

WEST VIRGINIA

**FOLLOW-UP AND SUPPLEMENTAL
REVIEW**

**State Review of Oil and Natural Gas
Environmental Regulations, Inc.**

January 2003

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West Virginia Follow-Up and Supplemental Review

INTRODUCTION

The 1980 amendments to the Resource Conservation and Recovery Act (RCRA) created an exemption to the federal hazardous waste program for oil and gas exploration and production (E & P) wastes pending completion of a study by the U.S. Environmental Protection Agency. In 1988, EPA completed its study and determined that these wastes should not be regulated as hazardous wastes. In its regulatory determination, EPA indicated that existing state and federal regulations were generally adequate, but that some regulatory gaps existed and enforcement of existing regulation by some states was inadequate. EPA worked with states to encourage improvements in the states' regulations and enforcement of existing programs. This report is a part of that EPA funded effort.

An original assessment was made of the West Virginia exploration and production ("E&P") waste regulatory program pursuant to the 1990 *EPA/IOGCC Study of State Regulation of Oil and Gas Exploration and Production Waste* (the "1990 IOGCC Guidelines"). That assessment, known as the West Virginia State Review (the "1993 Review"), was published in December, 1993, and contained specific findings and recommendations for action based on the 1990 IOGCC Guidelines.

Since the 1993 Review, the IOGCC Guidelines were updated and revised by the Interstate Oil and Gas Compact Commission (the "IOGCC") in 1994. In 1999, administration of the state review program devolved to a non-profit organization named State Review of Oil and Natural Gas Environmental Regulations, Inc. ("STRONGER"). STRONGER again revised, expanded and updated the Guidelines, which were accepted by the IOGCC, and published in June 2000 as the *Guidelines for the Review of State Oil and Natural Gas Environmental Regulatory Programs* (the "2000 Guidelines").

This report consists of two main components. Part I is a follow-up review of the progress made by the Office of Oil and Gas ("OOG") of the West Virginia Department of Environmental Protection (DEP) since the 1993 Review. Part II of this report is a supplemental review of the aspects of West Virginia's program not covered by the IOGCC Guidelines, but which are addressed in the 2000 Guidelines.

In March, 2002, an eleven-person team (the "2002 Review Team") appointed by the STRONGER Board conducted a follow-up review to evaluate progress made in the West Virginia program since the 1993 Review, and evaluate the adequacy of the program compared to the 2000 Guidelines. The eleven-person panel consisted of six members and five observers (collectively the "2002 Review Team". David McMahon of Mountain State Justice; Richard T. Eades; David Janco of the Pennsylvania Department of Environmental Protection; Harold Fitch of the Michigan Department of Environmental Quality, Geological Survey Division; Robert L. Radabaugh of S&R Gas Ventures, Ltd.; and Ann Bradley of the Charleston-based law firm of Spilman, Thomas & Battle, served

as members. Donald S. Garvin of Trout Unlimited and the STRONGER Board; Jeffrey R. Stevens, P.E., of R.H. Adkins & Companies; Peter Lagiovane of the U.S. Department of Energy; Steve Souders of the U.S. Environmental Protection Agency; and Mark Carl representing the IOGCC, participated as observers. Two 2002 Review Team members, David McMahan and Robert Radabaugh served as observers on the 1993 Review and Steve Souders served as an observer in the 1993 Review.

The process began with a questionnaire that was sent to the OOG. The questionnaire had been prepared by the STRONGER Board. STRONGER intended to capture both the status of the West Virginia program relative to both the finding from the 1993 review (Part I) and new guidelines in the 2000 Guidelines (Part II). The OOG's responses to the questionnaire were then sent to the review team. The review team then had its first meeting. The first meeting was conducted in Charleston, West Virginia, at the offices of the OOG on March 17th through 20th, 2002. Mr. James Martin, Chief of the OOG, made a short presentation and then he and his staff responded to questions from the review team based upon the written questionnaire and the OOG's responses. Following the interviews and review of the written materials and backup documentation provided by the state, the review team compiled this follow up review report.

As noted above, Part 1 of this report contains the findings and recommendations of the 1993 Review Report, the West Virginia OOG responses to those recommendations, and the follow-up findings of the Review Team. Part 2 of this report presents the findings of the 2002 Review Team with respect to those aspects of the West Virginia program governed by standards established in the 2000 Guidelines that are new or different from the standards of the 1990 IOGCC Guidelines under which the West Virginia program was initially reviewed.

PROGRAM OVERVIEW

Gas Production

The West Virginia natural gas industry is one of the oldest in the United States. Natural gas production in the state began in 1885. In fact, West Virginia was the nation's largest natural gas producer until the 1920s. This heritage carries over to the present, in that the state ranks second in the United States in the number of active gas wells. Of the 90,000 oil and natural gas wells drilled up through 2001, there are 43,126 still actively producing. The cumulative extraction of deposits in West Virginia has created the "space" to make the state one of the major gas storage areas in the nation with approximately 500 billion cubic feet of capacity. This is coupled with a growth in investment in storage related facilities, and has allowed more uniform year-around production.

In terms of future potential, West Virginia has proven gas reserves of 2,846 billion cubic feet, based on 1998 data. However, if unconventional deposits, such as tight sands and Devonian Shale are included, the reserve estimates are significantly higher. At present, producers in West Virginia are actively tapping the reserve base and the state

ranks fourteenth in the United States in terms of annual natural gas production, producing approximately 167 billion cubic feet. Small and middle-sized firms characterize the drilling segment of the industry, and, overall, 90 to 95 percent of this activity is done by independents. These firms are able to attract nearly 95 percent of their capital from outside of the state.

West Virginia is serviced by four major pipeline companies that buy a significant portion of the state's production. In addition, these pipelines transport gas from other regions through the state to eastern markets. Overall, the state is self-sufficient in gas, but its central location between producing and consuming regions results in in-flows several times higher than annual production and consumption.

Oil Production

The oil industry in West Virginia also has a long and proud heritage, though it is significantly smaller in size than the gas industry. Oil production began in the state in 1860. Since that time, approximately 48,000 oil wells have been drilled, and as of 2000, 18,000 are in production. In 1998, oil reserves were 26 million barrels, and natural gas liquids were 71 million barrels. Oil reserves showed a steady rise, moving up from a plateau of 30 million barrels, in situ, during the late 1970s and early 1980s, to a peak of 76 million barrels in 1984. The state's oil production has been steadily declining since the early 1900s. West Virginia's 1.5 million barrels ranked 24th in the nation for oil production in 1998 reports.

State Program Developments Since Last Review

Significant program changes in the West Virginia program since the 1993 review include the following:

- The Soil Erosion and Sediment Control Manual was revised in 1993 as a Best Management Practice (BMP) document to assist operators in proper site construction and reclamation.
- The Coalbed Methane Act, passed in 1993, gives authority and direction to the OOG regarding the environmental regulation of coalbed methane wells.
- The National Pollution Discharge Elimination System (NPDES) Produced Water General Permit was developed in 1993 as an environmentally sound option for produced water from stripper oil wells.
- In 1994 the DEP rules were reorganized to provide further clarification of authorities and responsibilities of the various regulatory offices and agencies.
- Global Positioning System (GPS) units were provided for all field personnel in 1995 to allow for the collection of accurate well location data. Additionally, all field personnel have cell phones and offices set up in their homes which include a computer, fax, copier, scanner and printer.
- In 1997 a new general permit for the treatment of associated waste was issued.
- A Unix workstation was also installed in the Charleston office to better access the DEP's Geographic Information System (GIS).

- The DEP Office of Legal Services (OLS) was created in 1995 through the passage of House Bill 2523 (Executive Order No. 4-95) giving the OOG greater access to legal support for enforcement actions and development of rules.
- In 1999 the OOG was formally organized into four programs/sections--- permitting, compliance, inspection/enforcement and abandoned wells---as a reflection of office priorities and to provide clarification of duties.
- The independent, privately contracted OOG database has been converted to a state-developed and maintained Oracle system as of 1999, employed throughout the DEP. A few applications are still in the conversion process and should be fully completed by year-end 2002.
- In 1995 a protocol was adopted for petitioning OOG for a determination of the scope of the RCRA exemption at oil and gas facilities in West Virginia.
- The West Virginia Legislature created legislation in the 2001 session to re-instate rules for the implementation of the Natural Gas Policy Act (35CSR7) allowing for Section 29 tax credits.
- The Legislature also approved regulation changes to allow for electronic permitting. DEP's Information Technology Office is aggressively working to complete e-permitting capabilities across the Department by mid January of 2003.
- The former Division of Environmental Protection was restructured in the 2001 legislative session. The change made the Division a cabinet level Department. Some of the larger Offices of the prior Division are now divisions within the new Department. The Office of Oil and Gas remains an Office within the reorganized DEP.
- In 2002 legislation was passed to permit the submission of GPS locational data in lieu of an actual survey, for certain types of permits.

