

**GAO**

Report to the Chairman, Subcommittee on  
Environment, Energy, and Natural  
Resources, Committee on Government  
Operations  
House of Representatives

December 1986

# SURFACE MINING

## Interior Department and States Could Improve Inspection Programs



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United States  
General Accounting Office  
Washington, D.C. 20548

Resources, Community, and  
Economic Development Division

B-224852

December 29, 1986

The Honorable Mike Synar  
Chairman, Subcommittee on Environment,  
Energy, and Natural Resources  
Committee on Government Operations  
House of Representatives

Dear Mr Chairman:

This report discusses state programs for inspecting coal operations and enforcing coal mine regulations in Montana, Ohio, Pennsylvania, and West Virginia, established to comply with requirements contained in the Surface Mining Control and Reclamation Act of 1977. The report also discusses Department of the Interior's Office of Surface Mining Reclamation and Enforcement's (OSMRE) oversight of these programs and contains several recommendations to the Secretary of the Interior for improving state and OSMRE inspection programs.

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from the date of this letter. At that time we will send copies to the Secretary of the Interior; the Director, Office of Management and Budget; and various congressional committees. Copies will also be made available to other interested parties upon request.

Sincerely yours,

J Dexter Peach  
Assistant Comptroller General

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# Executive Summary

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## Purpose

Surface coal mining, while necessary and productive, can cause such adverse effects as water pollution, soil erosion, flooding, and property damage. The Surface Mining Control and Reclamation Act of 1977 was enacted to protect society and the environment from such damage, while assuring the availability of needed coal.

At the request of the Chairman, Subcommittee on Environment, Energy, and Natural Resources, House Committee on Government Operations, GAO initiated a review of federally-approved mine inspection and enforcement programs. In conducting the review, GAO determined whether four states are citing all violations observed during inspections of mine sites and if the sampling process used by the Department of the Interior's Office of Surface Mining Reclamation and Enforcement (Office) to select mines for review is appropriate for assessing states' performance in citing mining violations

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## Background

The federal surface mining act encourages the states to assume primary responsibility for regulating coal mining on state and private lands consistent with the standards outlined in the act. Twenty-four of the 27 coal-producing states have assumed primary responsibility for developing and enforcing state regulatory programs. These include the four states we visited—Montana, Ohio, Pennsylvania, and West Virginia. The Office regulates coal mining in the other three states

Before mining coal within a state with primary regulatory authority, operators must obtain a permit from the state. Mine operators must submit a reclamation plan and must demonstrate that mining operations will be conducted in compliance with approved state performance standards. After approving a mining permit and reclamation plan, a state is required to inspect the mine for compliance with the standards. For active mining operations, the act requires that state inspections average one partial inspection per month and one complete inspection per calendar quarter.

If state inspectors find a mining activity that is not in compliance with the state's regulatory program, they are required to initiate enforcement actions against the operator—notices to operators requiring correction of observed violations or orders to cease all or a portion of their mining operations. Upon receiving a violation notice, a mine operator is usually required to correct the problem within 90 days. Violations cited against an operator are considered during state penalty assessment determinations and permit suspension or revocation decisions.

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As part of its oversight function, the Office makes independent inspections of mining operations to evaluate a state's performance in conducting its program. Violations that are observed during the Office's oversight inspections are referred to the states for follow-up action.

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## Results in Brief

The four states in our review are not observing or citing all mining violations, including some with potential to harm the environment. Further, states generally do not accept evidence of violations observed by federal inspectors during oversight inspections which could be used to cite operators.

The four states made most required inspections at the sites GAO visited; when states cited violations, problems were corrected in a timely manner, usually within 90 days.

The Office's sampling approach used to select mines for inspection has placed primary emphasis on developing overall comparative data on the violation rate its inspectors observed versus the rate of violations cited by state inspectors. The Office's sampling approach could be more effective if it addressed whether state inspectors are citing all violations and disclosed the causes or seriousness of the violations.

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## Principal Findings

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### Citing Violations

While the four states we visited made most required inspections and assured that cited violations of the performance standards were abated in a timely manner, state inspectors did not cite 78 of 129 total violations GAO and federal inspectors observed during visits to 82 sites. GAO made its site visits soon after complete state inspections to reduce the chances that site conditions would change. In the professional judgment of the Office's inspectors who accompanied GAO, these 78 violations were present at the time of the last complete state inspection. About 56 percent of the 78 uncited violations included problems with sediment controls, mining outside permit boundaries, improper topsoil handling, and other violations. According to the Office's inspectors, such violations had the potential to cause off-site environmental damage. The states' reasons for not citing violations ranged from simply missing the violations to disagreement in some cases that a violation existed.

States we visited generally require their inspectors to confirm evidence of violations obtained during federal oversight inspections. If problems are not occurring when states follow up on them, the states do not issue violation notices even when federal evidence demonstrates that the violation occurred. Since penalty assessment determinations and possible permit suspension or revocation decisions are based, in part, on an operator's history of violations, the failure to record all such violations can materially affect these determinations.

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## Statistical Sampling

When a state assumes primary responsibility for regulating surface mining within its borders, the Office's role becomes one of overseeing state performance. The act requires that sufficient federal inspections be performed to provide a basis for evaluating state performance. Federal oversight inspections generally measure mine operators' performance. Federal inspectors do not, however, determine if the violations they find were also present during the last state inspections and should have been cited by the states. Also, no attempt is made to schedule oversight inspections as close to the latest complete state inspection as possible. Scheduling federal oversight inspections soon after state inspections would minimize changes in mine site conditions and facilitate oversight of state performance. The Office also does not require its inspectors to determine the potential environmental impact of observed violations or their likely causes. Such information would be valuable in determining the seriousness of violations occurring at mines, those that the state may be missing, and their likely causes. This information could provide a better measure of state inspection program performance and lead to program improvements.

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## Recommendations

In order to improve state administration of the act and properly assess state regulatory agency inspection performance, GAO recommends that the Secretary of the Interior direct the Director, Office of Surface Mining Reclamation and Enforcement, to

- determine the reasons why state inspectors are not citing all violations and, based on this information, work with the states to ensure that all violations of performance standards are cited,
- work with the states to develop criteria for state use of federally-observed evidence of violations obtained during oversight inspections in issuing notices of violation which will become part of an operator's violation history; and

- 
- modify the Office's oversight sampling approach to measure state performance by determining whether state inspectors are citing all violations of the act's performance standards and require its inspectors to gather information on the severity and cause of violations.

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## Agency Comments

GAO discussed the information obtained during the review with responsible program officials and has included their comments where appropriate. However, as requested by the Chairman, GAO did not obtain official agency comments on a draft of this report.

# Contents

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|                               |  |    |
|-------------------------------|--|----|
| <b>Executive Summary</b>      |  | 2  |
| <hr/>                         |  |    |
| <b>Chapter 1</b>              |  | 8  |
| <b>Introduction</b>           | State Inspection and Enforcement Programs  | 9  |
|                               | OSMRE Oversight of State Performance   | 10 |
|                               | Objectives, Scope, and Methodology   | 11 |
| <hr/>                         |  |    |
| <b>Chapter 2</b>              |  | 16 |
| <b>State Inspection</b>       | Deficiencies in State Inspections  | 16 |
| <b>Program Performance</b>    | States Do Not Use OSMRE Evidence to Cite Violations                                    | 27 |
| <b>Needs Improvement</b>      | State-Cited Violations Were Generally Abated in a Timely Manner                        | 28 |
|                               | Conclusions  | 31 |
|                               | Recommendations to the Secretary of the Interior                                       | 31 |
| <hr/>                         |  |    |
| <b>Chapter 3</b>              |  | 32 |
| <b>OSMRE Should Modify</b>    | Purpose and Structure of Inspection Samples  | 32 |
| <b>Its Oversight</b>          | Sample Methodology Should Be Modified  | 34 |
| <b>Inspection Approach to</b> | Sample Approach Does Not Generate All Necessary Information                            | 36 |
| <b>Better Measure State</b>   | Conclusions  | 37 |
| <b>Performance</b>            | Recommendations to the Secretary of the Interior                                       | 38 |
| <hr/>                         |  |    |
| <b>Appendixes</b>             | Appendix I State Systems for Tracking Violations                                       | 40 |
|                               | Appendix II: Mine Site Sample Selection for Four Primacy States                        | 42 |
| <hr/>                         |  |    |
| <b>Tables</b>                 | Table 1.1: Estimated Producing Mines and Coal Production                               | 12 |
|                               | Table 2.1. Mine Inspection Frequency for Sample Sites                                  | 17 |
|                               | Table 2 2: Inspection Frequency Requirements Reported by OSMRE                         | 17 |
|                               | Table 2.3. GAO/OSMRE Inspection Results  | 19 |
|                               | Table 2.4: Violations Determined to Have Potential Off-Site Environmental Consequences | 25 |
|                               | Table 2.5 Violations Exceeding 90-Day Abatement Period                                 | 29 |



