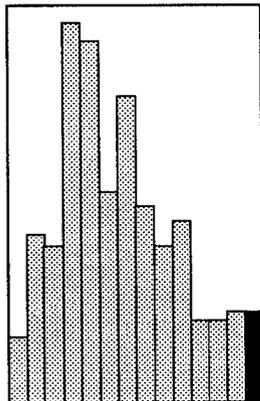


5. TECHNICAL ASSISTANCE

RESEARCH



Number of Research Projects Funded 1978-91

OSM conducts research studies to find ways to help mine operators and State and federal regulators do a better job of handling the everyday problems associated with implementing SMCRA. These short-term research studies are directly related to the implementation of Title V regulations affecting active coal mining operations and provide practical answers to specific problems. In 1991, OSM research funding totaled \$1,000,000, a 35 percent increase over 1990 funding. Research funds were provided to universities in support of the following projects:

- Evaluation of the Biotic Potential of Microorganisms and Higher Plants to Enhance the Quality of Constructed Wetlands;
- The Independent Variables Controlling Leachate Quality Prediction/Production in Overburden Analysis;
- Investigations and Assessment of Aquifer Response to Longwall Mining, Illinois;
- Optimizing Wetlands Creation on Coal Mined Lands;
- Relation of Compaction/Soil Physical Parameters to Productivity of Reclaimed Soils;
- Develop Surface Mining Database Management System for Application to Western United States; and
- Constructed Vertical Flow Aerated Wetlands.

Two research projects were completed during 1991.

TECHNOLOGY TRANSFER

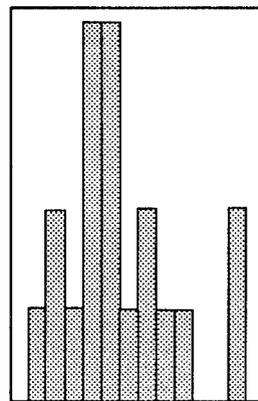
OSM published five issues of its reclamation technology newsletter *RecTec* during 1991. *RecTec* provided current information on meetings, papers, and publications covering land reclamation, revegetation, and water quality during reclamation of land used for surface mining. In addition, other issues published during 1991 concentrated on articles related to acid mine drainage, wetlands, prime farmlands, subsidence, and groundwater in relation to mining.

OSM participates in the Technology Transfer Program sponsored by the National Technical Information Service (NTIS). To date OSM has transferred 233 technical reports and related abstracts to NTIS for dissemination to the public.

An interactive forum on selenium was held in Denver in April 1991. Its purpose was to allow exchange of ideas and experiences with selenium, rather than relying on formal presentation of technical reports. Two basic products resulted from the forum: (1) a better definition of the technical issues relating to the element, with particular emphasis on surface mine reclamation; and (2) the establishment of a working group to further refine selenium research needs and disseminate information about ongoing research activities. Many of the approaches and results from the forum will have direct application to resolving of selenium issues in other types of reclamation.

The Western Support Center sponsored an interactive forum on bond release in September. The purpose of the forum was to provide an opportunity for State regulatory authorities and OSM representatives to discuss a variety of technical issues related to evaluating mine reclamation for bond release. The exchange of ideas resulted in a better understanding of approaches and methods used, and established ongoing State/OSM workgroups on bond release.

EXPERIMENTAL PRACTICES



Experimental Practices Started 1978-91

Section 711 of SMCRA allows alternative mining and reclamation practices that do not comply with Sections 515 and 516 performance standards as a way of encouraging advances in mining technology or to allow innovative industrial, commercial, residential, or public post-mining land uses. However, the experimental practices must meet all other standards established by SMCRA and must maintain protection of the environment and the public. Approval and monitoring of a permit containing an experimental practice results in a close working relationship between the operator, the State, and OSM.

In 1991 no new experimental practices were initiated and none were completed.

