

PERFORMANCE AUDIT
OF THE
GEOLOGICAL SURVEY DIVISION
DEPARTMENT OF ENVIRONMENTAL QUALITY

March 1999

EXECUTIVE DIGEST

GEOLOGICAL SURVEY DIVISION

INTRODUCTION

This report, issued in March 1999, contains the results of our performance audit* of the Geological Survey Division, Department of Environmental Quality (DEQ).

AUDIT PURPOSE

This performance audit was conducted as part of the constitutional responsibility of the Office of the Auditor General. Performance audits are conducted on a priority basis related to the potential for improving effectiveness* and efficiency*.

BACKGROUND

DEQ's stated mission* is to drive improvements in environmental quality for the protection of public health and natural resources to benefit current and future generations. This is to be accomplished through effective administration of agency programs, providing for the use of innovative strategies, while helping to foster a strong and sustainable economy.

The Division regulates the extraction of oil, gas, and mineral resources through permit application reviews and conformance bonds* , field reviews, compliance inspections, report monitoring, administrative hearings,

* See glossary on page 31 for definition.

and enforcement actions. As of June 30, 1998, the Division had 64 filled positions. Division expenditures for fiscal year 1996-97 were \$5.5 million.

**AUDIT OBJECTIVES,
CONCLUSIONS, AND
NOTEWORTHY
ACCOMPLISHMENTS**

Audit Objective: To assess the effectiveness of the Division's regulation of extractive industries of oil, gas, and metallic and nonmetallic minerals.

Conclusion: We concluded that the Division's regulatory functions were generally effective for the extractive industries of oil, gas, and metallic and nonmetallic minerals. However, we noted reportable conditions* relating to the oil and gas program, mineral well program and nonmetallic mine reclamation activities, and the information systems (Findings 1 through 4).

Noteworthy Accomplishments: The Division has worked with the Legislature to revise and implement statutes and regulations in various programs:

- a. The oil and gas regulatory fund has been established as the principal funding mechanism for administering the State's oil and gas regulatory program. Provisions in the new law (Act 252, P.A. 1998) allow the fund to accumulate up to a maximum of \$7 million, which is intended to protect DEQ against unexpected fluctuations in the price and production of oil and gas resources that have a direct impact on the revenue utilized to support the program. The legislation also created additional revenues for the fund through an increase in the oil and gas drilling permit fee from \$100 to \$300 and a new annual \$20-per-well fee for wells utilized in the gas storage operations.

* See glossary on page 31 for definition.

- b. Act 149, P.A. 1997, requires any person who wishes to engage in surface or open pit mining for metallic minerals to obtain a mining permit from DEQ. The legislation requires the applicant to submit detailed information to DEQ, including a mining and reclamation plan. The legislation established a metallic mineral surveillance fee assessed on the metallic product produced, which will provide a user-pay system to administer the regulatory program. Prior to this effort, there was no source of funding to support enforcement, and the lack of permit requirements made regulation difficult.

- c. The Division completed a nine-year effort to revise the administrative rules for oil and gas regulation. The rules had not been significantly changed since 1954, except for hydrogen sulfide management provisions that were added in 1987. The new rules were designed to improve the protection of human health, natural resources, and the environment associated with the drilling, production, and abandonment of oil, gas, brine disposal, and gas storage wells in Michigan.

In fiscal year 1997-98, the Division initiated the conversion of the Division's data base from a mainframe computer data system to a local client server system. The system is a modification of the personal computer Risk Based Data Management System (RBDMS), which is currently being used in a number of other oil and gas producing states. The Division believes that the implementation of RBDMS will provide greatly increased efficiency in: issuing and monitoring permits to drill and operate oil and gas wells, gathering subsurface data and information, recording and tracking Statewide hydrocarbon production, tracking industry compliance with regulations, and providing for the

direct entry and retrieval of data on Division field activities. RBDMS is designed to allow for secure electronic exchange of data as well as the potential for dynamic Internet data. Management informed us that it will also be year 2000 compliant.

Audit Objective: To assess the Division's effectiveness in protecting public safety relating to oil, gas, and mineral resource contamination, reclamation of abandoned coal mines, and orphan well* plugging.

Conclusion: We concluded that the Division's public safety functions relating to oil, gas, and mineral resource contamination, reclamation of abandoned coal mines, and orphan well plugging were generally effective. However, we noted a reportable condition relating to the Orphan Well Program (Finding 5).

Noteworthy Accomplishments: The Division worked with the oil and gas industry for the passage of Act 308, P.A. 1994, which established an Orphan Well Fund within the Michigan Department of Treasury. The Act authorizes the DEQ director, as the supervisor of wells, to expend money from the fund to plug abandoned or improperly closed oil, gas, or brine disposal wells; to conduct remedial response activities; and to perform site restoration. Before initiating corrective actions, the supervisor of wells must determine that the owner is unknown or insolvent or that there exists an imminent threat to public health and safety. Revenue for the Orphan Well Program comes from a severance tax on the oil and gas industry. Two percent of the severance tax revenue, but not less than \$1 million, is credited to the fund annually.

