are based on OSM Directive AML-22 and the Performance Agreement with the State. This report covers the period of October 1, 1999 to September 30, 2000.

Being a minimum program state, North Dakota receives only \$1.5 million each year to accomplish the necessary abandoned mine reclamation. Therefore, the AMLD must complete the work in a most efficient and cost effective method to stretch this funding as far as possible. All of the design work continues to be completed in house by the existing AMLD staff, and then the actual construction work is contracted out to private construction firms. The minimum funding does not allow the majority of the projects to be completed in one construction season, so they must be phased over a period of years to achieve adequate reclamation. Chart #1 lists projects that are ready for construction if additional funding were to become available, as well as the estimated cost of each of the future projects.

The AMLD starts the construction season each spring as soon as weather conditions will allow heavy equipment to traverse the unpaved rural road system to get to the sites. Work continues until it is halted by the severe weather conditions usually encountered in North Dakota during the winter. Some types of reclamation activities can continue through the winter months, but this time of year is generally when future projects are designed and other duties necessary to get projects ready for the next construction season are completed. All of the reclamation completed to date by the AMLD has been on abandoned coal mines. The State will not complete all the proposed reclamation listed on their inventory before the expiration of the AMLR funding in 2004.

The CFO continues to enjoy an excellent working relationship with the staff of the North Dakota AMLD. Their personnel are experienced, knowledgeable and dedicated to the program goals. The AMLD also maintains a good relationship with the other State and Federal agencies that

must be contacted during the course of preparing projects for reclamation. One AMLR grant was awarded to the State during this evaluation period and it was approved well within the government performance requirement of 60 days. No problems or issues exist in the North Dakota AMLR program.

The following is a list of acronyms used in this report:

SMCRA Surface Mining Control and Reclamation Act
AMLIS Abandoned Mine Land Inventory System
AMLR Abandoned Mine Land reclamation
AMLD Abandoned Mine Land Division
PSC Public Service Commission
OSM Office of Surface mining
CFO Casper Field Office
PADS Problem Area Data Sheet

Part II. Noteworthy Accomplishments

Several subsidence events occurred in the town of Beulah in roadways, borrow ditches, under commercial structures and around private residences. This required a massive drilling program to locate underground voids in critical areas so that they could be grouted. In some cases drill rigs and grouting pumps had to be placed right against both public and private structures, in heavily utilized roadways and in residential yards. To prepare for this unprecedented disruption of lifestyle in Beulah, the AMLD established a very close relationship with the town officials and private citizens to keep them informed of the reclamation schedule, and the problems that would occur in the daily routine of all concerned. Several public meetings were held to explain the project design and gather citizen input before any reclamation was started. All through the actual construction contact was maintained with the people in the reclamation area, and a hotline was well publicized so that anyone could immediately contact AMLD personnel or the contractor. When the project was completed additional public meetings were held and surveys were completed to see how the public felt about the conduct of the project, and to see if changes were warranted in future grouting projects that will be necessary in the town. All feedback from these meetings and surveys was positive, and the citizens expressed appreciation for the way the entire project was handled by the AMLD.

Several articles were written by AMLD personnel during this evaluation period and published in the National Association of Abandoned Mine Land Programs newsletter. This newsletter is widely circulated through the coal producing states. These articles described reclamation projects that the AMLD had completed, including the technology used in both design and construction. Several inquiries from other states were received, and in the past AMLD personnel have been requested to visit some states and assist them in methods of reclamation used by North Dakota.

A web site for the North Dakota Public Service Commission was designed and constructed by the AMLD director. Public business conducted by the PSC is now available to the general public

in a timely manner. In the AMLD portion of the site, digital equipment is being used to post before and after photographs and videos of reclamation projects. Design specifications for projects are also posted, as are bid tabulations. Safety measures in regard to abandoned mines are also prominently displayed on the web site.