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**Contents**

---

|                |   |    |
|----------------|---|----|
|                | Table I 1: Elapsed Number of Days Between State and GAO/OSMRE Inspections | 42 |
| <b>Figures</b> | Figure 2.1: Violation Count At 82 Sites                                   | 20 |

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**Abbreviations**

|       |   |
|-------|---|
| GAO   | General Accounting Office                               |
| OSMRE | Office of Surface Mining Reclamation and Enforcement    |
| RCED  | Resources, Community, and Economic Development Division |
| SMCRA | Surface Mining Control and Reclamation Act of 1977      |

# Introduction

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Coal mining, if uncontrolled, can cause soil erosion, water pollution, and permanent loss of productive land. A number of coal-producing states enacted legislation in the late 1930's to control these effects, but these laws provided varying degrees of protection. To more uniformly protect society and the environment from the adverse effects of surface coal mining operations while assuring the availability of needed coal, the Congress in 1977 enacted the Surface Mining Control and Reclamation Act (SMCRA) (30 U.S.C. 1201 et seq.). SMCRA prescribes minimum environmental protection standards and requires land reclamation to control the surface effects of both underground and surface mining operations. It further requires that mine operators post bonds to assure that funds will be available to complete reclamation of the mine sites.

Since coal mining takes place in 27 states under different mining conditions and practices, SMCRA encourages the states to assume primary responsibility for regulating coal mining on state and private lands. The act also created the Office of Surface Mining Reclamation and Enforcement (OSMRE) within the Department of the Interior. Its duties include overseeing state regulatory program development and implementation. From fiscal year 1978 through fiscal year 1985, OSMRE's operating budget expenditures totaled about \$530 million.

Before states can assume exclusive jurisdiction over the regulation of surface coal mining and reclamation operations, SMCRA requires OSMRE approval of plans demonstrating the state's capability to carry out the provisions of the act, including the enforcement of mining and reclamation performance standards. Once OSMRE approved a state's plan, OSMRE's role became one of oversight, ensuring that the state's program is being conducted in accordance with its plan and the act's requirements.

As of August 1986, 24 of the 27 coal-producing states had primary authority to regulate coal mining on all state and private lands within their borders. Each of these so-called primacy states has enacted laws that parallel SMCRA and has promulgated regulatory programs that have been approved by the Secretary of the Interior. OSMRE manages programs in Georgia and Washington, which chose not to adopt their own regulatory programs, and in Tennessee, which relinquished its regulatory authority to OSMRE on October 1, 1984. In addition to these three states, OSMRE also regulates coal mine operators on federal and Indian lands.

## State Inspection and Enforcement Programs

Before mining coal within a primacy state, mine operators must obtain a permit for each mining operation from the state regulatory authority. Some state regulatory authorities, such as Pennsylvania's, also require operators to obtain statewide licenses to mine. In the permit application, the mine operators must demonstrate to the state that mining operations will be conducted in compliance with the approved state regulatory program. Operators must also file performance bonds to guarantee that funds will be available so that all reclamation operations are satisfactorily completed.

Once a state regulatory authority approves an operator's mine permit and reclamation plan, it is required to periodically inspect the operation during active mining and reclamation and also during inactive periods for compliance with the environmental and performance standards established in the permits and their approved state programs. SMCRA and OSMRE regulations require that active mining operation inspections (1) be made on an irregular basis (different times or days) so as to monitor compliance at all operations, including those that operate nights, weekends, or holidays, and average not less than one partial inspection per month and one complete inspection per calendar quarter; (2) occur without prior notice to the mine operator; and (3) include the filing of inspection reports.

Monthly partial inspections are on-site or aerial reviews of an operator's compliance with some permit conditions or performance standards, which might include water monitoring, blasting operations, mining within permit boundaries, or several other requirements. Quarterly complete inspections cover all permit conditions and requirements imposed under the state program within the entire area disturbed or affected by the surface coal mining and reclamation operations.

SMCRA performance standards include various requirements for protecting topsoil from contaminants and compaction, preventing erosion and water pollution, minimizing disturbances to the prevailing hydrologic balance of an area, and several others. To address these standards, operators must, among other things, take actions such as segregating topsoil and clearly marking it so that it can be restored after mining ceases, backfilling and grading to achieve the approximate original contour of the land, disposing of acid-forming or toxin-forming materials in a proper manner so as to avoid contamination, constructing sediment control ponds, and other measures to control effluent that does not meet standards, thus preventing the degradation of surface or ground water.

If state inspectors determine that a mining or reclamation activity is not in compliance with the state's regulatory program, they are required to initiate enforcement action against the mine operator. The most frequently used enforcement actions consist of notices to operators requiring correction of the problems or a requirement that the operators cease all or a portion of their mining operations. When mine operators receive a violation notice, they are usually required to correct the problem within 90 days. States vary in their procedures for establishing initial abatement dates (time allotted to operators for correcting violations). After the abatement period, state inspectors reinspect mine sites to determine if corrective action has been taken (see app. I) For example, in West Virginia, state law limits initial abatement dates to 15 days. If, upon reinspection, state inspectors determine that an operator failed to abate the problem, a cessation order may be issued or an extension of the abatement date granted.

In addition to notices of violation, which require operators to abate violations within a certain time period while allowing mining to continue, and orders to cease mining operations, operators who violate SMCRA or state programs can be subject to civil penalties, permit suspension and/or revocation, denial of new mining permits and licenses, and possible criminal charges, depending on the nature and extent of the violation.

A state may suspend a mining permit for outstanding violations, but the suspension does not release the operator of any responsibility for continued compliance with the provisions of the mining permit. Should the state revoke the permit, the operator is still required to reclaim the disturbed area of mining operations within a specified time

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## OSMRE Oversight of State Performance

After a state assumes primacy, OSMRE makes independent inspections of surface coal mining and reclamation operations as one means of evaluating a state's performance in conducting its program. In order to make the best use of its available resources, OSMRE adopted a strategy of inspecting a statistical sample of sites from which it believes it can make valid inferences about the state's regulatory performance. The number of sample inspections performed in each state is determined by the total number of inspectable units (areas defined by permits) within the state. In a state such as Montana, with 19 inspectable units in 1985, OSMRE has inspected all mine sites at least once annually, whereas in Pennsylvania, which has 3,820 inspectable units, OSMRE conducted 349 sample oversight inspections during the 1985 review period. On the basis of the

results of its oversight samples, OSMRE may conduct special field investigations or studies in areas that appear to have problems or need further study in order for such a determination to be made.

Federal regulations state that OSMRE oversight inspections shall be conducted jointly with the state regulatory authority where practical and where the state so requests. In Pennsylvania, a majority of OSMRE oversight inspections have been conducted jointly with state inspectors. In Montana, essentially all inspections have been conducted jointly with state inspectors. In West Virginia and Ohio most OSMRE oversight inspections have been conducted without state participation. Oversight inspections include a review or analysis of each permit and other actions through total bond release, where applicable. The permit review familiarizes the OSMRE inspector with pertinent aspects of the mining and reclamation plans of the operator.

When OSMRE inspectors observe a violation that may create an imminent danger to the health or safety of the public or is causing, or can reasonably be expected to cause, significant and imminent harm to the environment, they must issue cessation orders, which require operators to cease all or a portion of their mining operations. For other violations, OSMRE inspectors notify the states in writing (10-day notice) or refer the violations to the state regulatory authority, which must either issue violation notices to the operators or show good cause for failing to take such action. Operators would then be required to correct the problem, usually within 90 days. If the state fails to respond appropriately to OSMRE within 10 days, OSMRE must reinspect the site and take appropriate action, such as issuing a federal violation notice or cessation order if the violation continues.

On the basis of the results of its oversight inspections and other information provided by other sources such as citizens, industry, and environmental groups, OSMRE's 13 field offices prepare individual annual reports on primacy states, which OSMRE submits to interested congressional committees.

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## Objectives, Scope, and Methodology

On May 29, 1985, the Chairman, Subcommittee on Environment, Energy, and Natural Resources, House Committee on Government Operations, requested that we initiate a review of state surface mining inspection and enforcement activities. In conducting the review, we determined whether states were

- conducting the required number of inspections as specified in SMCRA,
- citing all violations observed during inspections of mine sites, and
- following up on cited violations in a timely manner

We also agreed to determine if OSMRE's mine inspection sampling process is appropriate for assessing states' performance in citing violations of SMCRA.