* See glossary on page 31 for definition.

The Division compiles a list of orphan wells for the Legislature on January 1 of each year. The list is prioritized for plugging according to the severity of leakage or potential problems. Over the 2 ½ years that funds have been available under the Act, the Division has plugged 33 abandoned wells and conducted associated site cleanups.

**AUDIT SCOPE AND
METHODOLOGY**

Our audit scope was to examine the program and other records of the Geological Survey Division. Our audit was conducted in accordance with *Government Auditing Standards* issued by the Comptroller General of the United States and, accordingly, included such tests of the records and such other auditing procedures as we considered necessary in the circumstances.

Our audit procedures included examinations of the Division's records and activities for the period October 1, 1995 through June 30, 1998.

We studied legislation, administrative rules, management plans, Division policies and procedures, and other Division reports and manuals. We interviewed program staff at both the central and district offices.

We examined a sample of records relating to permit applications and conformance bonds to determine if the permits and bonds were processed in a timely manner and in accordance with statutory requirements and Division procedures.

We evaluated inspections, complaint investigations, and violation remediations for compliance with specified requirements, established procedures, and timeliness of completion.

**AGENCY RESPONSES
AND PRIOR AUDIT
FOLLOW-UP**

Our audit report contains 5 findings and 5 corresponding recommendations. DEQ's preliminary response indicated that it agrees with 4 recommendations and partially agrees with 1 recommendation.

DEQ had complied with 6 of the 7 prior audit recommendations, and the remaining recommendation was rewritten for inclusion in this report.

Mr. Russell J. Harding, Director
Department of Environmental Quality
Hollister Building
Lansing, Michigan

Dear Mr. Harding:

This is our report on the performance audit of the Geological Survey Division, Department of Environmental Quality.

This report contains our executive digest; description of agency; audit objectives, scope, and methodology and agency responses and prior audit follow-up; comments, findings, recommendations, and agency preliminary responses; and a glossary of acronyms and terms.

Our comments, findings, and recommendations are organized by audit objective. The agency preliminary responses were taken from the agency's responses subsequent to our audit fieldwork. The *Michigan Compiled Laws* and administrative procedures require that the audited agency develop a formal response within 60 days after release of the audit report.

We appreciate the courtesy and cooperation extended to us during this audit.

AUDITOR GENERAL

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Description of Agency

Executive Order 1995-18 transferred the Geological Survey Division from the Department of Natural Resources to the Department of Environmental Quality (DEQ), effective October 1, 1995.

DEQ's stated mission is to drive improvements in environmental quality for the protection of public health and natural resources to benefit current and future generations. This is to be accomplished through effective administration of agency programs, providing for the use of innovative strategies, while helping to foster a strong and sustainable economy.

The Geological Survey Division regulates the extraction of oil, gas, and metallic and nonmetallic minerals through permit application reviews and conformance bonds, field reviews, compliance inspections, report monitoring, administrative hearings, and enforcement actions. The activities regulated include oil and gas well drilling and production, mineral well drilling and production, sand dune mining, metallic mining, oil, gas, and mineral resource contamination, reclamation of abandoned coal mines, and orphan well plugging.

The Division contributes data to the Statewide Groundwater Database, which furnishes hydrogeologic data in an electronic form for computer support to State and local governments. The Division has implemented the Field Activity Tracking System, a computerized system of entering and electronically distributing field activity notes.

As of June 30, 1998, the Division had 64 filled positions. Division expenditures for fiscal year 1996-97 were \$5.5 million.

Audit Objectives, Scope, and Methodology and Agency Responses and Prior Audit Follow-Up

Audit Objectives

Our performance audit of the Geological Survey Division, Department of Environmental Quality (DEQ), had the following objectives:

1. To assess the effectiveness of the Division's regulation of extractive industries of oil, gas, and metallic and nonmetallic minerals.
2. To assess the Division's effectiveness in protecting public safety relating to oil, gas, and mineral resource contamination, reclamation of abandoned coal mines, and orphan well plugging.

Audit Scope

Our audit scope was to examine the program and other records of the Geological Survey Division. Our audit was conducted in accordance with *Government Auditing Standards* issued by the Comptroller of the United States and, accordingly, included such tests of the records and such other auditing procedures as we considered necessary in the circumstances.

Audit Methodology

Our audit procedures were conducted during the months of April through August 1998 and included examinations of the Division's records and activities for the period October 1, 1995 through June 30, 1998.

We studied legislation, administrative rules, management plans, Division policies and procedures, and other Division reports and manuals. We interviewed program staff at both the central and district offices.