Program Workload

There are 43,000 producing oil or gas wells in West Virginia. Each year 900 to 1,400 new well permits are issued. Total annual permits issued, including work-overs and other activities, ranges from 1,500 to 2,200. There have been as many as 38 drilling rigs operating in the state at one time. The OOG estimates there are approximately 10,000 known wells that are not currently producing and for which a "bona fide future use" has not been established (as that term is currently defined by regulation). These wells require inspections and may need to be plugged.

The 1993 Review found an inadequate number of inspectors. The number then was 15. Currently there are 14 inspectors. While the number of inspectors declined since 1993, OOG's duties have increased. Some examples of increased OOG responsibilities include a new general NPDES permit requirement for disposal of brine water that is produced from some oil wells; a new general permit for the disposal of pit waste water; new requirements arising out of the abandoned well act; OOG lead agency status for spills involving oil and gas; an increased number of permit applications, including coal-bed methane wells; in recent years an increasing number of deep well applications; new provisions added to the Soil Erosion and Sediment Control Manual; and involvement of oil and gas inspectors in Watershed Assessment programs directed toward soil erosion

and sediment control. In addition, the OOG's responsibilities are expected to increase as a result of anticipated new regulatory activity in the areas of storm water, and anti-degradation.

Initiatives that OOG has undertaken to deal with an increased workload and reduced staffing include equipping field personnel with cell phones, GPS units and home offices to enhance productivity; development and use of the Erosion and Sediment Control Manual and Well-plugging Field Manual to standardize field methods and streamline permitting; development of an electronic permitting system; and training of operators in proper field techniques to reduce the number of sites needing inspection enforcement activity.

REVIEW HIGHLIGHTS

As noted above, the STRONGER Review Team and observers met with James Martin, Chief of the OOG, and his staff over the course of three days to discuss all aspects of West Virginia's regulatory program for E & P wastes. The Review Team and observers were permitted wide latitude in their questioning of Chief Martin and his staff and responses provided were thorough and informative. In the course of these discussions the Review Team identified certain positive and innovative components of the West Virginia program that go beyond the provisions of the 2000 Guidelines and warrant consideration by other states. These components are discussed below.

1. Well Plugging Field Manual

The OOG is in the process of developing a field manual to provide guidance on well plugging. The purpose of the manual is to present clear and simple instructions covering the technical aspects of well plugging activities. The goal is to improve plugging performance and decrease problems caused by failure to follow proper procedures. The OOG hopes to expand this program in the future by including mandatory training and certification requirements for plugging contractors.

2. OOG Website

The website established by the OOG is an excellent source of information for the regulated community and for members of the public interested in oil and gas operations in West Virginia. *The Soil Erosion And Sediment Control Manual*, forms for well work permits, general permit registration and well transfer notifications are available in user-friendly format on the website. In addition, the entire inventory of active and abandoned wells can be easily accessed. The OOG is scheduled to have full capability for electronic permitting by January 2003.

3. Training

The OOG has initiated a program to train operators in the proper practices under the West Virginia Soil Erosion and Sediment Control Manual. This program targets operators in a specific watershed and provides a detailed review of the practices described in the Manual. The goal of the program is to assess and minimize the environmental impacts of oil and gas operations in the watershed. To date the OOG has completed or is conducting training in four watersheds. Early results from this program show increased vegetative cover of 10 to 12% for sites within these watersheds.

PART 1

FOLLOW-UP TO RECOMMENDATIONS OF THE 1993 WEST VIRGINIA STATE REVIEW

In preparation for the 2002 STRONGER Follow-up and Supplemental Review, the staff of the OOG prepared an item by item response to each of the recommendations made as a result of the 1993 Review. The evaluation of the 2002 STRONGER Review Team is based on the written responses of the OOG as well as discussions from interviews of OOG staff. In its responses, the OOG stated that several of the findings and recommendations of the 1993 Review were beyond the scope of the 1990 IOGCC Guidelines in effect at that time. The OOG noted that, although it was not necessary for a reviewed state to respond to such findings and recommendations, the OOG had carefully considered each recommendation and reported any actions that had been taken that were responsive to the recommendations. The 1993 Review findings and recommendations are set out below, followed by the 2002 responses of the OOG and the evaluation of those responses by the 2002 STRONGER Review Team. The responses of the OOG to the 1993 Review recommendations are shown in italics.

I. General

1993 REVIEW FINDING I.1.

DEP has not yet institutionalized a multi-year planning process for E&P waste management.

1993 REVIEW RECOMMENDATION I.1.

Though the DEP has been in a state of transition, and while IOGCC Guidelines do not expressly address long-term planning, the review team nonetheless recommends DEP develop a long-term planning process.

2002 WEST VIRGINIA RESPONSE:

In creating the Department of Environmental Protection (DEP), the state legislature found that restoring and protecting the environment is fundamental to the health and welfare of individual citizens and our government has a duty to provide and maintain a healthful environment for our citizens. As part of this goal, the DEP has in place a strategic plan that extends up to 5 years into the future. This plan addresses coordination of all environmental permitting, inspection and enforcement program consistency, alternative approaches for environmental compliance, quality workforce enhancement, staff centralization,

information management and communications capabilities, public involvement and financial capability.

2002 FOLLOW-UP REVIEW FINDING:

The 1993 Review recommendation has been met, although the recommendation was beyond the scope of the original 1990 IOGCC Guidelines. However, it is included in the 2000 STRONGER Guidelines [4.2.3]. The 2000 STRONGER Guidelines recommend that a state's regulatory process should include both short- and long-term strategic planning for defining goals and objectives, setting priorities, and evaluating program effectiveness.

The West Virginia Code (W.Va. Code §22-1-1(1998)) establishes restoration and protection of the environment as the fundamental goal for the DEP. To implement that goal, the DEP has instituted a five-year strategic plan. The plan addresses coordination of permitting, consistency of inspections and enforcement, alternative compliance approaches, staff training and advancement, information management, public input, and funding needs. Staff of the Office of Oil and Gas (OOG) implements the strategic plan by annually evaluating past activities and future needs and priorities, and by incorporating the program goals in individual performance objectives.

See also discussion under Performance Measurement.

1993 REVIEW FINDING I.2.

The Oil & Gas Inspectors' Examiners Board is an undesirable layer of bureaucracy that duplicates functions of other agencies and that obscures lines of authority for inspector selection and discipline, and it has the potential to adversely affect inspector behavior.

1993 REVIEW RECOMMENDATION I.2.

Although beyond the scope of the IOGCC Guidelines, the review team recommends that the Oil & Gas Inspectors' Examining Board be abolished or, failing that, be restructured to greatly reduce representation of the regulated industry in its membership. The team also recommends the Oil & Gas Inspectors' Examining Board, in any event, not have inspector discipline responsibilities.

2002 WEST VIRGINIA RESPONSE:

The Oil and Gas Inspector's Examining Board has been restructured (Chapter 22C, Article 7) (2001). The Board is comprised of the Office of Oil and Gas (OOG) Chief, the Division of Water Resources (DWR) Director, a member of the public[representing surface or environmental

interests], an independent operator representative and a major producer representative. Proceedings for the removal of inspectors are initiated by the director/secretary of the DEP.

2002 FOLLOW-UP REVIEW FINDING:

The recommendation was beyond the scope of the original 1990 IOGCC Guidelines, however, the recommendation has been partially met. The Oil and Gas Inspectors' Examining Board has been restructured, meeting the first element of the recommendation. The Board retains some disciplinary authority, although disciplinary actions of the Board are now subject to appeal under the West Virginia Civil Service System.