To obtain coverage of eastern and western coal-producing states, we selected four primacy states for our review—Montana, Ohio, Pennsylvania, and West Virginia. The mine sites we reviewed in these states were located in various areas within the four states and they include large- and small-surface and underground mines, preparation plants, and other coal-producing facilities. Appendix II contains more information on our samples for the four states.

The four states we visited achieved primacy on the following dates: West Virginia (January 21, 1981), Pennsylvania (July 31, 1982), Ohio (August 16, 1982), and Montana (April 1, 1980). The estimated number of producing mines in these states and their coal production for 1984, according to OSMRE annual reports for 1985, are shown in table 1.1.

**Table 1.1: Estimated Producing Mines and Coal Production**

| State         | Number of producing mines | Coal production in millions of short tons |
|---------------|---------------------------|---|
| Montana       | 9                         | 30.5                                      |
| Ohio          | 294                       | 38.8                                      |
| Pennsylvania  | 1,461                     | 77.7                                      |
| West Virginia | 1,629                     | 131.0                                     |

To understand the requirements placed on OSMRE regarding inspection and enforcement activities carried out in primacy states, we reviewed SMCRA, OSMRE rules and regulations, procedural guidance pertaining to OSMRE's oversight responsibilities, and OSMRE's 1983, 1984, and 1985 annual oversight reports for the four states. We also interviewed OSMRE headquarters and field office officials responsible for carrying out this oversight responsibility.

To obtain "on-the-ground" information on violations occurring at mine sites, we asked OSMRE mine inspectors to conduct inspections at 82 randomly selected sites in the four states. We selected the 82 sites for

review from reports on the latest complete state inspections. We accompanied the OSMRE inspectors and asked them to conduct inspections at these sites as they would their normal oversight inspections. For violations that we and the OSMRE inspectors who accompanied us identified, we asked the inspectors to comment on whether the violations would likely have been present during the last complete state inspections. Our inspections were made as close as possible to the time of the last complete state inspection so that changes in observed conditions would be minimal (See app II )

To determine (1) if the states were conducting the required number of partial and complete inspections, (2) the total number of violations cited by state inspectors at our visited sites, and (3) the timeliness of the states' follow-up of violations, we analyzed information contained in mine site files, including state inspection reports, notices of violation or noncompliance, cessation and/or compliance orders, follow-up inspection data, and action on OSMRE 10-day violation notices. We interviewed state regulatory authority officials and documented their systems for following up observed violations to final abatement. Our results with respect to citing of violations, conducting required inspections, and abatement timeliness are not projectable nationwide because we reviewed only a small number of mine sites in these four states.

We also followed up on violations observed by OSMRE during our visits to determine the timeliness of state reinspections and abatement actions taken by the operators. In some cases we made return visits to the sites with OSMRE inspectors to confirm that abatement was completed.

To determine the appropriateness of the statistical sampling approach used by OSMRE in assessing the states' administration of their surface mining programs, we reviewed (1) the sampling methodology used to arrive at sample selections, (2) guidance provided to OSMRE field offices for conducting oversight sample inspections and preparing annual reports for state programs, (3) data-collection instruments used by OSMRE inspectors when conducting on-site inspections, and (4) individual data analyses and data presentations contained in annual oversight reports

We conducted our work from July 1985 through September 1986. We discussed our findings with OSMRE and state regulatory agency program officials and have included their comments where appropriate. However, as the Chairman requested, we did not request official agency comments on a draft of this report. With this exception, our work was

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performed in accordance with generally accepted government auditing standards.





# State Inspection Program Performance Needs Improvement

We found, for the most part, that the states we reviewed made the required number of inspections at the mines we visited and abated violations identified during those inspections in a timely manner. Our review disclosed, however, that when state inspectors made their inspections, they frequently missed existing violations. According to OSMRE inspectors who accompanied us, many of these missed violations have the potential for causing off-site environmental damage. In addition, as a matter of policy, states do not issue violation notices to operators on the basis of evidence gathered by OSMRE during its oversight inspections. Since penalty assessment determinations and possible permit suspension or revocation decisions are based, in part, on an operator's history of violations, the failure to record all violations, including those observed by OSMRE, can materially affect such determinations.

## Deficiencies in State Inspections

Our review of the inspection programs in Montana, Ohio, Pennsylvania, and West Virginia found problems in state performance. While the states were generally complying with SMCRA requirements governing the frequency and scheduling of inspections, state inspectors missed a substantial number of violations on the inspections they made. Moreover, many of these violations, according to the OSMRE inspectors who accompanied us, had the potential for causing off-site environmental harm. The states were for the most part, however, ensuring timely abatement of the violations they cited.

## Scheduling and Frequency of Inspections Generally in Compliance

SMCRA requires that mine inspections be scheduled irregularly, without prior announcement to the mine operator, and average one partial inspection per month and one complete inspection per calendar quarter. Our review disclosed that the four states were scheduling inspections in irregular patterns as to days of the week and weeks of the month, so that the visits would not be predictable to mine operators. We also found no evidence in mine site files or during interviews with local land owners or environmental groups to suggest that operators were notified of inspections before actual site visits. Concerning inspection frequency, we found that although none of the states had conducted all required partial or complete inspections during the approximate 1-year period prior to our site visits, the number of missed inspections was small.

Table 2.1 summarizes the results of our work on inspection frequency

**Chapter 2**  
**State Inspection Program Performance**  
**Needs Improvement**

**Table 2.1: Mine Inspection Frequency for Sample Sites**

|               | Total sites | Complete and partial inspections <sup>a</sup> |            |            | Sites not meeting frequency requirements |
|---------------|-------------|---|------------|------------|--|
|               |             | Required                                      | Performed  | Difference |  |
| Montana       | 11          | 132   | 151        | +19        | 3  |
| Ohio          | 25          | 257   | 251        | -6         | 5  |
| Pennsylvania  | 19          | 243   | 274        | +31        | 1  |
| West Virginia | 27          | 294   | 274        | -20        | 8  |
| <b>Total</b>  | <b>82</b>   | <b>926</b>                                    | <b>950</b> | <b>+24</b> | <b>17</b>                                |

<sup>a</sup>Figures represent inspections required and performed during approximately a 1-year period prior to our visits to the sites. These visits were made between November 1985 and February 1986.

As the table shows, 17 of the 82 sites we examined did not meet the inspection frequency requirements. However, except in West Virginia, where up to 6 partial inspections were missed at one site, the number of inspections missed at individual sites was small. At some suspected problem sites state inspectors performed more inspections than required under SMCRA or the state programs.

Using the SMCRA requirement of averaging one partial inspection per month and one complete inspection per calendar quarter, in Montana, the three sites not in compliance each missed one partial inspection (one of these sites had never been mined and another was shut down for half of the year). In Ohio, five sites missed a total of 2 of the 192 required partial inspections and 4 of the 65 required complete inspections. In Pennsylvania, only one partial inspection was missed. In West Virginia, 8 inspectable sites missed a total of 16 partial and 4 complete inspections. No permit missed more than one required complete inspection.

As illustrated in table 2.2, prior to our visits to the four states, OSMRE found that the states were missing a substantial number of their required inspections in 1984 and 1985, although their performance in 1985 showed some improvement.

**Table 2.2: Inspection Frequency Requirements Reported by OSMRE**

|               | OSMRE Reporting Period |      |
|---------------|------------------------|------|
|               | 1984                   | 1985 |
|               | Figures in percentage  |      |
| Montana       | 67                     | 68   |
| Ohio          | 47                     | 60   |
| Pennsylvania  | 54                     | 74   |
| West Virginia | 62                     | 79   |

The reason most frequently given to us by state inspectors and other state officials for missed inspections was that they did not have time to make all required inspections, given their work loads and priorities. For the most part they give priority to active mining operations and others where they suspect problems. Thus, many times they exceed the required number of inspections at such sites. Conversely, they miss some inspections at inactive sites and those being reclaimed where the situation does not change appreciably from one inspection to another. While OSMRE regulations provide that approved state programs may eliminate the need for monthly partial inspections and require only four quarterly complete inspections annually at certain inactive mines, it was not until recently that the states in our review sought OSMRE permission to amend their programs to provide for such inspection schedules.

This explanation for missed inspections is similar to that made to OSMRE in responding to its finding that the states were not conducting all required inspections. This may also explain why it appears from our analyses that the states missed a smaller number of inspections than indicated by previous OSMRE reviews, since all of our sites were considered active, according to state and OSMRE records.