We examined records relating to permit applications and conformance bonds to determine if the permits and bonds were processed in a timely manner and in accordance with statutory requirements and Division procedures.

We evaluated inspections, complaint investigations, and violation remediations for compliance with specified requirements, established procedures, and timeliness of completion.

Agency Responses and Prior Audit Follow-Up

Our audit report contains 5 findings and 5 corresponding recommendations. DEQ's preliminary response indicated that it agrees with 4 recommendations and partially agrees with 1 recommendation.

The agency preliminary response which follows each recommendation in our report was taken from the agency's written comments and oral discussion subsequent to our audit fieldwork. Section 18.1462 of the *Michigan Compiled Laws* and Department of Management and Budget Administrative Guide procedure 1280.02 require DEQ to develop a formal response to our audit findings and recommendations within 60 days after release of the audit report.

DEQ had complied with 6 of the 7 prior audit recommendations, and the remaining recommendation was rewritten for inclusion in this report.

COMMENTS, FINDINGS, RECOMMENDATIONS, AND AGENCY PRELIMINARY RESPONSES

EFFECTIVENESS IN REGULATING EXTRACTIVE INDUSTRIES

COMMENT

Audit Objective: To assess the effectiveness of the Geological Survey Division's regulation of extractive industries of oil, gas, and metallic and nonmetallic minerals.

Conclusion: We concluded that the Division's regulatory functions were generally effective for extractive industries of oil, gas, and metallic and nonmetallic minerals. However, we noted reportable conditions relating to the oil and gas program, mineral well program, nonmetallic mine reclamation activities, and the information systems.

Noteworthy Accomplishments: The Division has worked with the Legislature to revise and implement statutes and regulations in various programs:

- a. The oil and gas regulatory fund has been established as the principal funding mechanism for administering the State's oil and gas regulatory program. Provisions in the new law (Act 252, P.A. 1998) allow the fund to accumulate up to a maximum of \$7 million, which is intended to protect the Department of Environmental Quality (DEQ) against unexpected fluctuations in the price and production of oil and gas resources that have a direct impact on the revenue utilized to support the program. The legislation also created additional revenues for the fund through an increase in the oil and gas drilling permit fee from \$100 to \$300 and a new annual \$20-per-well fee for wells utilized in the gas storage operations.
- b. Act 149, P.A. 1997, requires any person who wishes to engage in surface or open pit mining for metallic minerals to obtain a mining permit from DEQ. The legislation requires the applicant to submit detailed information to DEQ, including a mining and reclamation plan. The legislation established a metallic mineral surveillance fee assessed on the metallic product produced, which will provide a user-pay

system to administer the regulatory program. Prior to this effort, there was no source of funding to support enforcement, and the lack of permit requirements made regulation difficult.

- c. The Division completed a nine-year effort to revise the administrative rules for oil and gas regulation. The rules had not been significantly changed since 1954, except for hydrogen sulfide management provisions that were added in 1987. The new rules were designed to improve the protection of human health, natural resources, and the environment associated with the drilling, production, and abandonment of oil, gas, brine disposal, and gas storage wells in Michigan.

In fiscal year 1997-98, the Division initiated the conversion of the Division's data base from a mainframe computer data system to a local client server system. The system is a modification of the personal computer Risk Based Data Management System (RBDMS), which is currently being used in a number of other oil and gas producing states. The Division believes that the implementation of RBDMS will provide greatly increased efficiency in: issuing and monitoring permits to drill and operate oil and gas wells, gathering subsurface data and information, recording and tracking Statewide hydrocarbon production, tracking industry compliance with regulations, and providing for the direct entry and retrieval of data on Division field activities. RBDMS is designed to allow for secure electronic exchange of data as well as the potential for dynamic Internet data. Management informed us that it will also be year 2000 compliant.

FINDING

1. Oil and Gas Program

The Division needs to improve the effectiveness of the oil and gas program.

In our review of the oil and gas program, we noted:

- a. The Division's permit tracking system did not demonstrate that oil and gas drilling applications were processed in accordance with *Michigan Administrative Code R 324.201(4)* (which implements Section 324.61525 of the *Michigan Compiled Laws*). The Code allows the Division 60 days to review oil and gas drilling applications to determine if they are accurate and complete. If complete, the Division has 10 days to issue or deny the permit. If incomplete, the Division requests additional information and has 30 days after

the additional information is received to determine if it is complete. If the requested information is not supplied, the permit is automatically denied. After the review process is completed, the Division must issue or deny the permit within 10 days.

We reviewed 34 of 1,477 oil and gas drilling permits. We noted that 10 (29%) of the 34 were not processed within the required time period. The Division did not have documentation to explain the delay in processing 9 of the 10 applications. The Division did not document the date that additional information was requested. Policies and procedures require this information to be entered on the permit tracking system.