1993 REVIEW FINDING I.3.

A number of West Virginia's substantive E&P waste management laws vest duties in offices that have been subsumed within DEP. This circumstance obfuscates the connection between statutory authorization and agency action/regulation.

1993 REVIEW RECOMMENDATION I.3.

The review team recommends that conforming legislation, such as that drafted by DEP, be adopted. [1990] IOGCC Guidelines section 3.1.

WEST VIRGINIA RESPONSE:

In Chapter 15, Acts of the Legislature, 1991, the Legislature granted the Governor the authority to transfer the administration and enforcement of certain state environmental programs to the Division of Environmental Protection (now known as the "Department of Environmental Protection"). Pursuant to that authority the transfer officially occurred with the issuance of Executive Order No. 8-92 on July 1, 1992. Consequently, the DEP assumed the responsibility of administering all statutes and rules relating to the various state environmental programs in West Virginia. In July 1994, the Legislature enacted legislation introduced in House Bill 4065 which re-codified all existing state environmental statutes administered by the DEP under the same chapter of the West Virginia Code (Chapter 22).

2002 FOLLOW-UP REVIEW FINDING:

This recommendation has been met. Subsequent to the 1993 Review, the authorities for state environmental programs were transferred to the DEP in accordance with state law. In July 1994, the Legislature recodified all existing

state environmental statutes administered by the DEP under the same chapter of the West Virginia Code (Chapter 22).

1993 REVIEW FINDING I.6.

If there were E&P waste management memoranda of understanding among DEP offices, and between DEP and other regulatory subdivisions, the boundaries of each regulator's responsibilities could be more easily ascertained by all affected parties, and activities that are not actually being regulated would likely be identified.

1993 REVIEW RECOMMENDATION I.6.

The review team recommends that the DEP adopt a statement that delineates the E&P waste management roles of each of its offices, and also negotiate similar memoranda with other relevant state regulatory authorities. [1990] IOGCC Guidelines sections 3.1.e. and 4.4.

2002 WEST VIRGINIA RESPONSE:

The OOG has the lead role in all [oil and gas] E&P waste management issues. Where there are specific delegated programs in which other offices within DEP have lead regulatory status, such as Underground Injection Control (UIC) or National Pollution Discharge Elimination System (NPDES), the appropriate Memorandums of Understanding (MOUs) and Memorandums of Agreement (MOAs) have been put in place and are updated annually. Copies of the MOUs and MOAs are included in the documents package.

2002 FOLLOW-UP REVIEW FINDING:

This recommendation has been partially met. Copies of memoranda of understanding with the Office (now Division) of Water Resources covering the administration of the NPDES permit program for coal bed methane production wells and the NPDES permit program for stripper oil wells were produced and reviewed. A document entitled "Shared Accounts Agreement for Underground Injection Control Program," signed by representatives of the Office of Water Resources and the Office of Oil and Gas was provided and reviewed. An MOU between these two offices covering the underground injection control program was initially developed in 1982. However, the MOU cannot be found.

Although the absence of the original written agreement was not identified as being the source of any problem or creating any impediment to the operation of the program, the 2002 Review Team felt that having a formal document covering

the responsibilities of each party would help to avoid any such problems in the future.

2002 FOLLOW-UP RECOMMENDATION:

A formal MOU should be executed between the Division of Water Resources and the Office of Oil and Gas covering the administration of the Underground Injection Control program for Class II injection wells.

1993 REVIEW FINDING I.9.

The OOG does not have enough inspectors or funding to fully meet its statutory mandate. (See also Section IX of this report.)

1993 REVIEW RECOMMENDATION I.9.

The review team recommends that West Virginia explore means to significantly increase OOG funding so that OOG can meet its statutory mandate. [1990] IOGCC Guidelines section 4.1.2.1.b.(1) and (2).

2002 WEST VIRGINIA RESPONSE:

Budgetary increases to fund the OOG must come from the West Virginia State Legislature. While there has been no significant increases, some minor increases such as those regarding the processing of bond transfers and Federal Energy Regulatory Commission (FERC) filings, have occurred. In 1996 a bill was drafted the Abandoned Well Act. Among other things, this legislation would have provided for a significant increase in funding for the purpose of plugging and reclaiming of abandoned wells/sites. Unfortunately, no action was taken by the legislature. Since the initial review, the OOG budget has remained flat and staffing is down 13%.

The OOG is looking at various supplemental sources of funding including storm water Phase II permitting, violation assessments and grants. We have been able to access the Federal Oil Spill Liability Trust Fund for certain oil cleanup operations and we are now participating in a federal grant that will provide funding to staff an inspector specialist position dedicated to the area of well site reclamation.

2002 FOLLOW-UP REVIEW FINDING:

This recommendation has not been met. Since the 1993 Review, the OOG has made significant efforts to explore additional funding from several sources, including the Storm Water Phase II program, violation assessments and grants.

However, West Virginia has not significantly increased OOG funding to allow OOG to meet its statutory mandate. The number of inspectors has decreased from 13 full-time inspectors and two supervisors in 1993 to 13 full-time inspectors and one supervisor as of 2001. During the same period no significant increases in funding have been provided for operating the OOG. Since the 1993 Review, the OOG budget has increased only slightly from \$1.7 million to \$1.8 million, and staffing has been reduced by 13 percent.

Disbursements for the Office of Oil and Gas in fiscal year 2001 consisted of approximately \$2.36 million with \$857,000 coming from general revenues, \$649,000 from well work permit fees, \$115,000 from deposits to the reclamation fund (\$100 added to each well work permit plus bond forfeitures) and approximately \$50,000 in ground water fees. Since 1993 the OOG has supplemented its funding with a significant contribution from the Federal Oil Spill Liability Trust Fund under the Oil Pollution Act of 1990 for plugging wells leaking oil. During fiscal year 2001, revenues from this fund totaled approximately \$400,000.

The oil and gas industry generates \$3.2 million per year in severance taxes and, in addition, pays property taxes on minerals, pays B&O taxes, and generates income taxes. The general revenue funds received by OOG are only 25% of the severance tax receipts alone.

2002 FOLLOW-UP RECOMMENDATION:

The Review Team strongly recommends that the state increase the amount of funding for OOG to assure that the OOG is able to meet its statutory mandates.

1993 REVIEW FINDING I.11.

The OOG does not have formal agreements with other DEP offices regarding the sharing of specialized staff expertise.

1993 REVIEW RECOMMENDATION I.11.

The review team recommends DEP develop formal memoranda for sharing staff environmental expertise among OOG and other DEP offices. [1990] IOGCC Guidelines sections 4.3.1.3. and 4.4.

2002 WEST VIRGINIA RESPONSE:

The DEP has formally established an Enforcement Coordinator within the Office of Environmental Enforcement, to provide technical environmental guidance and assistance throughout the Department. The OOG has received investigative assistance in the field and procedural guidance

relating to assessment orders. Additionally, the OOG participates in monthly reporting, along with all other Divisions and Offices to the Enforcement Coordinator. This information is used to monitor and coordinate DEP enforcement activities.

2002 FOLLOW-UP REVIEW FINDING:

The recommendation has been substantially met. The Office of Oil and Gas appears to receive technical assistance and expertise from within the DEP quite readily. No problem was identified relating to having sufficient technical expertise to respond to the statutory mandates of the OOG. The subject agencies are now all reporting to a single Department head, which provides for better coordination. The DEP established an Enforcement Coordinator to provide consistent guidance and assistance in the area of enforcement throughout the DEP. The OOG coordinates day-to-day with other specialized DEP staff, including a science advisor and information technology advisor. In most cases, written DEP policy directs that these specialists shall coordinate with and advise staff of the various DEP programs.

It seemed to be the general feeling among OOG staff that they had the complete support of DEP hierarchy in carrying out their mission. Although the literal language of this recommendation was not met in that there are no formal memoranda relating to sharing staff and expertise among the DEP offices, the Review Team felt that the agency had achieved such a significant level of cooperation that any formal memoranda of understanding were not necessary. In addition, the restructuring of the DEP has made such a legal formalistic approach unnecessary. The DEP is to be complimented for the excellent manner in which staff among the various divisions and offices are cooperating to lend expertise to the Office of Oil and Gas. Such coordination helps to offset the under-staffing and funding deficiencies.