Another reason given to us by some state officials for missed inspections was the loss of some inspector positions. However, in its 1985 annual oversight reports for the four states, OSMRE deemed only Ohio's inspection staffing level insufficient to meet inspection frequency requirements. OSMRE believed that West Virginia could meet inspection requirements if it realigned its inspection priorities and personnel, and OSMRE was reviewing Pennsylvania's request to reduce its approved staffing level due to the above change in inspection frequency at inactive sites. OSMRE believed that the size and mix of Montana's staff was adequate to meet the regulatory authority's mission.

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## **State Inspectors Missed Mining Violations**

While conducting most of the required inspections, state inspectors missed many violations, according to OSMRE inspectors who accompanied us on our mine visits. During approximately a 1-year period prior to our site visits, state inspectors had cited a total of 118 violations at the 82 randomly selected mine sites we visited in the four states. During our visits with OSMRE inspectors, which, on average, followed the latest complete state inspections by 7 to 16 days to minimize chances for mine site conditions to change, 129 violations were observed, 78 (60 percent) of which OSMRE inspectors judged to be present but uncited by the state.

inspector at the time of the last complete state inspection. OSMRE inspectors concluded that 44 of the 78 violations had the potential to cause off-site environmental damage, such as water pollution, soil erosion, or property damage.

State inspectors and supervisors identified several causes of the missed violations. Some violations go uncited by the state because state inspectors believe the violations are not especially harmful and hence believe a citation is not appropriate. Others are simply missed. In still other cases, although a violation may be observed by the state inspector, it will not be cited because, according to the inspectors or other state officials, the inspector tries to work with the operator to correct the problem

**GAO/OSMRE Joint Inspection Results**

OSMRE or state inspectors, accompanied by GAO staff, performed complete mine inspections at 82 randomly selected mine sites between November 1985 and February 1986. Table 2.3 shows that, in the professional judgment of OSMRE inspectors, 78 of the 129 violations we observed existed but were not cited at the time of the last complete state inspection. The most frequently observed violations among the 78 we observed with OSMRE inspectors were sediment control problems (28), problems with haul or access roads (7), mining outside permit boundaries (7), and improper signs and markers (6).

**Table 2.3: GAO/OSMRE Inspection Results**

|  | West Virginia | Ohio | Pennsylvania | Montana         | Total |
|--|---------------|------|--------------|-----------------|-------|
| Mine sites inspected   | 27            | 25   | 19           | 11 <sup>a</sup> | 82    |
| Mine sites with at least 1 violation   | 19            | 12   | 17           | 2               | 50    |
| Violations that existed at time of last state inspection but were not reported | 30            | 16   | 31           | 1               | 78    |
| Violations observed for the first time   | 27            | 8    | 15           | 1               | 51    |
| Total violations observed  | 57            | 24   | 46           | 2               | 129   |

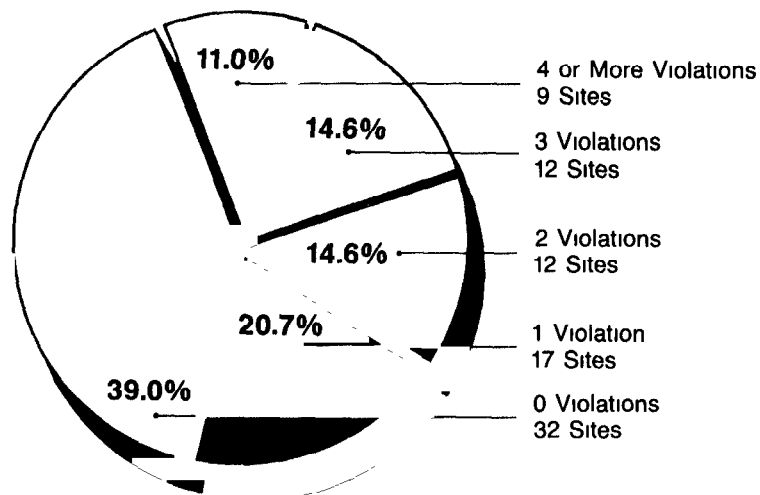
<sup>a</sup>Includes two sites we visited with state inspectors. OSMRE inspectors did not accompany us on these inspections.

We conducted our site visits in the four states within the following average number of days after the last complete state inspection: Montana, 7 days; Ohio, 13 days; Pennsylvania, 12 days; and West Virginia, 16 days. OSMRE inspectors who accompanied us reviewed state inspection reports and other file documentation and used their professional judgment in determining whether violations were present but uncited.

during the most recently completed state inspections. In some cases, such as when state inspectors described problems in their inspection reports without formally citing them as violations, it was not difficult for OSMRE inspectors to conclude the violation had existed when the state last inspected the site. In other instances, the OSMRE decisions were based solely on the inspector's judgment. The states did not always agree with OSMRE's judgments, and in a few cases they also questioned whether situations observed by OSMRE constituted violations. One example of such disagreement concerned the adequacy of vegetative cover during reclamation activities. In the case of such disagreements, OSMRE regulations require that their inspectors reinspect the site and issue a federal violation notice if the violation continues to exist.

The range of violations we observed at the sites we visited with OSMRE inspectors was from 0 to 9 violations per site. As shown in figure 2.1, although 32 (39 percent) of the 82 sites had no violations, 21 (26 percent) had at least 3 violations.

Figure 2.1: Violation Count At 82 Sites<sup>a</sup>



<sup>a</sup>Percentages do not equal 100 due to rounding

The following examples illustrate the types of violations observed in each state and the state action taken in response to our findings

Ohio

Of the 16 uncited violations observed by us and OSMRE that were present but uncited by the state during its last complete inspection, 9 involved inadequate sediment control. For example, a coal company was issued a permit in November 1983 to mine 200 acres in Tuscarawas County. On December 3, 1985—12 days after the last complete state inspection—we accompanied OSMRE on an inspection of this mine. The OSMRE inspector documented two sediment pond problems. The first pond was leaking water through its embankment and through broken pipe joints. The bank of the second pond allowed water to drain out before the pond reached its required capacity. The inspector determined that the second problem was present at the time of the last complete state inspection and that it could potentially cause off-site damage. The state inspector subsequently confirmed that the problem with the second pond existed during his last inspection. He felt, however, that the pond had sufficient capacity to function adequately even though there was a violation of the permit requirements.

OSMRE issued a 10-day notice to the state on December 5, 1985, identifying these two violations. On December 16, the state inspected the site and cited the two problems. After reinspecting the site in December and deciding the problems had been corrected, Ohio terminated the notices of violation. However, when we reinspected the site on February 6, 1986, we found the violations had reoccurred. OSMRE issued a second 10-day notice.

Upon reinspecting the site on February 10, 1986, as a result of the second OSMRE 10-day notice, the state inspector agreed that the violations had reoccurred. One violation was abated during the state reinspection, but the second violation was cited and later abated. However, this violation reoccurred a third time, and was finally abated on April 15, 1986.

Pennsylvania

Of the 31 uncited violations in Pennsylvania, 15 involved sediment control problems or problems with signs and markers. Other less frequently observed violations included improper topsoil handling, excessive effluent in water, and lack of surface water monitoring points. For example, a coal company was issued a permit in October 1983 to mine 33 acres in Fayette County. During the 13-month period from November 1984 through November 1985, the state cited the operator for 3 violations, which included the failure to install diversion ditches, improper backfilling, and inadequate revegetation.

On December 5, 1985—15 days after the state's last complete inspection—we accompanied OSMRE on a complete inspection of this site. We observed 6 violations which, according to the OSMRE inspector, should have been cited by the state inspector. These included (1) a small portion of the operator's haul road not being bonded, (2) the site containing few permit boundary markers, (3) two breached and four missing diversion ditches, (4) a water treatment box required by the permit not being in place, (5) the haul road being surfaced with coke residue rather than the required limestone, and (6) the topsoil piles not being marked as protected. Some of these violations—such as the breached diversion ditches and missing water treatment box—could adversely affect the environment off-site.

In response to our inspection, the state inspector and his supervisor reinspected the site December 11-12, 1985. As a result, the state cited these six violations on December 19, requiring the operator to correct the violations by January 17, 1986. At the completion of our on-site work in April 1986, according to the state supervisor, all violations except the breached and missing diversion ditches had been corrected. The operator was designing new sediment control measures to abate this remaining violation.

#### West Virginia

Of the 30 present but uncited violations we observed in West Virginia, 9 involved sediment control problems and 5 involved inadequate haul roads. For example, a coal company received a permit in May 1984 to mine 82.5 acres in Blacksville. The site includes a coal preparation plant, coal stockpiles and railroad loadout area, access and haul roads, and sediment ponds. During the year preceding our inspection with OSMRE, the operator had received no violation notices.