Failure to issue drilling permits within the statutory approval period resulted in the Division being out of compliance with State law and could make the State liable for damages. If the delay is because of the submission of an incomplete application or other reasons, it is essential that the Division document the details relating to the delay for future reference.

- b. The Division did not ensure that all well drilling and completion logs were filed on a timely basis. *Michigan Administrative Code R 324.418* requires oil and gas well operators to submit well drilling logs within 60 days of drilling completion and well completion logs within 60 days of well completion.

We reviewed 34 oil and gas drilling permits and noted that, for the operators that submitted the required well data, 47% of the oil and gas drilling logs and 38% of the oil and gas completion logs were late.

The Division had difficulty monitoring whether well data had been filed on time because the status of the well could only be determined through on-site visits. The Division logged the information required to be submitted for these wells on its records due list but did not always notify the operators that well data was past due or otherwise attempt to obtain the well data.

Timely submission of well data is essential for the regulation and oversight of the well drilling process by the Division. Well data contains information about well location, drilling start and completion dates, type and depth of the well,

rock formations, and the status of the well. This information is made available to and used by the public and other operators.

- c. The Division did not inspect production reports on a timely basis. *Michigan Administrative Code R 324.601* gives the supervisor of wells the authority to set the maximum amount of oil or gas that may be produced in a 24-hour day. The Division is responsible for ensuring that operators comply with the limit established.

We reviewed oil and gas production reports for wells that were overproducing and determined that the Division did not take action against the operator up to 270 days after the period of overproduction. Although it is Division policy to inspect production reports on a monthly basis, the Division was inspecting them quarterly. Therefore, the Division did not enforce, on a timely basis, the suspension-of-operation notifications issued to operators.

Prorated production allows the State to conserve reservoir energy, maximize oil and gas recovery, ensure that the owners are afforded the opportunity to produce their fair share of oil and gas, and prevent waste by setting allowable production rates. Overproduction of prorated wells could result in the premature depletion of the State's reserves.

- d. The Division did not perform inspections of all oil and gas wells at the targeted frequency. The Division is responsible for performing inspections to ensure that well operators' activities comply with statutes, rules, and prudent practices. The Division had not established an inspection schedule but had targeted performing two inspections of each well every 3 years.

Twenty-two of 56 Antrim natural gas production wells* in our review were not inspected during calendar years 1996, 1997, or 1998. Three of 10 oil production wells in our review were not inspected during calendar years 1996, 1997, or 1998. There are approximately 4,600 active oil producing wells.

* See glossary on page 31 for definition.

The lack of inspections limits the effectiveness of the Division's regulatory program because sites may not be reviewed for years. In addition, inspections provide an independent verification of whether operators are administering activities and complying with legal and regulatory requirements. For the protection and safety of the public and environment, it is essential that inspections be performed.

RECOMMENDATION

We recommend that the Division improve the effectiveness of the oil and gas program.

AGENCY PRELIMINARY RESPONSE

DEQ agrees that the Division should improve the effectiveness of the oil and gas program. During the time period of the audit, the program was operating with reduced staffing because of decreased revenues that resulted from a significant decline in oil and gas prices starting in 1995. Division procedures were not updated to reflect this reduction in resources. DEQ has completed several actions and has other actions underway to implement this recommendation:

- (1) In recognition of the reduced staff levels, DEQ worked with stakeholders in September 1995 to define an acceptable level of regulatory oversight and to identify funding sources to sustain that level. As a result of that effort, legislation was passed in December 1998, which will provide a more stable revenue source for the oil and gas program. This has enabled some staff vacancies to be filled, which will result in quicker responses and improved documentation of responses. The new funding mechanism also avoided staff reductions recently when oil and gas prices dropped significantly.
- (2) The former database system was fragmented and cumbersome and did not facilitate documentation of activities. DEQ is in the process of installing a new data management system that will be easier to use and provide better documentation. The new system is projected to be fully operational by year-end of 1999.

- (3) DEQ is reviewing and updating existing policies and procedures to reflect changes in needs. The policies and procedures will be further modified when the new data system is operational.
- (4) DEQ will reaffirm with staff the need to adhere to policies and procedures, particularly in documenting actions.

Following are responses to specific findings:

Finding 1.a. In most cases, permits were delayed because applicants did not supply complete or correct information. Reasons for delays in processing applications were documented in telephone logs, letters, or notations in the processing records but were not always entered into the computer tracking system. The new data management system will make tracking easier. One additional permit coordinator was recently hired to improve service. Staff will be instructed to adhere strictly to documentation procedures.

Finding 1.b. Staff resources have not been sufficient to enforce timely submission of drilling and well completion logs, except for the more egregious cases. It will remain difficult to determine the due date for these logs because that status of wells can only be verified through on-site visits. The new data management system will assist in this area by providing automated notification of records due. The Division will revise procedures to pursue enforcement of record submission in order of priority. Improved funding stability will allow for more staff support as necessary.