1993 REVIEW FINDING I.12.

The OOG does not seek legal advice early in its initiatives.

1993 REVIEW RECOMMENDATION I.12.

The review team recommends OOG acquire sufficient legal support to prepare and pursue appropriate enforcement actions and to provide procedural and substantive support for rulemaking. [1990] IOGCC Guidelines section 4.3.1.2.

2002 WEST VIRGINIA RESPONSE:

The DEP's Office of Legal Services (OLS), created in 1995 (Executive Order 4-95), provides attorneys and other legal support staff (18 people)

to represent the OOG and assist in enforcement actions. We have an attorney dedicated and funded as needed. During 2001, the time billed from OLS to the OOG amounted to approximately one-fifth of an employee. Additionally, the OLS has just recently hired staff dedicated to providing rulemaking support.

2002 FOLLOW-UP REVIEW FINDING:

The recommendation has been met. The DEP's Office of Legal Services, created in 1995, provides all necessary legal support to represent the OOG and assist in enforcement. Previously, the OOG had to rely on the office of the Attorney General for legal assistance. The OOG has both civil and criminal ongoing enforcement actions.

1993 REVIEW FINDING I.13.

OOG's orphaned well mapping project is a high quality program that may be a model for other states.

1993 REVIEW RECOMMENDATION I.13.

Although beyond the scope of the IOGCC Guidelines, the review team recognizes West Virginia's efforts to identify abandoned and orphaned wells and recommends the state continue with these efforts.

2002 WEST VIRGINIA RESPONSE:

Abandoned wells are defined under WV Code 22-6-19 and are a reflection of the well's activity. While orphaned wells are not defined, they are generally accepted to refer to wells which have no operator.

The cursory abandoned well mapping/identification project has been completed. Subsequent to its completion, the OOG has undertaken efforts to further refine the results through field investigations. An OOG priority is to acquire high quality Global Positioning System (GPS) locational data on all abandoned wells as they are identified. As a mechanism in helping to achieve this goal, GPS units have been supplied to all field personnel.

The Office continues to work with operators on plugging programs and is planning an initiative for 2002 to accelerate this effort. The objective of this initiative will be to identify operators' abandoned wells and to return them to a state of compliance through reactivation or plugging according to an agreed schedule.

2002 FOLLOW-UP REVIEW FINDING:

The recommendation has been met and exceeded. OOG is commended for its efforts. Abandoned and orphaned wells are now addressed in the 2000 STRONGER Guidelines and are discussed in the Abandoned Sites portion of this report.

II. Permitting

1993 REVIEW FINDING II.2.

At the present time, exempt E&P waste falls under the jurisdiction of various offices within DEP including OOG, OWR, OWM, and OAQ.

1993 REVIEW RECOMMENDATION II.2.

The review team recommends that West Virginia continue to consolidate authorization for regulating exempt E&P wastes with the OOG. A formal interagency agreement or memoranda [sic] of understanding is needed to place responsibility for handling all exempt E&P wastes under the OOG. [1990] IOGCC Guidelines section 4.1.1.

2002 WEST VIRGINIA RESPONSE:

As discussed in response I.6., the necessary MOUs are in place. All such MOUs are within the Department and fall under the authority of the Department Secretary. All exempt E & P wastes are presently handled by the OOG with the exception of minor amounts, which are landfilled, and fall under the jurisdiction of the DEP's Division of Waste Management.

2002 FOLLOW-UP REVIEW FINDING:

The recommendation has been substantially met. See Finding and Recommendation I.6, above.

2002 FOLLOW-UP RECOMMENDATION:

A formal MOU should be executed between the Division of Water Resources and the Office of Oil and Gas covering the administration of the Underground Injection Control program for Class II injection wells.

1993 REVIEW FINDING II.3.

OOG recognizes that general permits are a method of regulating activities that are otherwise difficult to regulate individually, in light of the activity levels and fiscal constraints.

1993 REVIEW RECOMMENDATION II.3.

The review team recommends that OOG work with OWR to develop a NPDES general permit addressing produced water discharges to surface waters, which can be issued by the OOG for a fixed term, followed by an evaluation of the permit to identify the level of success and the need for modification, if necessary. [1990] IOGCC Guidelines section 4.1.1.

WEST VIRGINIA RESPONSE:

The NPDES permit has been developed for stripper oil wells and been in place since 1994. The OOG has received 35 applications, since its inception, and currently has 10 active permits which average discharging approximately 200 gals./day over the course of the annual discharge period (6 months). Of the 5 parameters, pH, chloride (cl), iron (fe), oil and grease, and total suspended solids (tss), operators have had good success meeting the effluent limits for all but tss which has had moderate success and may have been adversely impacted through improper analysis.

2002 FOLLOW-UP REVIEW FINDING:

The recommendation has been met. The recommended permit has been developed and issued, and is periodically reissued. It is currently undergoing evaluation by OOG.

2002 FOLLOW-UP RECOMMENDATION:

OOG should pursue resolution of the Total Suspended Solids issue.

1993 REVIEW FINDING II.4.

The draft associated waste guidance document provides guidance on the goals of waste minimization, separation of exempt and nonexempt wastes, and selection of appropriate disposal technologies.

1993 REVIEW RECOMMENDATION II.4.

The review team recommends that the OOG complete the associated waste general permit for a fixed term, followed by an evaluation of the permit to identify the level of success and the need for modification, if necessary.

2002 WEST VIRGINIA RESPONSE:

The associated waste [general] permit has been developed and was originally issued in 1997. There has not been much interest by the industry in the permit. Since that date there have only been 6 approved applications. However in discussions with the Independent Oil and Gas Association (IOGA) environmental committee members, there is an indication of increased future interest.

2002 FOLLOW-UP REVIEW FINDING:

The recommendation has been met.

1993 REVIEW FINDING II.7.

The plan gives no indication of whether a liner is required and what its disposition will be.

1993 REVIEW RECOMMENDATION II.7.

Although beyond the scope of the IOGCC Guidelines, the review team recommends that whenever possible, the ultimate disposition of a pit liner, if used, be identified in the Erosion and Sediment Control Plan.

2002 WEST VIRGINIA RESPONSE.

Under West Virginia statute, a pit liner is required to be used whenever the pit is not naturally impervious. The liner remains under the drill cuttings after reclamation. The free water is treated and released under the Pit General Permit while the pit liner and solids are encapsulated and vegetative cover established (G.4(f)).

2002 FOLLOW-UP REVIEW FINDING:

Although beyond the scope of the IOGCC Guidelines, the Review Team finds that the recommendation has been met.

III. Siting

1993 REVIEW FINDING III.2.

With the exception of depth-to-groundwater restrictions, the West Virginia program meets the siting guidelines outlined in [1990] IOGCC Guidelines section 5.3.3.

1993 REVIEW RECOMMENDATION III.2.

The review team recommends OOG address depth-to-groundwater restrictions in its permitting program. IOGCC Guidelines section 5.3.3.

2002 WEST VIRGINIA RESPONSE:

West Virginia topography does not allow much flexibility regarding the location of drilling pits. However, all pits must be impervious or synthetically lined and in all cases, the OOG inspector has to provide approval as to the pit location. Additionally, depth to ground water is addressed in the casing program requirements (WV Code 22-6-21 and 35CSR4-11-3) of the permitting process. All groundwater zones are required to be cased and cemented to the surface. One of the main objectives in the permitting process, as well as all facets of the OOG, is to ensure protection of groundwater.

2002 FOLLOW-UP REVIEW FINDING:

This recommendation has been substantially met. OOG staff stated that the appropriate location of pits, including whether the pits would be below the water table, was considered in the course of site inspections and review of reclamation plans. No specific requirement was identified, however, in the regulations or in the West Virginia Erosion and Sediment Control Field Manual, which addressed depth to groundwater as restricting pit locations. The lack of formal restrictions may be of low significance, however, given the fact that all pits must be impervious or synthetically lined and that the OOG inspector must give the approval of the pit location.

2002 FOLLOW-UP RECOMMENDATION:

OOG may wish to define “impervious” for the purposes of consistency of site reviews.

IV. Public Participation

1993 REVIEW FINDING IV.2.

The minimum amount of time for persons receiving notice of a Well Work Permit to make a comment is 15 days.