During this evaluation period AMLD personnel filmed a video about the Noonan Abandoned Coal Mine in Divide County. This is a 1,400 acre surface mine on which a number of reclamation projects, including two emergency projects, have been undertaken. Hazards at the site include dangerous highwalls and endwalls, pit backfilling, spontaneous combustion of coal fines and burial of spoil and coal fines to eliminate the fuel source for fires. The video includes an extensive look at the history of the mine, interviews with elderly miners and people associated with the mining activity, and a detailed look at the reclamation efforts. The purpose of the video is to educate the general public on the hazards of abandoned mines in North Dakota, provide an overview of the mission of the AMLD in the reclamation of abandoned mines and to serve as historic mitigation in regard to abandoned mine reclamation. The video has been produced in conjunction with a local television station and will be shown on a public service cable station. Copies of the video will also be available in schools and local libraries throughout the State.

Part III. On-Site Evaluation of Reclamation Projects

During this evaluation period one pre-construction project and eleven completed projects were visited. One of the completed projects was the Washburn Emergency Fire project, which was located about four miles west of the town of Washburn. Two farms are located between the fire site and the town, and the prevailing wind could have easily pushed the fire through these farms and possibly into the town. Most of the area downwind of the fire is in the Conservation Reserve Program and is heavily vegetated, providing excellent fuel to spread a fire. The emergency project successfully contained the fire and buried the coal fines to prevent future fires (see chart #4). The other emergency project was in the town of Beulah and consisted of two deep, straight walled subsidence openings. One opening was adjacent to a 500 foot radio tower and one of the tower support cable anchors was in the wall of the subsidence pit. Failure of the anchor could have caused the tower to collapse. In addition, the areas of both subsidence features were heavily utilized by hikers, trail bikes and hunters.

The pre-construction site was a cultivated sunflower field in which the landowner had previously counted 16 separate subsidence events. The sunflowers were seeded solid and about 5 feet high, so there were no rows to walk or allow advance vision of the surface. The holes were very difficult to find and reclamation will not be attempted until the crop is harvested. Heavy rains just prior to our visit and the thick sunflower crop that kept the surface shaded from the sun made perfect conditions for subsidence of shallow underground mines.

Hazards on the other nine completed projects consisted of dangerous highwalls which were usually adjacent to roadways or railroad tracks, pits, impoundments, spoil piles, portals and subsidence. Water is saved whenever possible in North Dakota reclamation. It is a valuable asset to landowners for livestock, and for wildlife use. The AMLD coordinates with Ducks Unlimited and the State Fish and Game Department in the design of any site that has water that

can be retained. When funding requires that a project be completed in phases, the most dangerous part of the site is completed in the first construction season and the rest of the site is reclaimed in succeeding seasons. An example of this phased reclamation is found in the Custer Project. This was a surface mine that covered about one section of land, and it was reclaimed in three phases. The first phase eliminated a highwall that was immediately adjacent to a paved major roadway. The second and third phases eliminated highwalls that were further from roadways and concentrated not only on the elimination of the hazards, but the enhancement of the area for wildlife. Another site, the Lehigh Road Project, is on its fifth phase now and will take at least two more phases before it is completed.

It is very difficult, if not impossible, to recognize reclaimed abandoned mines in North Dakota that have gone through two or more seasons of vegetation growth, from the surrounding terrain. The great majority of the AMLR sites have a vast amount of good quality topsoil on them so revegetation is usually not a problem, and each site is left as near to the original contour as possible. The Zenith Project, pictured below, is a good example. Before reclamation the site looked like a photograph of a World War II bombing zone, and the mine layout was pretty well exposed to the surface. After reclamation it looked no different than the surrounding landscape.



A portion of the Zenith Site taken during a contractors bid showing in 1987.



The same area after reclamation. This photo was taken in 2000.

Overall, the North Dakota AMLR program filled 102 subsidence holes, extinguished one coal fire, completed two underground grouting projects, eliminated 1400 feet of dangerous highwall and reclaimed a total of 233 acres of abandoned mine land (see chart #II). Maintenance of previously reclaimed sites required 3.6 percent of the total grant construction budget. Chart #III shows the projects that were completed during this evaluation period and the cost for those projects.

Part IV. Status of the Approved Reclamation Plan

No amendments to the approved reclamation plan were made during this evaluation period, and no amendment activity is scheduled for the future.