Finding 1.c. Production capacity of prorated wells is declining. Fewer than 2% of wells are now capable of overproducing, and many of those can produce only a small margin over the allowable rate. Accordingly, the Division has decreased monitoring frequency to quarterly and has focused monitoring on critical wells. As a result, action on overproduction may not take place routinely until about 120 days after the production period. The Division will revise its procedures to identify criteria for critical wells and require quarterly monitoring for noncritical wells. It will devote sufficient staff time to monitoring overproduction to avoid occurrences of longer times (such as the 270 days found in the audit) to take action against the offending operator.

Finding 1.d. Division staff perform close to the targeted two inspections of oil and gas wells every three years when calculated as an average (e.g., in 1997, Division staff performed over 14,000 inspections on 11,000 wells). Not every well was inspected at that frequency because Division staff perform more than the average number of inspections at critical well activities, problem wells, spills, and sites that are the source of complaints. With improved stability of funding, DEQ is increasing staffing for field inspections. It has filled two new field positions in the past year and plans to add additional field positions as funding allows.

FINDING

2. Mineral Well Program

DEQ had not performed its regulatory responsibilities for the mineral well program.

In our review of mineral well activities, we noted:

- a. The Division did not perform inspections of most mineral wells. Sections 324.62501 - 324.62518 of the *Michigan Compiled Laws* provide for the Division to regulate the environmental effects of various mineral wells, including brine, disposal, and test wells.

The Division has one full-time equated position for its mineral well program but has not monitored all mineral well activities, which include performing inspections of mineral wells. Division staff stated that funding was not sufficient for these responsibilities; therefore, the Division monitored only critical wells.

- b. The Division did not process mineral well drilling applications on a timely basis. Section 324.62509 of the *Michigan Compiled Laws* requires the Division to process mineral well drilling permit applications within 10 days of receipt of a complete application.

We reviewed 20 of the 43 most recent mineral well drilling permit applications. We noted that none of the 20 were processed within the required time period. For these applications, the approval process ranged from 14 to 109 days, with

an average of 38 days. The Division was allowing 60 days to issue the mineral well drilling permits rather than the 10 days established by statute.

Issuing drilling permits within the statutory approval period ensures compliance with State law and reduces the risk that the State could be liable for damages.

- c. The Division did not monitor mineral well drilling logs to determine whether they had been filed on a timely basis. *Michigan Administrative Code R 299.2271* requires mineral well operators to submit well drilling logs within 60 days of drilling completion. Well drilling logs contain information about well location, drilling start dates, type and depth of the well, rock formations, and the status of the well. This information is made available to and used by the public and other operators.

We reviewed 20 mineral well permits and noted that, of the operators that submitted the required well logs, 83% of the drilling logs were late. The Division had difficulty monitoring whether drilling logs had been filed on time because the status of the wells could only be determined through site visits.

Timely submission of well drilling logs is essential for the regulation and oversight of the well drilling process by the Division.

RECOMMENDATION

We recommend that DEQ perform its regulatory responsibilities for the mineral well program.

AGENCY PRELIMINARY RESPONSE

DEQ agrees that it should perform its regulatory responsibilities for the mineral well program. Shortcomings in the performance of these responsibilities have been due to lack of funding. Due largely to efforts of DEQ staff, Act 467, P.A. 1998, was enacted in December 1998. This statute will provide adequate funding to fully implement the mineral well program.

Additionally, the Division will review the Part 625 administrative rules and will recommend changes. These changes will include a proposed schedule for the

review of mineral well permit applications to determine completeness and accuracy, after which a permit will be issued (or denied) within the 10 days required by statute.

FINDING

3. Nonmetallic Mine Reclamation Activities

DEQ had not performed its regulatory responsibilities for the reclamation of nonmetallic mining activities.

The Division did not meet the intent of Section 324.63101 - 324.63108 of the *Michigan Compiled Laws*. Those sections provide for the Division to conduct a comprehensive study and survey to determine the extent and type of regulation of mining areas necessary in the public interest. Operators are to file a plan map showing all existing mining areas or areas subjected to mining. Operators also are to file annual updates for changes during the preceding year and mining areas that the operator anticipates will be subjected during the current year. The Division is to ascertain the long-range land environment plans of the operator. The statute pertains to the reclamation of coal, gypsum, stone, metallic ore, and other types of mines.

DEQ had unsuccessfully requested funding for the Nonmetallic Mine Reclamation Program. As a result, the Division was not meeting its regulatory responsibilities for the reclamation of these mining areas. Also, the Division was not providing oversight to nonmetallic reclamation activities, which include monitoring site clean-up and removing contaminated materials.

RECOMMENDATION

We recommend that DEQ perform its regulatory responsibilities for the reclamation of nonmetallic mining activities.