1993 REVIEW RECOMMENDATION IV.2.

The review team recommends that the OOG evaluate whether the 15-day period is adequate. [1990] IOGCC Guidelines section 4.2.2.1.

2002 WEST VIRGINIA RESPONSE:

The OOG permitting section has determined that the 15-day period is adequate, as they will accept any contact, including phone calls, to initially halt the permitting process while the company and OOG inspector address the concerns of the objecting party. The written notice of the proposed work is either hand delivered to the landowner with a signed affidavit of personal service or sent certified mail with return receipt requested.

2002 FOLLOW-UP REVIEW FINDING:

OOG has evaluated the time period and the recommendation has been met. The OOG has demonstrated enhanced attentiveness to comments by concerned citizens.

1993 REVIEW FINDING IV.5.

Adjacent and downstream landowners do not, in all cases, receive notice of Well Work Permit applications.

1993 REVIEW RECOMMENDATION IV.5.

Notice of Well Work Permit applications should be published in local newspapers, and documentation of this publication should accompany the application filed with the OOG. Landowners adjacent to the well site should receive written notice of the application simultaneously with the filing of the application with OOG. Any affected member of the public should be allowed to protest, within 15 days after the Well Work Permit application is filed, and should have some opportunity for hearing and judicial review.

2002 WEST VIRGINIA RESPONSE:

Notices of this nature are required for Coalbed Methane (CBM) and UIC well permit applications. CBM and UIC notices are required to be published as a class II legal advertisement in the local paper where the well is situated. While not required for other permits, affected parties have rights through the courts under common law.

2002 FOLLOW-UP REVIEW FINDING:

It is noted that this recommendation is beyond the scope of the 1990 Guidelines. The recommendation was made by one team member from the 1993 review team and did not represent a consensus recommendation. Therefore, it was concluded that it was not necessary to formally address this recommendation as a part of this review. Nevertheless, the recommendation and the response of the OOG were reviewed and discussed. No further recommendation is made on this issue by the Review Team.

VI. Technical Criteria

1993 REVIEW FINDING VI.12.

West Virginia's regulatory program does not contain specific requirements applicable to commercial or centralized facilities.

1993 REVIEW RECOMMENDATION VI.12.

Although West Virginia currently has no commercial or centralized facilities, the review team recommends that OOG establish a specific regulatory program to include technical and public participation requirements that would be applicable to such facilities. [1990] IOGCC Guidelines section 5.7.

2002 WEST VIRGINIA RESPONSE:

West Virginia still has no commercial facilities as defined under the STRONGER guidelines but would expect to establish the necessary regulatory requirements if and when such facilities were permitted. West Virginia now has five commercial disposal wells within the state and specific regulatory requirements for these facilities are written in the permits. With the states' relative inexperience with these commercial disposal wells, OOG feels it would be premature to develop regulations until such time as the existing regulatory requirements can be evaluated. Technical and public participation requirements are a part of the existing process. The NPDES permit has established technical and public participation requirements applicable to those centralized facilities.

2002 FOLLOW-UP REVIEW FINDING:

This recommendation, technically, has not been met. However, West Virginia has no commercial facilities as defined in the STRONGER Guidelines, nor does it have specific regulations for commercial or centralized facilities. Surface facilities at centralized facilities are permitted in the same manner as surface facilities at producing wells. For this reason, the Review Team found that OOG meets the intent of Guidelines 5.10.1 and 5.10.2, because waste handled at a centralized facility is under the control of one operator.

VII. Waste Tracking

1993 REVIEW FINDING VII.1.

Currently, West Virginia does not differentiate between the tracking of commercial and non-commercial disposal of E&P wastes.

1993 REVIEW RECOMMENDATION VII.1.

Disposal of E&P wastes at commercial facilities requires an effective waste tracking system. The review team recommends that formal procedures be developed for waste tracking specifically associated with commercial facilities. This would include certification of waste haulers and other tracking requirements given in the [1990] IOGCC Guidelines sections 4.2.4., 4.2.5., and 5.7.2.3.

2002 WEST VIRGINIA RESPONSE.

As stated in response VI. 12., West Virginia has no commercial facilities, however, all commercial disposal wells require waste tracking to be in place before any waste may be transported to a commercial UIC facility. Additionally, the OOG does not allow third party haulers to transport waste to a commercial UIC disposal facility. The facility operator is responsible for hauling and tracking of waste.

2002 FOLLOW-UP REVIEW FINDING:

See Follow-up Review Finding VI.12.

VIII. Data Management

1993 REVIEW FINDING VIII.1.

The data management capabilities of the OOG generally meet all criteria of [1990] IOGCC Guidelines section 4.2.7.

1993 REVIEW RECOMMENDATION VIII.1.(1)

While beyond the scope of the IOGCC Guidelines, the review team recognizes that OOG has developed an exceptional data management system and encourages OOG to continue to expand its use in E&P waste management by:

- (1) Requiring the filing of all water production data. Currently, water production is reported only for enhanced oil recovery wells.

2002 WEST VIRGINIA RESPONSE:

The OOG once required filing of water production data but this policy was discontinued after evaluation. It was felt that the requirement was redundant, as most water was disposed of at UIC sites and specific water reporting requirements exist for those facilities.

2002 FOLLOW-UP REVIEW FINDING:

This recommendation was beyond the scope of the 1990 IOGCC Guidelines, but is now addressed under Data Management in the 2000 Guidelines. See Finding and Recommendation III.30 in Part 2 of this report, below.

1993 REVIEW RECOMMENDATION VIII.1.(2)

- (2) Consider more frequent filing of production and injection reports or computerization of those reports, or other mechanisms, to help avoid delays in processing the current annual reports.

2002 WEST VIRGINIA RESPONSE:

The Underground Injection Control Section of the OOG requires monthly injection reports. The current annual filing requirements [for production reports] have not been found to increase the likelihood of delays in producing the annual reports.

2002 FOLLOW-UP REVIEW FINDING:

This recommendation has been met.

1993 REVIEW RECOMMENDATION VIII.1.(3)

- (3) Provide an 800 number for increased public access to the database.

2002 WEST VIRGINIA RESPONSE:

An 800 number was established for public access to the database in 1995. The OOG now has its own web page which provides access to our database. The 800 number has been discontinued. Users have the capability of retrieving various types of information including: production, spills, violations, operators, and locations through an interactive mapping interface. The web page also provides access to all OOG forms, rules and regulations and the soil and erosion control manual.

2002 FOLLOW-UP REVIEW FINDING:

This recommendation has been met through creation of the web page.

1993 REVIEW RECOMMENDATION VIII.1.(4)

- (4) Acquire more complete GIS system support to augment the existing capabilities provided by DEP.

2002 WEST VIRGINIA RESPONSE:

The OOG has its own Unix GIS workstation which provides access to the entire DEP GIS database. We also have the capability of uploading OOG acquired GPS data to this database. Additionally, the DEP, Information Technology Office (ITO), has a group dedicated to GIS administration and has just recently (2001) created the Customer Support Service (CSS) group to provide assistance to DEP personnel on all computer technology related subjects.

2002 FOLLOW-UP REVIEW FINDING:

This recommendation has been met.

IX. Inspection, Surveillance, Compliance Evaluation

1993 REVIEW FINDING IX.4.

The review team regards the inspection goals as quite good and recognizes the fact that most field staff remain motivated in spite of being overworked. However, because of limited resources, some issues are not being dealt with adequately and there is significant reliance on operator self-inspection (i.e., the frequency of periodic inspections is not always commensurate with risk).

1993 REVIEW RECOMMENDATION IX.4.

Although beyond the scope of the IOGCC Guidelines, the review team encourages OOG to consider the following to improve the effectiveness of current field staff:

- (1) Improve communications capability. For example, cellular phones or other means could be used to eliminate communication “dead spots”, and separate business telephone lines could be provided in an inspector’s home at the state’s expense.

2002 WEST VIRGINIA RESPONSE:

All OOG field personnel are equipped with cell phones and have dedicated phone lines in their homes for state business. Each one also has a laptop computer and fax/scanner/copier/printer

2002 FOLLOW-UP REVIEW FINDING:

This recommendation has been met.

1993 REVIEW RECOMMENDATION IX.4(2)

- (2) Develop some sort of formal overtime compensation system.