INDIA PROJECT

In 1984, through the United States-India Fund, OSM received the equivalent of \$420,000 from the government of India for mining and reclamation technology transfer. Working directly with the Indian government, OSM planned three research projects and signed contracts to begin the work. The ongoing projects are:

- A conceptual environmental management plan for the Jharia Coal Field, including reclamation of existing unreclaimed lands which have been in operation for approximately 100 years.
- A conceptual environmental management plan for the Singrauli Coal Field. This project will result in the development of contemporaneous reclamation standards for a relatively new coal field.
- An environmental model for water quality resulting in treatment facilities for improved water quality in the Jharia Coal Field. The U.S. Environmental Protection Agency is assisting with this project.

In April 1991, OSM hosted a visit by two Indian scientists in order to train them in computer modeling. This assistance was provided in accordance with the provisions of the Jharia Project contract.

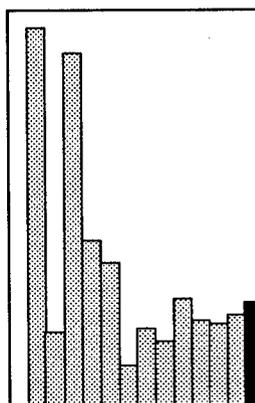
During 1992, OSM will continue assistance to the government of India on these projects.

TECHNICAL TRAINING

In 1991 nationwide training continued for federal, State and private surface coal mining regulatory and reclamation personnel. Seven new courses were added as program offerings in 1991: Administration of Reclamation Projects and NEPA Procedures courses for Abandoned Mine Land personnel, a course in Evidence Preparation and Testimony, a course on Principles of Inspection for regulatory personnel, workshops on acid-forming materials and on bonding, and the Basic Inspection Workbook, which is a self-study course. The program continued to offer ten existing courses including: Applied Hydrology; Blasting and Inspection; Enforcement Procedures; Engineering Principles for Program Personnel; Instructor Training; Soils and Revegetation; Spoil Handling and Disposal Practices in Steep Slope Areas; Surface and Ground Water Hydrology; Technical Writing; and Underground Mining Technology and Effects.

There were 1,045 participants in attendance at 53 training sessions during 1991. Participation by State and tribal personnel totaled 72 percent of program attendance, while federal and private attendance increased from 22 percent in 1990 to 28 percent in 1991.

SMALL-MINE OPERATOR ASSISTANCE PROGRAM (SOAP)



SOAP Funds Expended 1978-91

Section 401(b)(1) of SMCRA authorizes that up to 10 percent of the fees collected for the Abandoned Mine Reclamation Fund may be used for technical assistance to help qualified small mine operators obtain technical data needed for permit applications. Operators who produce fewer than 100,000 tons of coal per year were eligible for assistance in 1991. Effective October 1, 1991, the Abandoned Mine Reclamation Act of 1990 increased from 100,000 to

300,000 the tonnage that defines whether operators qualify for assistance. SOAP helps them meet requirements for the determination of the probable hydrologic consequences of proposed mining operations and the statement of the results of test boring or coal samplings. The "determination" is an analysis of the effect of the proposed operation on the quantity and quality of surface and ground water. The "statement" is an analysis of the overburden and coal, which provides information on their chemical and physical makeup, especially if acid- and toxic-producing materials are present.

The data are collected and analyzed by qualified laboratories and consulting firms. OSM originally approved 379 laboratories throughout the United States. Qualification of laboratories is now the responsibility of the State regulatory authorities.

Regulations for SOAP place responsibility with the States that have approved permanent programs. In States with federal programs, OSM operates SOAP. In 1991, 147 small operators received assistance. This represents a five percent increase in participation from 1990. Table 11 provides a breakdown of SOAP grant awards by State and Indian tribe during 1991.

**TABLE 11
SMALL-MINE OPERATOR ASSISTANCE PROGRAM
1991 GRANT AWARDS**

State	Grant Amount
Maryland	\$25,000
Ohio	280,000
Pennsylvania	1,400,000
Virginia	10,000
West Virginia	180,000
Total	\$1,895,000