AGENCY PRELIMINARY RESPONSE

DEQ agrees that it should perform its regulatory responsibilities for nonmetallic mining reclamation. Funding for this program was discontinued in 1982. Since then, there have been four unsuccessful attempts to enact legislation to establish

user fees to fund the program. DEQ will continue efforts to either provide adequate funding for the program or rescind the statutory requirements.

FINDING

4. Information Systems

The Division needs to improve its information system documentation.

In our review of the information systems, we noted:

- a. The Division did not have a centralized system to track those public complaints not associated with a permit number. Section 217, Act 113, P.A. 1997, requires that DEQ maintain a centralized information-tracking system for oil and gas complaints and violations. The information-tracking system should enable the Division to effectively document and track complaints to help ensure their appropriate resolution.

At the time of our audit, the Division recorded complaints with the associated permit number. If a complaint was not associated with a permit number or the permit number was unknown, the Division did not enter a complaint.

Our review of 30 of 239 complaint files for the two-year period ended June 30, 1998 disclosed:

- (1) The complainant's name and contact information were not recorded for 16 (53%) of 30 complaints.
- (2) A complete description of the complaint was not included in 8 (27%) of 30 complaint files.
- (3) Information identifying whether follow-up was required was not included in 27 (90%) of 30 complaint files.
- (4) The resolution of the complaint was not indicated in 26 (87%) of 30 complaint files.

The complaints were also frequently coded in such a way that they could not be identified as complaints. We found instances in which complaints were recorded as production inspections. Complaints were not documented and tracked effectively. An effective complaint-tracking system can help in protecting the public's health and safety.

- b. The Division did not have an effective process to ensure that program data was accurate and complete.

We reviewed Computer Support Unit files and determined:

- (1) Individual referral or acceptance dates were not entered into the information system for 120 (60%) of 200 compliance unit cases.
- (2) The Division did not require field staff to report compliance information, such as submission of key reports and documentation by operators, to the compliance unit. This information requires verification by the compliance unit.

Complete and accurate compliance information enhances the program managers' ability to evaluate and measure the effectiveness and efficiency of the program operations.

- c. The Division's compliance tracking system did not provide the necessary information to allow the Division to ensure that consent agreements were completed by the due date, requirements were met, and all information was received and entered on a timely basis. Division Procedure 4.0 establishes requirements for consent agreements issued by the compliance unit. The procedure is designed to ensure that operators meet full compliance with statutes, rules, orders, instructions, and permits administered by DEQ. Operators have 10 days to review, sign (notarized), and return consent agreements to the compliance unit. The unit updates the compliance tracking system to reflect the deadline dates as stipulated in the agreement.

We reviewed 17 of 67 consent agreements issued in the last three years and found:

- (1) The Division did not enter deadline dates in the compliance tracking system for any of the 17.
 - (2) Fifteen consent agreements in which the permittee did not meet established compliance requirements in the agreement. Examples of noncompliance were the removal of items and site restoration, submitting reports or other documentation as to resume production or plug wells.
 - (3) Four consent agreements were not returned to the Division with the proper notarized signature within 10 days. These consent agreements were overdue for periods ranging from 1 month to 5 months.
 - (4) Eight operators did not submit required information to field offices, or field offices did not enter the information into the compliance tracking system.
- d. The Division did not effectively use the automated system to track notice of violations to ensure the required time lines were met and corrective actions were timely. Division Procedure 4.0 establishes requirements for addressing notices of violation. The procedure is designed to ensure that appropriate actions are taken to address and resolve the notices in an effective and timely manner. Compliance unit staff are required to schedule an "opportunity to show cause meeting" within 60 days of the referral from the field.

We reviewed 10 of 57 notices of violation and found:

- (1) The average time that cases were outstanding after issuance of a notice of violation was 580 days, ranging from 65 days to 1,748 days.
- (2) None of 10 cases reviewed had the "opportunity to show cause meeting" scheduled within 60 days of the referral from the field. The average time was 626 days, ranging from 78 days to 2,102 days.

- (3) The average time for the compliance unit to schedule administrative hearings after the "opportunity to show cause meeting" in 7 of 10 cases was 355 days, ranging from 55 days to 1,552 days. In one instance, no administrative hearing was scheduled after the "opportunity to show cause meeting."

The Division could improve its enhancement efforts by addressing compliance issues effectively and on a timely basis. Companies may have operated without consideration of the law, safety, and welfare of the environment. Also, the lack of documentation and effective communication between field staff and the central office precluded assurances of timely resolution of cases in noncompliance.

RECOMMENDATION

We recommend that the Division improve its information system documentation.