Part V. Fiscal and Administrative Controls

A drawdown analysis was conducted on North Dakota's existing AMLR grant. In all cases expenses equaled drawdowns and these drawdowns occurred after the expenses were incurred. Travel expenses within the State and travel policies regarding AMLD personnel were also examined, and charges were found to be accurate and in accordance with approved policies and procedures. In each case receipts for lodging were attached and supervisory approvals for the expenditures had been obtained. Time sheets for AMLD personnel were examined for accurate input into the accounting system and to ensure that time charged to field work matched the travel vouchers that had been filed for that work. The time had been charged properly and coincided with the appropriate travel vouchers.

Program income was reviewed to ascertain the sources and amount of such income. The AMLD derives program income from the sales of bid specifications to potential construction bidders. The State is properly recording AMLR program income and it is being correctly applied to the

grant. AMLD procurement policies and procedures, as well as some specific purchases, were reviewed. The charges incurred, and the approvals for purchases, were appropriate and properly filed. There are no outstanding issues from past A-133 audits. A risk analysis was conducted during this evaluation period, and it did not indicate that additional audit activities were necessary. Early in the calendar year of 2001, the State is scheduled to conduct another risk analysis in accordance with the A-133 Directive. North Dakota is timely in applying for AMLR grants and in submitting the required reports to the CFO. No problems were noted in regard to the State's fiscal or administrative controls.

Part VI. Drilling and Grouting Program

In past evaluation years separate drilling projects have been conducted to locate specific underground voids for grouting. No such projects were undertaken during this evaluation period. However, some drilling was completed in conjunction with the Lehigh Road and Beulah grouting projects that were reclaimed this year. When a void is located by drilling it is cased, capped and marked on a map for future grouting. This also allows the most hazardous voids to be identified and grouted first. The Lehigh Road Project is located just outside the city of Dickinson in the western part of the State. The area east of Dickinson has been heavily undermined, and the Lehigh Road is the main artery to the landfill, some businesses and several residences. Subsidence has occurred on several occasions in this road, side roads, and the adjacent borrow ditches, threatening to close the roads to all traffic. Had the Lehigh Road been closed, school buses, local traffic and emergency vehicles would have had to make a twenty mile detour to get to populated areas, so the reclamation of the abandoned underground mine voids under this road, and the side roads, was considered critical. Surveys have shown that approximately 200 citizens use these roads every day, in addition to the school buses, emergency vehicles and garbage trucks. The State has scheduled two more phases of this project to complete the work.

The town of Beulah is located in the west central part of the State and is also heavily undermined. Four phases of AMLR projects have been completed in and around the city in the past, and additional subsidence events have recently occurred within the town. Drilling to locate the voids, and grouting them, becomes more difficult when they are located under homes and other structures. In one case the contractors had to go inside of a large building to locate and grout voids under it. One emergency subsidence project was also completed in Beulah during this evaluation period (see chart #4). The population of the town of Beulah is approximately 6,000 and each one of these people will benefit from the reclamation. In addition, millions of dollars in property damage and insurance payments would probably be necessary if these voids were not stabilized. The AMLD plans five more phases of the project to eliminate the hazards of past underground mining in the Beulah area.

Part VII. Construction Procedures

No major change orders were necessary in any of the reclamation projects undertaken during this evaluation year. Small change orders are required on most projects that are involved with spoil piles, tailings, backslipping and other large earth moving activities to adjust original material volume estimates. It is very difficult to estimate exact volumes before reclamation, but upon

project completion more accurate figures are available. Since AMLD personnel have done all the design work for the program since its inception, they have a good feel for what the work should cost. Therefore, pre-project estimates and actual bid figures are usually pretty closely aligned with the final project costs. The AMLD has been very satisfied with the quality of work obtained from their contractors. Many of the contractors have worked on AMLR projects for several years and have an excellent knowledge of how the jobs should be done, and they have established a good working relationship with the AMLD personnel.

Part VIII. Administrative Planning

As mentioned above, most of the administrative planning for the program is done during the winter months when outside reclamation work is not practical. All the required clearances are contained in the grant applications, or they are in the project files in the AMLD office. Written right-of-entry is obtained before any work is done on private property, and public meetings are held prior to the reclamation of any site to gather public input and comments. The AMLD is very conscientious about all of the administrative functions of the grant program.