On November 19, 1985—14 days after the last complete state inspection—we accompanied an OSMRE inspector as he inspected this site. Five violations were observed for which the OSMRE inspector issued 10-day notices. The OSMRE inspector judged two of these violations to be present but uncited during that last state inspection. These two violations involved one pond—it was built off the permitted area and therefore was not covered by the bond—and a field test showed the water discharging from the pond to be too acidic.

Although the pond was off the permitted and bonded area, the company had previously submitted a permit modification to build the pond and to transfer bonded acreage from another portion of the permit to cover the



pond. At the date of our inspection, however, the amendment to modify the permit and transfer the bond had not been approved by the state. The state inspector agreed that this was technically a violation, but he assumed the required permit modification had already been approved, without checking to be sure.

The remaining three violations involved

- failure to conduct required quarterly examinations of embankment ponds,
- failure to remove litter and non-coal waste from the permit area, and
- failure to remove spilled coal from the drainage area and ditch around the railroad loadout facility.

In response to the OSMRE 10-day notice, a state inspector conducted a follow-up inspection on December 9, 1985. Following that inspection, the state issued one notice of violation to the operator for failing to obtain a permit and bond for the area disturbed by constructing the pond. The state inspector indicated the other four violations did not exist at the time of his inspection. The pond was not discharging water; the litter and coal had been cleaned up; and the required quarterly inspection of the embankment was conducted at the time of the reinspection.

To verify that corrective action had been taken, we and the OSMRE inspector who initially accompanied us reinspected this site on March 4, 1986. While corrective action had been taken to abate all violations, a field test conducted by the OSMRE inspector of the water discharging from the pond indicated that the pond water was being over-treated and was now too alkaline. OSMRE issued another 10-day notice. However, the state responded that when it inspected the site on March 11, 1986, there was no discharge from the pond and it could not, therefore, cite a violation. No further OSMRE action had been taken on this matter at the conclusion of our fieldwork in the state.

## Montana

Although we made two of our eleven site visits with state inspectors and only two violations were observed at the Montana mines we visited, we found that state inspectors may have failed to record some violations at small mine operations. This likely resulted from a state practice of trying to work with small operators to correct problems before issuing notices of violations, even though SMCRA requires that each observed violation be cited.

We accompanied a Montana state inspector on his February 1986 inspections of two of Montana's small operators. The inspector did not issue any violations at either mine, even though he observed several problems that he deemed serious enough to warrant mention in the inspection report and in follow-up letters to both mine operators

We requested that the Casper, Wyoming OSMRE field office review the inspection reports for these two mines. The reviews resulted in OSMRE 10-day notices listing 10 separate problems that OSMRE believed should have been cited at the time of the inspections. Included among the 10 problems listed by OSMRE were the failure to (1) design, construct, or maintain appropriate sediment control measures; (2) maintain a diversion ditch; (3) surface haul road with a durable material, (4) stockpile and protect topsoil; (5) protect redistributed topsoil from compaction and contamination; and (6) clearly mark the permit area. OSMRE noted on each 10-day notice that verbal or written warnings to the operators are not acceptable.

To follow up on these 10-day notices, OSMRE inspected these two sites with the state in April 1986. At one site, OSMRE determined that all the issues except one either had already been corrected or what appeared to be violations based on the state inspection reports and other documentation were no longer occurring. The state wrote one violation notice during the April visit for the one existing violation, failure to design, construct, and maintain appropriate sediment control measures. OSMRE continued to believe that the breached diversion ditch and the compaction of redistributed topsoil were violations that existed at the time of the February state inspections and believed violation notices should have been written at that time. They had, however, been corrected by the time of the April site visit with the state. The state subsequently agreed that the compaction of topsoil was a violation, saying that this was the first time the operator had redistributed topsoil, and that he was not aware of the potential problems regarding compaction. The state did not agree that the breached diversion ditch was present during the state's February inspection.

**Many Uncited Violations Could Result in Off-Site Environmental Damage**

During our inspections, we asked OSMRE inspectors to determine whether observed violations could cause environmental harm, such as water pollution, soil erosion, and property damage off the permitted site. As shown in table 2.4, OSMRE inspectors judged 65 of the 129 violations to have the potential for causing off-site environmental damage. Further, of the 78 violations that we believe existed at the time of the last state

inspection, 44 (56 percent) had the potential to cause environmental damage.

**Table 2.4: Violations Determined to Have Potential Off-Site Environmental Consequences**

|               | Violations                      |                                       | Total violations with potential environmental consequences |
|---------------|---------------------------------|---------------------------------------|--|
|               | Existed during state inspection | Did not exist during state inspection |  |
| Montana       | 1                               | 1                                     | 2  |
| Ohio          | 9                               | 6                                     | 15   |
| Pennsylvania  | 22                              | 8                                     | 30   |
| West Virginia | 12                              | 6                                     | 18   |
| <b>Total</b>  | <b>44</b>                       | <b>21</b>                             | <b>65</b>  |

State surface mining officials, however, disagreed in some cases with OSMRE's categorization of the potential effect of the observed violations. Based on our observations with OSMRE inspectors and the explanations provided by these inspectors concerning how the environment could be potentially affected adversely, we agreed with their categorizations.

For example, in Montana, according to an OSMRE inspector, the one sediment control violation could allow sediment to leave the permitted area. The chief of the State Coal and Uranium Bureau, although agreeing that the sediment could get off the permit area, said, however, that it would end up in an already disturbed area and therefore would not cause further damage. In Pennsylvania, state officials commented on 16 of the 30 violations judged by OSMRE to have a potential for causing off-site environmental damage. In 11 of the 16 cases, they disagreed with the OSMRE inspectors. Their reasons for disagreeing included that (1) the operator did not contribute to the problem, (2) harm is speculative since there is no evidence of actual harm, (3) harm is restricted to the permit area, and (4) the violation, in their view, did not exist.

We acknowledge that there is a great deal of judgment involved in categorizing some violations of SMCRA performance standards as to their potential to adversely affect the environment. Making such judgments does, however, provide valuable oversight information regarding the severity or potential to cause environmental harm of violations occurring at mines and those that state inspectors tend to miss. In addition, the extent of potential or actual damage is an important consideration in penalty assessment deliberations.

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**Problems Identified in OSMRE Reports**

OSMRE annual oversight reports for fiscal years 1983 through 1985 also show that the four states were not at one time or another identifying or citing all mining violations during the inspections they made. In some instances, uncited violations were in areas relating to critical environmental performance standards including sediment control, topsoil handling, effluent limits, and revegetation requirements. Some violations also appeared to have existed for some time; they were apparently either not addressed during previous state inspections, or the operators were only warned to correct the violations rather than being officially cited.

**Reasons for Not Citing All Violations**

While challenging OSMRE judgments on certain specific cases, state supervisors and inspectors agreed that most problems observed by us did constitute violations of SMCRA and/or their state programs. They provided a wide range of reasons as to why the state may not have cited all of the violations observed during the joint GAO/OSMRE inspections.

In Pennsylvania the reasons ranged from an admission of inspector oversight or error to the position that the inspector "did not believe the situation was bad enough to cite." For example, a state supervisor told us that even after she inspected two sites with OSMRE and agreed that 14 violations existed, the assigned state inspector still did not believe the violations should be cited. While this report was being prepared, the state was taking disciplinary action against this inspector as a result of the observations we called to its attention. For another mine site cited for incomplete water monitoring reports, the inspector told us that he overlooked the new monitoring points required after the site was re-permitted by the state. This operator was later cited for submitting incomplete reports.

According to Ohio inspectors and supervisors, some violations were missed because they involved situations that they did not check after a permit was issued or inspectors may "look the other way" on some violations that do not involve environmental consequences. They said they have never inspected sediment pond capacity from the standpoint of whether it met Mine Safety and Health Administration requirements. Other violations we observed were just missed by the state inspectors.

In West Virginia, according to inspectors and supervisors, some of the violations we noted were also observed by state inspectors but were not cited because the inspectors were trying to work informally with the operators to correct the problems. In other instances, inspectors said

they just missed the violations or did not cite them because they knew that the operators had submitted permit modification requests to authorize changes in mining operations, which the inspectors assumed had been approved

The chief of Montana's Coal and Uranium Bureau said that its policy is to help small mine operators comply with the act. In the past, this may have resulted in some violation notices not being written because inspectors tried to work informally with the operators to correct the problems. We noted that a 1984 state land department's response to a Montana congressman's inquiry on small mine inspections stated that Montana sees nothing to be gained by issuing violation notices to small operators as long as the infractions are minor and the operator is making every effort to comply with program requirements. The department said that its goal was to ensure public and environmental protection from significant adverse effects from mining, while assisting small operators. Six Montana mines produced less than 100,000 tons, which is the limit established under SMCRA for small-miner assistance. The chief told us, however, that present state policy requires written violations on all problems observed at small mines.