AGENCY PRELIMINARY RESPONSE

DEQ agrees that it should improve its information system documentation. The need for a new database was identified several years ago. In 1997, a contractor was procured to assist with and develop an integrated year 2000 compliant data system. The data system will be fully operational in late 1999. The Division will use the new data management system, in conjunction with additional staff resources available under the improved fee system, to more effectively enter and track information.

Following are responses to specific findings:

Finding 4.a. The Division does document complaints not related to a specific well or facility but does not have an effective automated tracking system for them. The new data management system will accommodate the tracking of these complaints. The Division will also implement procedures directing staff to completely document complaints, responses, and resolutions. The level of information provided by complainants will vary, so some tracking entries will continue to be unavoidably incomplete.

Finding 4.b. Implementation of the new data management system will make tracking easier and more accurate. The Division does require field staff to

report instances of noncompliance with terms of consent agreements to the compliance unit. However, field staff do not report all instances of compliance because they do not require follow-up. Nevertheless, the Division will implement procedures requiring reporting of all actions under consent agreements to the compliance unit.

Finding 4.c. The previous compliance tracking system was inadequate and not always fully utilized. However, the Division did monitor and track deadlines by other verbal or written communication. The new data management system will address this issue by making tracking easier and more effective. The 10-day deadline for return of consent agreements is unrealistic and the Division will change its procedures accordingly. The Division has recently started to utilize stipulated penalties to encourage adherence to deadlines. With the improved funding system, the Division will allocate staff resources as necessary to better handle the flow of compliance cases.

Finding 4.d. The time delays noted in the finding largely reflect the inherent legal, technical, and procedural constraints of enforcement and not ineffectiveness of the compliance program. However, the Division plans to dedicate more staff resources to compliance efforts to shorten response times. The Division will also investigate means to streamline the compliance process while maintaining due process.

The times required for case resolution [Finding 4.d.(1)] reflect not a deficiency of the compliance program but rather the time needed to rectify a problem. In most of the cases, a consent agreement was signed, but remediation of the problem (particularly groundwater cleanup) required up to several years to complete.

Staff did not meet the 60-day turnaround on referrals from the field [Finding 4.d.(2)] largely because of resource limitations and high staff turnover in the compliance unit. Staff prioritize actions according to severity of the violation. In some cases, the permittee was making progress in complying, and staff, therefore, delayed further action.

Administrative hearings [Finding 4.d.(3)] are resource-intensive actions of last resort. The scheduling of a hearing may be delayed if the permittee is making progress in complying. Cases are scheduled for hearing according to the degree of threat to the environment and public health, and some lower-priority cases do not get immediate attention. However, actions short of a hearing (holding of permits and suspension of operations) are pursued expeditiously.

EFFECTIVENESS IN PROTECTING PUBLIC SAFETY

COMMENT

Audit Objective: To assess the Division's effectiveness in protecting public safety relating to oil, gas, and mineral resource contamination, reclamation of abandoned coal mines, and orphan well plugging.

Conclusion: We concluded that the Division's public safety functions relating to oil, gas, and mineral resource contamination, reclamation of abandoned coal mines, and orphan well plugging were generally effective. However, we noted a reportable condition relating to the Orphan Well Program.

Noteworthy Accomplishments: The Division worked with the oil and gas industry for the passage of Act 308, P.A. 1994, which established an Orphan Well Fund within the Michigan Department of Treasury. The Act authorizes the DEQ director, as the supervisor of wells, to expend money from the fund to plug abandoned or improperly closed oil, gas, or brine disposal wells; to conduct remedial response activities; and to perform site restoration. Before initiating corrective actions, the supervisor of wells must determine that the owner is unknown or insolvent or that there exists an imminent threat to public health and safety. Revenue for the Orphan Well Program comes from a severance tax on the oil and gas industry. Two percent of the severance tax revenue, but not less than \$1 million, is credited to the fund annually.

The Division compiles a list of orphan wells for the Legislature on January 1 of each year. The list is prioritized for plugging according to the severity of leakage or potential problems. Over the 2 ½ years that funds have been available under the Act, the Division has plugged 33 abandoned wells and conducted associated site cleanups.

FINDING

5. Orphan Well Program

The Division did not effectively administer the Orphan Well Program.

In our review of the Orphan Well Program, we noted:

- a. The Division had not documented efforts to locate owners who may be liable for potential orphan wells. Locating well owners would allow the Division to pursue other avenues of achieving plugging of wells without expending Orphan Well Program funds. Without documentation, the State did not have assurance that the Division attempted to locate liable owners.
- b. The Division did not plug wells in accordance with the computed Site Assessment Program (SAP) scores. The scores factor in the potential risks to the environment and public health and safety. Section 324.61604 (2) of the *Michigan Compiled Laws* states that, except for sites where there exists an imminent threat to the public health and safety, plugging projects shall be funded in the order of their priority on the orphan well list.