2002 WEST VIRGINIA RESPONSE:

The DEP adopted an overtime/compensatory time policy in 1996 which covers all DEP personnel.

2002 FOLLOW-UP REVIEW FINDING:

This recommendation has been met.

X. Enforcement

1993 REVIEW FINDING X.2.

OOG has no formal guidance, other than the Drilling Fluids General Permit, to assist inspectors in determining if an incident is a violation.

1993 REVIEW RECOMMENDATION X.2.

The review team recommends that the OOG issue guidance for utilization by inspectors to ensure consistency in enforcement actions. [1990] IOGCC Guidelines section 4.3.1.4.

2002 WEST VIRGINIA RESPONSE:

OOG inspectors function under a “team” concept as an approach to enforcement. The state is divided into districts with three inspectors in each district. Each inspector is encouraged to work with other members of his team (district) on problem cases. All enforcement actions must fall within the framework of WV Code Chapter 22 Articles 1 through 6 and 35CSR1-4. Additionally, a 2002 initiative will include training to enhance violation identification and provide education on compliance achievement and enforcement policies and strategies.

2002 FOLLOW-UP REVIEW FINDING:

This recommendation has been met. Additional guidance with respect to ensuring consistency in enforcement actions is provided in the Office of Oil and Gas Assessment Policy dated November 15, 2001.

Part 2

REVIEW OF WEST VIRGINIA PROGRAM UNDER 2000 GUIDELINES

The Guidelines for the Review of State Oil and Natural Gas Environmental Regulatory Programs, as adopted in June 2000 (the 2000 "Guidelines") contain certain standards that were not part of the 1990 IOGCC Guidelines in effect at the time of the 1993 Review for West Virginia. In addition, the 1990 IOGCC Guidelines were revised in 1994, which revisions included new standards. This portion of the Report covers new issues that are addressed in the 2000 Guidelines adopted since the 1993 Review. Each question is reprinted, with a reference to the relevant 2000 Guidelines section in brackets, together with the West Virginia response in italics, and is followed by the Review Team's Findings and Recommendations.

I. GENERAL CRITERIA

SUPPLEMENTAL REVIEW QUESTION I.1.

I.1. Are technical criteria for E&P waste management practices contained in a formal document? If so, please provide the appropriate reference. [3. 1.f]

2002 WEST VIRGINIA RESPONSE:

Yes, technical criteria for E & P waste management practices are found in the following:

- *Underground Injection Control (UIC) permit conditions for produced fluids,*
- *General permit conditions for drilling pit fluids, produced fluids, and associated wastes,*
- *For landfill disposal, all material must be determined to be RCRA non-hazardous as defined under 40 CFR Part 261.*

FINDING I.1:

West Virginia program meets the 2000 Guidelines.

SUPPLEMENTAL REVIEW QUESTION I.2.

I.2. What are the goals and objectives of the state's waste management program? Please provide reference to the appropriate document(s). [2000 Guidelines 3.2]

2002 WEST VIRGINIA RESPONSE:

In creating the Department of Environmental Protection, the State Legislature found that restoring and protecting the environment is fundamental to the health and welfare of individual citizens and the State has primary responsibility for protecting the environment. Furthermore, the legislature found that it is the policy of the State to use all practicable means and measures to prevent or eliminate harm to the environment and biosphere and to create and maintain conditions under which man and nature exist in productive harmony and fulfill the social, economic and other requirements of present and future generations. (WV Code 22-1 -1). Consequently the goals and objectives of all facets of the OOG are centered on the foundation of environmental protection. Specific to waste management, the OOG desires to minimize such waste and to provide a mechanism for and require the proper ultimate disposition of any waste. (associated waste permit, Underground Injection Control (UIC) permit, other general permits, landfilling through the Division of Waste Management (DWM)).

FINDING I.2:

The West Virginia Program meets the 2000 Guidelines.

The 2000 Guidelines [3.2] recommend that a state program should contain a clear statement of the program's goals and objectives, including protecting human health and the environment from the mismanagement of E&P wastes while maintaining an economically viable oil and gas industry. The guideline has been met. The West Virginia Code, Article 1, Division of Environmental Protection, § 22- 1 - 1, states in part:

- (a) The Legislature finds that:
 - (1) Restoring and protecting the environment is fundamental to the health and welfare of individual citizens, and our government has a duty to provide and maintain a healthful environment for our citizens.
 - (2) The state has the primary responsibility for protecting the environment....
- (b) The Legislature declares that the establishment of a department of environmental protection is in the public interest and will promote the general welfare of the state of West Virginia without sacrificing social and economic development. It is the policy of the state of West Virginia, in cooperation with other governmental agencies, public

and private organizations, and the citizens of this state, to use all practicable means and measures to prevent or eliminate harm to the environment and biosphere, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic and other requirements of present and future generations.

The West Virginia Code, Article 10, Abandoned Well Act, § 22-10-2, states in part:

- (b) The Legislature hereby declares that it is in the public interest and it is the public policy of this state, to foster, encourage and promote the proper plugging of all wells at the time of their abandonment to protect the environment and mineral resources of this state.

The OOG implements these goals and objectives through establishment of personal performance evaluation objectives for its employees.

SUPPLEMENTAL REVIEW QUESTION I.3.

- I.3. Does your program provide for flexibility in determining the criteria applicable to E&P waste (e.g., variation in criteria dependent on region of the state or other factors; authorization of site-specific waivers for good cause shown and consistent with program goals and objectives)? If so, please provide an example or examples and reference to the appropriate document(s). [2000 Guidelines 3.3]

2002 WEST VIRGINIA RESPONSE:

Flexibility is provided for in both permits and regulations. NPDES permits are dependent upon local stream flow and stream load and consequently are designed accordingly (NPDES permit). Water Pollution Control permits are designed and utilized based on such factors as area topography and water quality contaminants. For example, some Coalbed Methane (CBM) wells produce high quality water and can be appropriately managed through such a permit.

The Chief of the OOG has the authority to grant variances, under certain conditions, to requirements under 35CSR4 and WV Code Chapter 22 Article 21. Insert WV response here.

FINDING I.3:

The 2000 Guidelines [3.3] recognize that it is appropriate for state programs to provide site-specific waivers or variances to be allowed for good cause, in order

to accommodate regional, areal, or individual differences within a state. The West Virginia E&P waste management programs meets the 2000 Guidelines.

II. ADMINISTRATIVE CRITERIA

SUPPLEMENTAL REVIEW QUESTION II.1.

II.1 . Do E&P waste permits provide **notice of the permittee's obligation** to comply with other federal, state or local requirements? If so, please provide a copy of the form(s). [2000 Guidelines 4.1.1]

2002 WEST VIRGINIA RESPONSE:

Notices of compliance obligation are contained in the UIC permit, associated waste general permit, NPDES general permit, and the drilling pit general permit.

FINDING II.1:

The West Virginia Program meets the 2000 Guidelines.

SUPPLEMENTAL REVIEW QUESTION II.2.

II.2. Has the state adopted a **state contingency plan** for response to spills and releases? If so, briefly describe, including volumes that trigger a response, time in which notification and clean-up is to occur, and criteria (i.e., cleanup standards) used to assure that remediation was accomplished. Please provide reference to applicable portions of the state plan. [2000 Guidelines 4.2.1.1.a]

2002 WEST VIRGINIA RESPONSE:

The State has developed an Emergency Operations Plan (EOP) to respond to disasters and emergencies. It assigns duties and responsibilities to departments, agencies, and support organizations. The DEP plays an integral part in this plan and additionally has established an 800 number for spill reporting and a corresponding "Spill Line Manual" that lists call procedures, contacts, etc.

Crude oil and natural gas industry related spills are routed to the OOG for investigation. Additionally, notification directly to the OOG from the well operator is required immediately but in no case, later than 24 hours. Reportable discharges are those that: (1) would be reportable pursuant to section 311(b) of the Federal Water Pollution Control Act, (2) any upset or bypass causing effluent limitations established under the general permit to be exceeded or (3) any pit failure which results in a discharge to any surface water of the state. Cleanup standards are generally those found in the Groundwater Protection Area (GWPA) established Maximum Concentration Levels (MCL) and the associated waste general permit.

FINDING II.2:

The state contingency plans meet the 2000 Guidelines. It was also pointed out that another mechanism for addressing spills and releases in West Virginia is the State's voluntary remediation (or "Brownfields") program. See W. Va. Code § 22-22-let seq.