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## States Do Not Use OSMRE Evidence to Cite Violations

SMCRA requires that penalty assessment determinations and possible permit suspension or revocation decisions consider an operator's historical violation pattern. Some OSMRE-observed violations, however, may never become part of an operator's record because OSMRE regulations do not require states to include as part of an operator's record those violations observed by OSMRE inspectors unless they are formally cited. SMCRA requires that when OSMRE inspectors observe situations that they determine are violations of the act or permit conditions, they notify the states which are then allowed 10 days to respond. When operators correct problems observed by OSMRE inspectors before states conduct follow-up inspections, no citations are issued, even though OSMRE has ample evidence to show a violation of SMCRA performance standards existed at the time of its inspection. The failure to include all observed violations—including those substantiated by OSMRE-gathered evidence—can materially alter penalty assessment determinations and permit suspension or revocation decisions.

Of the 129 violations observed during the joint GAO/OSMRE inspections, the states determined that 44 had either been corrected by the operator before the state inspector visited the site, or the violation was not occurring at the time the state inspector reinspected the site. For example, in

Ohio and West Virginia, OSMRE issued 10-day notices for sediment ponds that were discharging water that did not meet effluent limits. OSMRE field tests, which showed the discharges were acidic, were confirmed by laboratory analysis. When the states inspected, however, the ponds were not discharging water. Therefore, no violation was observed or cited. The states did not use the OSMRE sample results as proof that violations had occurred when the federal inspectors were at the sites and consequently issued no notice of violation.

Violations such as water not meeting effluent standards and inadequate sediment controls can result in potential environmental harm, yet there would be no formal violations recorded against the operator if the state inspectors did not cite them or unless OSMRE cited the violations during subsequent reinspections. Ohio now accepts OSMRE evidence in effluent-type cases to cite operators with notices of violation. For other violations, Ohio officials said they might be able to work something out with OSMRE concerning when they would cite violations based on OSMRE evidence, if the state remained the ultimate authority for issuing violation notices on the basis of OSMRE evidence. Officials in other states advised us that they would be reluctant to cite operators for violations without observing the violations firsthand.

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## State-Cited Violations Were Generally Abated in a Timely Manner

SMCRA requires that violations cited against operators are to be abated within not more than 90 days of the notice to the operator, unless the abatement date is extended. State programs can allow for extended abatement periods beyond 90 days under certain conditions, such as when operators are (1) awaiting approval of a permit renewal, (2) experiencing labor strikes, (3) prevented from reclaiming areas due to climatic conditions, and (4) precluded from abatement within 90 days by a judicial order. The four states cited 118 violations at the 82 sites we visited during approximately a 1-year period prior to our visits, and we and the OSMRE inspectors who accompanied us observed 129 violations during our visits. Of these 247 total violations, only 18 were abated in more than 90 days.<sup>1</sup>

Systems for tracking violations (see app I) to ensure their timely abatement in the four states generally placed responsibility on state inspectors and their supervisors to follow up and reinspect sites to ensure that abatement occurred. For the sites we visited, once violations were cited,

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<sup>1</sup>Reporting periods for the four states vary due to differences in the scheduling of our visits in the states.

abatement was generally timely. For the 18 violations that took longer than 90 days to abate—12 previously cited by the state and 6 observed during our site visits with OSMRE—the range in days from the time the violation was first recorded to abatement was 91 days to about 10 months. The breakdown of these 18 violations by state is shown in table 2.5.

**Table 2.5: Violations Exceeding 90-Day Abatement Period**

| State         | Violations Previously Cited by State <sup>a</sup> | State Cited Violations Exceeding 90 Days to Abate | Violations Observed During Our Inspections <sup>b</sup> | Our Observed Violations Exceeding 90 Days to Abate |
|---------------|---|---|---|--|
| Montana       | 10  | 3   | 2   | 0  |
| Ohio          | 14  | 1   | 24  | 2  |
| Pennsylvania  | 67  | 4   | 46  | 1  |
| West Virginia | 27  | 4   | 57  | 3  |
| <b>Total</b>  | <b>118</b>  | <b>12</b>   | <b>129</b>  | <b>6</b>   |

<sup>a</sup>Includes 7 violations for which we could not determine abatement dates.

<sup>b</sup>Includes 19 violations for which actual abatement dates could not be established because they were non remedial (includes periodic water monitoring readings and paperwork violations), or we did not follow up to determine actual abatement, and 44 violations corrected prior to state follow-up inspections.

State-granted extensions of abatement times in most of these 18 cases were justified, in accordance with OSMRE regulations or state-approved exception categories. Among the violations previously cited by the four states and taking more than 90 days to abate were the following:

- The previously cited Ohio violation that took longer than 90 days to abate involved the need to clear sediment from a pond that was thickly ice-covered, thus preventing access. Abatement was accomplished 102 days after the violation was first observed.
- The Pennsylvania violations that took longer than 90 days to abate involved situations such as extensions needed to wait for proper growing seasons and excessive noise and flyrock during blasting operations.
- The three previously cited Montana violations whose abatement times exceeded 90 days were on the same mine. The state considered the mine to be under suspension and ordered a cessation of mining; the situation is being reviewed by the OSMRE solicitor.
- One of the four previously cited violations in West Virginia that took longer than 90 days to abate involved the need to modify diversion ditches on the mine site. This extension did not involve one of the state's

approved exception categories, and we could find no justification for the extension in state files. State officials called this a situation that “slipped through the system”; they could not otherwise explain what happened

Forty-four of the 129 violations we observed with OSMRE were either corrected by the operators or were no longer occurring at the time of the state follow-up inspection. Sixty-six of the remaining 85 cited by the states or OSMRE during reinspections had all abatement steps completed during our fieldwork; abatement was still in progress or the violations were non-remedial on the other 19. Six of the 66 violations took over 90 days to abate; some of these are discussed below

- The one Pennsylvania violation that had an abatement date exceeding 90 days involved an operator who was cited in December 1985 for not seeding topsoil after he spread it over a reclaimed area. An abatement date of April 15, 1986, (116 days from the date of the state follow-up inspection and 140 days from our inspection with OSMRE) was established to reach the next planting season, which would comply with state program procedures
- Two Ohio drainage-control violations that we observed with OSMRE took longer than 90 days to abate. Upon reinspecting these sites after OSMRE issued its 10-day notices, the state disagreed with OSMRE regarding whether they constituted a violation. However, OSMRE reinspected the sites and issued its own violation notices. The operators corrected the problems to OSMRE’s satisfaction, which allowed the notices to be terminated. The OSMRE/state disagreement regarding the existence of the violations may have contributed to exceeding the 90-day abatement period
- In West Virginia, one site had two violations, each of which took 100 days to abate. The state inspector had issued a violation notice to this operator for downslope placement of spoil materials before our visit. We observed the problem both on our initial and follow-up inspections

According to OSMRE annual oversight reports for 1983 through 1985, the four states varied in the timeliness and appropriateness of actions leading toward abatement of violations. For example, although OSMRE found that enforcement actions in Pennsylvania were timely in most cases, significant time lags were noted between field sampling for effluent in water and the return of state-required laboratory sample results—often 4 to 6 weeks. According to OSMRE, the four states also experienced problems at one time or another with extending abatement times beyond 90 days without adequate justification. The reports showed that, for the most part, state performance was improving



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## Conclusions

SMCRA requires that each violation of its performance standards be cited in writing and be considered for possible penalty assessment. However, state inspectors did not cite all violations of SMCRA performance standards while making their inspections; this results in potentially prolonging problems that can adversely affect the environment; it also can distort the violation history of some operators. Of 129 violations that we observed with OSMRE inspectors, 78 were judged by OSMRE to have been present during the last complete state inspection but were still not cited, 44 of the 78 were judged by OSMRE to have the potential to harm the environment. Reasons given by state inspectors and other state officials for not citing these violations ranged from simply missing the violations to disagreement in some cases that there was a violation.

In addition to uncited violations by the states, 44 of the 129 violations observed by us and OSMRE inspectors and referred to the states for corrective action might not become part of the violation history of mine operators because the problem was corrected before the state reinspected the site. Policy in the states we reviewed requiring corroboration of OSMRE-observed violations results in some violations never being considered during penalty assessment and permit revocation or suspension determinations. The state of Ohio now accepts OSMRE evidence to cite effluent violations if accompanied by laboratory test results.