The 1996 and 1997 orphan well reports indicated that 4 of 10 wells and 8 of 11 wells, respectively, had been plugged outside of their computed priority. The case files did not document the reasons why wells were not plugged according to the priority listing. Plugging wells without consideration of the SAP scores allows wells with lower risks to be plugged first, leaving unplugged those wells representing higher risk.

- c. The Division did not effectively monitor contractor activities. The Division did not perform timely and thorough reviews of reported expenditures. The Department of Management and Budget awarded a contractor a two-year contract from April 1, 1996 through April 1, 1998 for \$731,886 to plug 31 orphan wells (\$23,609 for each well). The contract was extended to September 30, 1998 and the total cost was increased to \$5,057,000, including funding of other DEQ clean-up programs, in addition to the approximately \$2,070,000 from the Orphan Well Program. The actual costs per well ranged from \$17,000 to \$168,000, with an average of \$67,000.

In our review of contractor billings, we found items billed and paid without supporting documentation or approvals, including:

- (1) The Division made, and had not identified, two duplicate payments of invoices.
- (2) Billings were received from third parties that were not listed on the price proposal and did not receive prior approval.
- (3) Prices charged on invoices were not consistent with that allowed on the price proposal and exceeded the allowable amount.

Because the Division did not effectively monitor contractors, the State incurred unnecessary costs for the plugging of orphan wells, which reduced the funding for future plugging operations. In addition, the lack of a thorough review process precluded the effective administration of contractual requirements.

- d. The Division did not have a system to document inspections of critical contractor activities. To ensure that the plugging contract was properly administered during the plugging process, it is essential that the Division perform inspections of contractor activities.

The Division informed us that it attempted to inspect contractor activities when critical operations were being performed. Our review indicated that the Division performed on-site daily inspections approximately half of the days during the plugging of orphan wells.

The lack of documentation of inspections reduced the effectiveness of the contract administration process and prevented the Division from verifying that the work it paid for was actually performed.

RECOMMENDATION

We recommend that the Division effectively administer the Orphan Well Program.

AGENCY PRELIMINARY RESPONSE

DEQ agrees in part that it should improve the effectiveness of the Orphan Well Program.

Following are responses to specific findings:

Finding 5.a. The Division carefully reviewed records for every well plugged using funds from the Orphan Well Program to ensure its orphaned status. However, staff did not completely document all of these efforts. The Division is currently in the process of implementing procedures to adequately document efforts to locate potential liable parties.

Finding 5.b. The Division did follow the SAP scores in prioritizing plugging. However, in some cases, it could not stay in sequence because access to property, procurement of necessary permits, or other factors delayed commencement of plugging. Instead of waiting for these issues to be resolved, the Division moved on to the next highest priority well. It agrees that reasons for delays were not always documented. Ultimately, all wells that posed the highest degree of threat to public health and safety were plugged.

Finding 5.c. The Division has implemented procedures for daily review of contractor activities and charges. The two instances of duplicate payments were for relatively small amounts and have been corrected. The Division is now cross-checking all invoices to ensure that contract prices are used. It is attempting to list every possible item in the contract. However, it is impractical to list on the contract every item that will ever be needed at a site. The Division will identify, as part of the advance site inspection, unlisted items that may be needed and ensure that multiple bids will be sought for those items.

Finding 5.d. The Division has initiated procedures to provide improved documentation of inspections of critical plugging activities. These inspections will be performed on less than a daily basis and will occur when critical plugging activities are projected.

Glossary of Acronyms and Terms

Antrim natural gas production well	A well producing natural gas from an organic, rich, black shale, known as the Antrim Shale Formation.
conformance bond	A surety bond that has been executed by a surety company authorized to do business in the State of Michigan, cash, certificates of deposit, letters of credit, or other securities that are filed by a person and accepted by the supervisor of wells to ensure compliance with the act, rules, permit conditions, instructions, or orders of DEQ.
DEQ	Department of Environmental Quality.
effectiveness	Program success in achieving mission and goals.
efficiency	Achieving the most outputs and outcomes practical for the amount of resources applied or minimizing the amount of resources required to attain a certain level of outputs or outcomes.
mission	The agency's main purpose or the reason the agency was established.
orphan well	An abandoned or improperly closed oil or gas well, response activity, or site restoration at oil or gas wells for which no owner or operator is known, for which all owners or operators are insolvent, or at which the supervisor of wells determines there exists an imminent threat to the public health and safety.

performance audit	An economy and efficiency audit or a program audit that is designed to provide an independent assessment of the performance of a governmental entity, program, activity, or function to improve public accountability and to facilitate decision making by parties responsible for overseeing or initiating corrective action.
RBDMS	Risk Based Data Management System.
reportable condition	A matter coming to the auditor's attention that, in his/her judgment, should be communicated because it represents either an opportunity for improvement or a significant deficiency in management's ability to operate a program in an effective and efficient manner.
SAP	Site Assessment Program.