SUPPLEMENTAL REVIEW QUESTION II.3.

II.3. Describe any **funding** provisions to enable the state to respond to spills and releases in the event a responsible operator cannot be located or is unwilling or unable to respond, and any provisions for reimbursement of the state for moneys so expended. [2000 Guidelines 4.2. 1. Lb]

2002 WEST VIRGINIA RESPONSE:

If a spill occurs from an abandoned well or wellsite, the OOG can access the Oil and Gas Reclamation Fund which can be used to plug and reclaim abandoned wells and well sites. Monies from this fund come from fees on new drilling permits and bond forfeitures and are typically in the \$100,000 range per year. Expenditures from this fund can be recovered under WV Code Chapter 22 Article 10 Section 7(/). Additionally, the DEP's Division of Waste Management has a response team that can be activated for assistance through the Hazardous Waste Emergency Response Fund (WV Code Chapter 22 Article 19). The statute was modified in 2000 to allow for clean up of petroleum products. The statute requires reimbursement for expenditures from this fund by the responsible party.

The State has accessed the federal Oil Spill Liability Trust Fund through the Oil Pollution Act (OPA) regarding crude oil spills impacting or threatening to impact a navigable water of the United States and in which the responsible party is unknown.

FINDING II.3

The West Virginia program meets the 2000 guidelines. It must be noted, however, that the State relies on funds provided pursuant to the Oil Pollution Act of 1990 for spills of oil, and, should those funds not be accessible to the State, an alternative source of funds for oil spill response activities would be necessary. It was also pointed out that legislation passed during the 2002 Regular Session of the West Virginia Legislature expanded the State's authority to recover response costs from responsible parties. See West Virginia Code § 22-11-29.

SUPPLEMENTAL REVIEW QUESTION II.4.

II.4. Describe the **program planning and performance measurement** processes, including the following [2000 Guidelines 4.2.3, 4.3, 8.1, 8.2, 8.3]:

SUPPLEMENTAL REVIEW QUESTION II.4.a.

a. Strategic or short-term planning.

2002 WEST VIRGINIA RESPONSE:

The Office of Oil and Gas is comprised of four program/sections. The managers of each of these sections meet monthly with the Chief to discuss strategies and undertake short-term planning. A significant portion of the planning takes place with the individual employees during their performance appraisals. These are originally established at the beginning of each year with interim reviews as often as needed but at least mid year and year-end Assessment of the success of goals and objectives are determined in those reviews based on the performance standards established in the originally appraisals.

FINDING II.4.a:

The West Virginia program partially satisfies the 2000 Guidelines. There is excellent communication within the OOG which is sufficient to address short term planning criteria. In addition, the yearly review of budget objectives also provides an excellent opportunity to articulate and memorialize longer-term goals and objectives. OOG has also developed goals and objectives.

OOG could improve on its overall planning by creating a long-term strategic plan. There is a need for expanded and formalized methods for establishing long-term plan goals and objectives. Such goals and objectives would allow for comparative analysis over time for specific data and indicators of protections of the environment and human health and safety. Among key program areas that may benefit from performance based planning are measurable objectives for the plugging of abandoned wells and the tracking of production wastewater or brine. They may also benefit from reviewing the performance measurement methods in other states.

RECOMMENDATION II.4.a:

It is recommended that a strategic plan be developed for the Office of Oil & Gas consistent with the DEP five-year strategic plan. In addition, it is recommended

that data be collected and, in the preparation of budget objectives for the upcoming year, a review be made of the goals and objectives of the past budget year and an evaluation be conducted of the OOG's performance in meeting the goals and objectives.

SUPPLEMENTAL REVIEW QUESTION II.4.b.

- b. Briefly describe how program goals and objectives are related to the **protection of human health and the environment**. [2000 Guidelines 3.2, 8. 1]

2002 WEST VIRGINIA RESPONSE:

The OOG is the lead E&P regulatory body responsible for the protection of human health and the environment and consequently applies this premise in everything it does. This practice is evident in such activities as the review of all casing programs and proper site construction Best Management Practices (BMPs) for permit applications, responding to citizens' complaints, reviewing reclamation activities, establishing site - safety plans for deep well permits, developing compliance orders and plugging of abandoned wells and reclamation of abandoned well sites along with a regular inspection and enforcement program.

FINDING II.4.b:

The West Virginia program meets the 2000 Guidelines.

SUPPLEMENTAL REVIEW QUESTION II.4.c.

- c. Briefly describe the program's methods for establishing program goals and objectives. [2000 Guidelines 3.2]

2002 WEST VIRGINIA RESPONSE:

The goals and objectives of the OOG are predicated on the mandates as set forth in statute and regulation and are done in conjunction with the overall mission, goals and objectives of the DEP as outlined in the strategic plan and WV Code 22-1-1 (see General Criteria question 2). OOG staff participates in strategic planning by evaluating past activities and future needs and priorities to establish program goals and objectives for the coming year.

The OOG has developed or implemented, or is in the process of developing and implementing, several initiatives designed to achieve the

protection of human health and the environment. Examples of such initiatives include:

- *compliance protocols specified in laws and orders involving among other things, operator training,*
- *site safety plan requirements for all deep wells,*
- *well plugging contractor certification which will result in a guidance manual and training.*

FINDING II.4.c:

The West Virginia program partially satisfies the Guidelines. In discussions with OOG staff they indicated that Employee Performance Appraisals (EPAs) were used to establish goals for each program/section. This appeared to be an adequate method for identifying specific goals and objectives. However, consistent with Recommendation II.4.a., the OOG should develop a mechanism to measure compliance with goals and objectives as well as developing a more formalized approach to strategic planning for the OOG. In addition, the 2002 Review Team was impressed with the initiatives that had been identified by the OOG that are designed to achieve the protection of human health and the environment. In particular, the OOG is to be applauded for the development of site safety plans for all deep wells, contractor certification for well plugging activities and creative approaches to compliance protocols by inserting requirements such as operator training in orders resolving notices of violations.

RECOMMENDATION II.4.c:

See Recommendation II.4.a, above.

SUPPLEMENTAL REVIEW QUESTION II.4.d.

- d. How E&P waste management activities are weighted against other program activities competing for time and resources. [2000 Guidelines 4.3.1, 4.3.2]

WEST VIRGINIA RESPONSE:

Protection of the environment is weighted above all other program activities (WV Code 22-1-1). As E&P waste management interacts in the environmental protection mandate, E&P waste management is weighted heavily. The OOG relies significantly on general revenue funding from the legislature but does seek other avenues. Just recently we were able to participate in an Environmental Protection Agency (EPA) grant that will be used to staff an Inspector Specialist who will be dedicated to well site reclamation and BMP implementation and training.

FINDING II.4.d:

The Review Team concludes that the OOG staff is working well, within the budgetary constraints that it currently faces. Additional funding and personnel resources, however, would improve the effectiveness of the programs.

SUPPLEMENTAL REVIEW QUESTION II.4.e.

- e. How program plan expectations are communicated to staff at all levels who are responsible for program implementation.

2002 WEST VIRGINIA RESPONSE:

Program priorities and plan expectations are developed through the strategic and short-term planning sessions undertaken by the OOG Chief and managers. These plans are then disseminated to the staff responsible for implementation through meetings, memorandums, and individually through the employee performance appraisal, which outlines specific duties and responsibilities (see question 4. a).

FINDING II.4.e:

The West Virginia program meets the 2000 Guidelines. The 2002 Review Team noted the excellent communication that exists among the OOG staff.

SUPPLEMENTAL REVIEW QUESTION II.4.f.

- f. Briefly describe how progress toward **achievement of program goals and objectives is measured.** [2000 Guidelines 8.2]

2002 WEST VIRGINIA RESPONSE:

Policies and procedures which are developed and implemented to achieve the OOG's goals and objectives are always under review. Regardless of the method of measurement, all progress must be toward achieving the ultimate goal of protecting the public health and the environment.

The OOG measures progress a variety of ways. One current example of impact assessment involves our efforts in the identification of areas deficient in erosion and sediment controls and the subsequent follow-up

inspection after erosion and sediment control implementation. This methodology is being implemented at the DEP level in its watershed analysis.