State inspectors missed a small number of required inspections at mines we visited—usually, they said, because they did not have time to make the inspections. Abatement of violations was generally timely for those violations that the states cited.

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## Recommendations to the Secretary of the Interior

To ensure that all violations of SMCRA performance standards are cited, we recommend that the Secretary of the Interior require the Director, OSMRE, to

- determine the reasons why state inspectors are not citing all violations and, based on this information, work with the states to ensure that each violation of SMCRA performance standards is cited
- work with the states to develop criteria for state use of OSMRE evidence of violations observed during oversight inspections in issuing notices of violation which will become part of an operator's violation history

# OSMRE Should Modify Its Oversight Inspection Approach to Better Measure State Performance

SMCRA requires OSMRE to make mine inspections to evaluate the administration of approved state inspection programs in carrying out the law. To this end, OSMRE has developed and implemented a sampling methodology for identifying which mine sites in each state to inspect. Our review showed, however, that OSMRE's sampling methodology, which attempts to evaluate the quality and completeness of state inspections by developing comparative overall statistics on the rates at which state and OSMRE inspectors cite violations, cannot explain the reasons for any differences in rates and the extent of deficiencies in state inspection programs. As a result, states have challenged the validity of OSMRE's data when OSMRE presented it in annual oversight reports. While statistics developed under OSMRE's current sampling approach, if developed properly, can provide some indication of state performance, OSMRE could, by modifying its oversight inspection approach, improve its capability to evaluate state performance and provide more convincing evidence to states when it believes that performance needs to be improved.

## Purpose and Structure of Inspection Samples

Once a state obtains primacy, OSMRE's role under SMCRA becomes one of providing assistance to the state and monitoring its performance to ensure that SMCRA requirements are being met. Under this oversight process, OSMRE's responsibilities include making inspections of surface coal mining and reclamation operations as necessary to evaluate how well the states are administering their programs. OSMRE has annually inspected a sample of mining operations in each primacy state since 1982.

OSMRE selects its random sample of each state's coal mining and reclamation activities from a list of permitted operations (inspectable units) generated from input from the states and OSMRE field offices. Inspectable units, which are equivalent to permits, can cover surface mines, deep mines, haul roads, preparation plants, and other coal operations or portions thereof. OSMRE uses a standard statistical formula for attribute sampling (what proportion of the population possesses a given attribute, such as compliance or noncompliance with SMCRA performance standards) to determine the sample sizes, which vary according to the number of inspectable units in each state. The variables affecting the sample size include the size of the inspectable units list from which the sample is selected, the level of confidence and precision desired in the sample results, and the expected occurrence rate of the attribute to be measured.

In the 1985 annual evaluation period OSMRE inspected each of the 19 permitted operations in Montana, 350 of the 3,251 permitted operations in West Virginia, 349 of the 3,820 permitted operations in Pennsylvania, and 287 of the 1,032 permitted operations in Ohio. OSMRE management specified a desired confidence level of 95 percent with a precision of plus or minus 5 percent. This means that 19 times out of 20 the sample measure of compliance should be within plus or minus 5 percent of the actual measure. OSMRE uses a 50-percent expected occurrence rate. This yields the largest sample size necessary under a given combination of potential sample units and desired levels of confidence and precision.

OSMRE headquarters selects the sample of inspectable units to be visited and releases the entire sample to the field offices at the beginning of the year. A given mining operation can be chosen only once each year. OSMRE does not stratify the sample by type of operation (deep mine versus surface mine) or by operational status (active mining versus reclamation). Therefore, the sample results probably cannot be projected to operations of different types or status with the same level of confidence and precision with which they can be projected to all operations.

OSMRE field office inspectors perform complete inspections on all sample coal mining operations. Inspectors record on a mine site evaluation inspection report whether operators complied with 23 performance and reclamation standards, which were developed from SMCRA specifications. The performance standards include requirements to (1) restore affected land to a condition capable of supporting the uses it was capable of supporting prior to any mining and to its approximate original contour, (2) stabilize and protect surface areas affected by mining and reclamation operations to control erosion and air and water pollution, (3) protect and replace topsoil, (4) properly dispose of waste materials, (5) properly use explosives, (6) insure environmentally sound reclamation, and others.

After conducting its oversight inspections in the states, OSMRE field offices compared the average number of violations of SMCRA performance standards per oversight inspection that it observed to the rate at which violations were cited by the states during complete inspections made that year. Similar violation rates would have indicated to OSMRE that the states were doing an adequate job of citing violations that existed during their inspections. If OSMRE wanted to continue making comparisons of observed or cited violation rates in this manner, it would require OSMRE to change its sampling procedure. However, we believe that OSMRE should change to a direct measure of state performance in citing violations.

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## Sample Methodology Should Be Modified

A primary measure used by OSMRE to assess whether states are citing all violations is the rate of state citation of violations compared with the rate of citable violations observed by OSMRE during its oversight inspections. For example, if an OSMRE field office found an average of one violation per oversight inspection and a state found an average of one violation per every five complete inspections, the field office might conclude that the state was not citing all violations. This comparison is inappropriate as a primary measure of state performance in citing violations because OSMRE cannot identify and demonstrate the reasons for any differences in the rates of citing violations.

At best, OSMRE's past comparisons can indicate that OSMRE and the states observed violations at certain rates. It cannot, however, determine if any differences were due to changing conditions between the time of the state and OSMRE inspections, or if the differences were due to the state's failure to cite violations. Without this information it is difficult for OSMRE to defend its conclusions about state performance because the states can and sometimes do attribute rate differences to changing mine site conditions occurring during the time interval between its and OSMRE's inspections.

Under its current approach OSMRE has not attempted to conduct its oversight inspections as close to the times of complete state inspections as possible. Instead, OSMRE has historically selected its random sample permits at the start of the year and requested its field offices to inspect the permits in the order in which they were selected. This can result in their inspections following complete state inspections by several months. Changing weather conditions can affect the potential for some violations of standards to occur and changing mine operations can affect the performance standards that are applicable during different time periods. Consequently, the states have successfully argued that any differences in the number of violations observed by OSMRE and state inspectors could be attributable to changing mine site conditions resulting during the delays between inspections and not to any deficiencies in the state program.

For example, Ohio regulatory program officials commented on the OSMRE 1985 annual report on the state that gross comparisons of violations per inspection rates are too imprecise and can be affected by too many variables (such as inspection timing) to draw valid conclusions about Ohio's inspection performance. Ohio stated that the only thing that can be concluded from OSMRE's data is that at a given time there was a difference in

rates recorded by the two agencies. Thus, if the states were not convinced that they needed to improve their inspection program performance on the basis of OSMRE oversight sample results, OSMRE is unable to persuade the states that changes are needed by producing reliable evidence to support their contentions.

We believe that OSMRE's oversight purposes would be better served by an approach that attempts to more directly measure state inspection performance. An approach similar to the one we used during this review in which we followed closely behind state inspectors and determined that they missed violations at sampled mine sites would provide OSMRE with more creditable evidence than is currently being obtained. Such direct evidence would enhance OSMRE's oversight performance by enabling it to more convincingly establish the need for state performance improvements when such improvements were indicated. Ohio state regulatory program officials agreed that OSMRE needs to modify its sample methodology. They said that while a more direct measure of their inspection performance might be more damaging, it would provide them with a clearer picture of what actions are needed to correct problems.

If OSMRE modified its sample approach, as we suggest, it would require changes in the scheduling of OSMRE oversight sample inspections. OSMRE may also wish to reevaluate the sample sizes selected for some states, and the method of selecting the samples. By adopting such a changed sampling approach, OSMRE would not substantially lessen the usefulness of its sample results for other analyses, OSMRE could compare its rate of citing violations to state rates of citing violations assuming that it used appropriate sampling procedures. OSMRE could select its sample in a manner similar to the way we selected our samples—from complete state inspection reports as they flowed through control points, either within an OSMRE field office or a state regulatory authority office—and schedule inspections as soon thereafter as possible.

During the June to September 1986 time period, we discussed OSMRE's sampling procedures with headquarters officials in the Program Operations Division. They said that, on the basis of our observations, they will use a revised data collection procedure during the 1987 evaluation year. Their revised procedure includes a requirement that its inspectors assess whether state inspectors cited all existing violations during their most recent complete inspection. However, OSMRE officials said that they have not taken action to schedule oversight inspections as close to the most recent complete state inspections as possible.

## Sample Approach Does Not Generate All Necessary Information

In addition to inappropriately focusing its sample methodology, OSMRE has not required its inspectors to collect data that clearly describe the potential environmental impact of the violations they observe, or their probable causes, during their oversight inspections. If this information were routinely collected during oversight inspections, OSMRE could examine trends to help evaluate or demonstrate the overall effectiveness of a state program and to identify potential problems or deficiencies with the federal or state programs. Also, OSMRE headquarters and field offices have not been required to analyze operator compliance by the 23 individual performance and reclamation standards to identify standards that operators find particularly difficult to comply with or that states or OSMRE need to review for possible revision.

According to OSMRE headquarters officials, they have not required trend analyses on noncompliance rates for individual performance categories partly because the categories are so broad they would not know how to interpret the results. For example, violations in the "sediment control measures" category may include lack of a required sediment control pond, a breached pond, a pond filled with sediment beyond acceptable limits, and/or a breached diversion ditch near the pond. They agreed that if data were more descriptive, however, this type of analysis could be useful in demonstrating program areas needing attention. OSMRE's planned changes for the fiscal year 1987 oversight period will include more in-depth analysis of individual performance categories. Further changes may be made in future oversight periods depending on input from the mining industry and environmental groups, which these OSMRE officials told us they would be seeking.

In our sample, we asked OSMRE inspectors to record whether violations observed had the potential for off-site environmental damage. Although not always consistent in their determinations, OSMRE inspectors were usually able to make such judgments. We used this information to determine whether violations that were present but uncited by the states had the potential to harm the environment. We believe that OSMRE could use information on potential causes of violations to pinpoint (1) needed corrective action in permitting or enforcement, (2) differences between state and federal programs, (3) problems with state and federal standards, and (4) operator negligence. Inconsistencies in inspector assessments that rely on professional judgment could be minimized through guidance and training of inspectors.

OSMRE field office officials we contacted also thought that OSMRE should attempt to record the cause and effect of violations. In June 1985,

OSMRE's Future Program Evaluation Committee drafted and proposed a mine inspection report form to gather this type of information. This form was never used or tested by OSMRE because, according to officials in its Division of Regulation and Inspection, cause and effect were "too subjective" to measure. OSMRE headquarters officials later agreed that this type of information would be desirable for measuring program performance. However, they were still unsure of how to best approach gathering it. These officials told us that they will reevaluate this information, based on input from the coal industry and environmental groups.

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## Conclusions

OSMRE's sample methodology has not obtained an exact measurement of state inspection program performance because OSMRE has not required its inspectors to determine whether the state failed to cite a violation that was present during its last complete inspection. Instead of directly measuring state performance in this way, OSMRE's sample approach has placed primary emphasis on developing comparative data on the rate of citing violations it observed on its oversight sample inspections versus the rate of violations cited by state inspectors during the review year. Because mine site conditions can change dramatically between OSMRE and state inspections, this approach cannot identify the extent to which different rates of observing violations is due to deficiencies in state inspection performance versus how much of any differences in rates is due to changing site conditions. As a result, states can and sometimes do maintain that OSMRE inspectors and their own inspectors are observing mine conditions under different circumstances and these observations cannot be validly compared.

An approach similar to the one used during this review—directly assessing state performance on individual inspections by determining if state inspectors cited existing violations—is feasible and would enable OSMRE to better assess state inspection performance. Further, although this approach would require changes in OSMRE's sampling process, primarily with regard to the timing of its inspections, the changes should not substantially impair the agency's ability to make analyses of other aspects of states' program administration, including operator compliance with the performance standards.

Additional oversight information could be gathered if OSMRE inspectors recorded the actual or potential impact of observed violations on the environment and the probable cause of these violations. OSMRE could use

these data to demonstrate the overall state program effectiveness and to identify problem areas warranting timely corrective action.

New OSMRE initiatives for its oversight inspections—such as having its inspectors determine if states are citing all violations—are changes in the right direction. We are, however, concerned that because OSMRE has not taken steps to schedule their oversight inspections close to the latest complete state inspections, their analyses may be less effective. We cannot comment further because OSMRE has not fully implemented its revised sample approach.

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## **Recommendations to the Secretary of the Interior**

To provide more credible information on state regulatory authorities' performance in administering their mine inspection programs, we recommend that the Secretary of the Interior direct the Director, OSMRE, to

- modify OSMRE's sampling approach to give primary emphasis to measuring state performance in ensuring compliance with SMCRA. OSMRE should include procedures for timing oversight inspections as close to the time of the last complete state inspection as possible, and then require its inspectors to record whether each observed violation was present at the time of the last complete state inspection but was not cited by the state.
- require OSMRE inspectors to record in inspection reports the potential for harm to the environment or public safety and the causes of violations observed at each site to help demonstrate the overall effectiveness of state inspection programs and identify areas in need of corrective action.





# State Systems for Tracking Violations

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The four states' systems for tracking violations after they are cited are described briefly below

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## Pennsylvania

Although Pennsylvania has since 1985 used computerized tracking for certain violations, inspectors and their supervisors remain essentially responsible for this function. The state's inspection report requires inspectors to note whether (1) there were any violations during the last inspection and (2) any violations are outstanding and, if so, to comment on them. Supervisors are to review the inspection reports to ensure that violations are followed up.

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## Montana

In Montana, which only has 19 mine sites to inspect, inspectors track their number of violations (10 in calendar year 1985) with a manual system using columnar spread sheets.

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## Ohio

In Ohio each inspector is responsible for scheduling follow-up inspections of sites to determine if violations have been abated. In three districts where we contacted inspector supervisors to determine how these follow-up inspections are scheduled, we found that the policy varied. In one district the policy was to reinspect the site on or before the scheduled abatement date. The second district reinspected on the day after the abatement date. The third district's policy was to schedule reinspections within 3 days of the abatement date but in no case was it to take place more than 10 days after the scheduled abatement date.

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## West Virginia

In West Virginia, the inspector plays the key role in the violation-tracking process. Besides conducting inspections and citing violations, the field inspector is responsible for tracking the violations; scheduling reinspections in order to modify, vacate, or terminate violations in a timely manner, and identifying possible patterns of violations.

West Virginia state law limits maximum initial abatement times when a violation is cited to 15 days. If the remedial work necessary for abatement cannot be completed within the 15 days, the inspector may extend the abatement time limit for a reasonable time, not to exceed 75 additional days. At the end of the total 90-day abatement period, either a failure-to-abate cessation order must be issued, or a further extension of remedial time limits can be granted if the operator can demonstrate that

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**Appendix I**  
**State Systems for Tracking Violations**

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compliance was unattainable due to conditions totally beyond his control, such as strikes or acts of God. State headquarters must approve each extension beyond 90 days.

# Mine Site Sample Selection for Four Primacy States

## Pennsylvania

We selected four of the five Department of Environmental Resources district offices (Greensburg, Ebensburg, Hawk Run, and Knox) for our review. The fifth state district office was not selected because it covers primarily anthracite rather than bituminous coal mining. The mining of anthracite coal in Pennsylvania is governed by additional regulations that were not the subject of this review

We visited each of these district offices with OSMRE inspectors during the weeks of November 18 and December 4, 1985, to randomly select our mine sites for review. The OSMRE inspectors brought with them state inspection reports received by OSMRE during the respective prior weeks. To these reports we added any report on file at the district office that was awaiting mailing to OSMRE.

We randomly selected 19 (about 25 percent) of the potential sites (five each at Greensburg, Ebensburg, and Hawk Run and four at Knox) for our joint inspections with OSMRE. As shown below, we were able to schedule 16 of the 19 inspections within 15 days after the last complete state inspection.

**Table I.1: Elapsed Number of Days Between State and GAO/OSMRE Inspections**

| Number of days between inspection | Number of sites |
|-----------------------------------|-----------------|
| 0-5 days                          | 2               |
| 6-10 days                         | 3               |
| 11-15 days                        | 11              |
| 16-20 days                        | 1               |
| 21-25 days                        | 2               |
| <b>Total</b>                      | <b>19</b>       |

## Montana

We conducted nine joint inspections of Montana mines with OSMRE within 1 week of the state's December inspections. Weather problems prevented us from following up on 9 of the 18 inspections made by Montana in December. In addition, when the weather permitted, we visited two additional sites that were considered small mines with state inspectors in February 1986. OSMRE inspectors did not accompany us on these two visits.

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**Appendix II  
Mine Site Sample Selection for Four  
Primacy States**

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**West Virginia**

During the period of November 4 to December 12, 1985, we accompanied OSMRE inspectors on 27 inspections throughout the state of West Virginia. Our joint inspections followed the last state inspection by 16 days on the average, ranging from 12 to 22 days.

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**Ohio**

During the period of November 19 to December 17, 1985, we accompanied OSMRE inspectors on 25 inspections throughout the state of Ohio. Our joint inspections followed the last state inspection by 13 days on the average, ranging from 6 to 23 days.



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