Input measures are also developed as we encourage feedback from all our customers (regulated community, environmental community, public, other government agencies). Under compliance and inspection/enforcement sections, the OOG receives and responds to a variety of complaints. Additionally the OOG conducts periodic operator and public training seminars. Through compliance protocol, the OOG is participating in individualized training and is planning a joint training session with EPA around June of this year.

At the DEP level, town hall meetings have been held periodically to discuss particular issues and to receive feedback regarding the activities of the Department. The DEP has also in the past engaged in customer surveys to help gauge the level of achievement towards our goals. The DEP website presently provides one of the best tools for input from all sources outside the Department.

The OOG has also historically engaged in output analysis, such as inspections and activity witnessing (Mechanical Integrity Tests (MIT), cementing jobs, etc), for determining success of individualized goals, which in turn provide a mechanism to evaluate the level of achievement of program goals and objectives.

FINDING II.4.f.

The 2002 Review Team noted several positive aspects of the OOG program, relating to benchmarking or measurable evaluations of success in addition to those identified in the above response. Several existing elements of the OOG program may lend themselves to benchmarking for the purpose of tracking improvements in human health and the environment, including:

- Maintaining the OOG database to track and document the number of releases, outstanding violations, and abatement activities;
- Maintaining the OOG database to track every citizen complaint that results in an identified impact to human health and the environment, to ensure that every citizen complaint is addressed;
- Tracking OOG participation in watershed assessment programs, where such training is an excellent example of how the quality of program activities can be improved. One such effort resulted in a documented 10-12% increase in vegetative cover at permitted sites throughout the watershed greatly increasing sediment control and reducing erosion.

However, there needs to be a better link between information obtained from the measurement of progress in achieving goals and objectives, and the way in which the information is used to modify program activities. Performance measurement needs to be a cyclical process.

OOG's benchmarking is not clear enough to illustrate how the collected information is being used to evaluate the effectiveness of the programs in protecting human health and the environment. In particular, there should be some tracking process which monitors the number of abandoned wells that are being plugged each year, the number of newly determined abandoned and orphaned wells, and how resources meet the objective of plugging the significant backlog of wells to be plugged.

RECOMMENDATION II.4.f:

Additional development of benchmarking and measurement techniques is needed to more clearly and formally illustrate the link between performance measurements and the modification of program elements. Benchmarking and measurement will allow OOG to determine whether its efforts in a particular initiative are producing results and whether to modify its approach or techniques. Key indicators of the condition of the environment should be identified and tracked to measure OOG's progress in improving environmental conditions. The number of unplugged orphan wells and the percentage increase in cover in identified watersheds, for example, may offer reliable indicators of program success in improving environmental conditions.

SUPPLEMENTAL REVIEW QUESTION II.4.g.

Briefly describe how information obtained from measurement of progress in achieving goals and objectives is used to alter or refine program activities. [2000 Guidelines 8.3]

2002 WEST VIRGINIA RESPONSE:

As information is gathered concerning progress measurement, the OOG seeks to identify successful processes and apply those to other, less successful areas. This assessment is undertaken collectively among OOG staff to promote consistency and allow for a, broader and more objective perspective. The OOG is striving to become more "team" oriented in its methodology for decision making in all facets of operation.

West Virginia OOG has also found that information sharing between 10GCC member states to be beneficial, as many issues tend to be common among states.

FINDING II.4.g:

The West Virginia program partially satisfies the criteria of the Guidelines. As noted previously, employee performance appraisals are used to evaluate, in part, whether goals and objectives have been met.

RECOMMENDATION II.4.g:

The Review Team recommends that a more formal approach to defining goals and objectives and evaluating whether they have been met should be developed by the OOG. It is recommended that data be collected and, in the preparation of budget objectives for the upcoming year, a review be made of the goals and objectives of the past budget year and an evaluation be conducted of the OOG's performance in meeting the goals and objectives. See also the discussion of benchmarking under Finding and Recommendation II.4.f, above.

SUPPLEMENTAL REVIEW QUESTION II.5.

II.5. Describe any **waste hauler training and certification** requirements for commercial transportation of E&P wastes in your state. Give reference to any statutory or regulatory provisions relating to this activity. [2000 Guidelines 4.2.5]

2002 WEST VIRGINIA RESPONSE:

The OOG has no such requirements. However, the West Virginia Department of Transportation (WVDOT) requires Commercial Drivers Licenses (CDL) for certain types and sizes of truck (91 CSR4) and the WV Public Service Commission has licensing authority over waste haulers to commercial landfills (150CSR9). All haulers to commercial UIC disposal wells are required to be affiliated with the commercial disposal well operation and no third party haulers are permitted for such facilities.

FINDING II.5:

West Virginia program meets the 2000 Guidelines for commercial waste haulers.

III. TECHNICAL CRITERIA

A-GENERAL

SUPPLEMENTAL REVIEW QUESTION III.1.

- III.1. Describe any **general performance or design standards** applicable to E&P waste management practices used in your state. Describe how these standards prevent contamination of ground water, surface water, soil or air; protect public health, safety and the environment; and prevent property damage. [2000 Guidelines 5.1.a]

2002 WEST VIRGINIA RESPONSE:

All disposal of E & P waste is designed to protect human health, safety and the environment and must be permitted through the OOG (Chapter 22, Article 6, Section 7) or approved for landfills, by the DWM (Chapter 22 Article, 15). Permits contain the various waste management practices and standards applicable to the particular waste disposal method. Examples of waste management practices typical for most disposal methods are waste characterization, treatment methodologies, storage and secondary containment requirements, and specific operating and discharge requirements.

Pits used during the drilling process to collect drill cuttings and fluids must be constructed, used and ultimately reclaimed in accordance with statute and regulation. They must not be left in such condition as to constitute a hazard or to prevent use of the surface for agricultural purposes after the expiration of the reclamation period (35CSR4-16 4). Pit fluid disposition is regulated through a Water Pollution Control Permit, which requires, among other things, sampling and testing to ensure contamination prevention, public health protection and property damage prevention.

Produced water disposal is typically addressed through permitted UIC facilities or in certain instances, NPDES permitted facilities. With both permits, strict standards must be met from sampling and testing of the waste fluid and effluent to mechanical integrity testing of disposal wells. All these requirements are in place for the protection of public health and the environment.

FINDING III. 1:

The West Virginia program meets the 2000 Guidelines. See the discussion of the need to address location of pits relative to groundwater table in Part 1, above, Finding and Recommendation III.2.

SUPPLEMENTAL REVIEW QUESTION III.2.

III.2. Describe any **waste segregation** requirements or other measures applicable to E&P waste management practices and facilities that ensure that hazardous waste is not disposed with exempt E&P waste. Give the regulatory citation. Does the state require or encourage segregation of exempt from non-exempt E&P waste? [2000 Guidelines 2.8.d and 5.1.b]

2002 WEST VIRGINIA RESPONSE:

Waste management and disposal permits delineate the specific wastes that may be managed under a particular permit and generally address waste that are not permitted under the permit. These permits do not allow mixing of exempt and non-exempt wastes. Additionally the OOG has reviewed gas transportation and handling facilities in the state and issued Declaratory Rulings for those facilities identifying the exempt and non-exempt waste at the facilities and the associated handling requirements applicable to each (35CSR4.7.3.b.3). All landfilled E & P wastes must be determined to be RCR,4 non-hazardous as defined in 40 CFR Part 261.

FINDING III.2:

The West Virginia program meets the 2000 Guidelines.

SUPPLEMENTAL REVIEW QUESTION III.3.

III.3. Are there any **air emission control** requirements applicable to E&P waste management facilities? If so, please describe and provide appropriate references. [2000 Guidelines 5.1.a and 5.10.2.2.c]

2002 WEST VIRGINIA RESPONSE:

While there are no specific requirements, the OOG does address when encountered, on a site-specific basis, situations which may have an air impact. Hydrogen sulfide has been encountered in isolated areas in West Virginia and in such instances the Permissible Exposure Limits (PEL) established by Occupational Safety and Health Administration (OSHA) are enforced. Regarding landfills, the DWM does have requirements for methane emissions.

FINDING III.3:

The West Virginia program meets the 2000 Guidelines.

B - PITS

SUPPLEMENTAL REVIEW QUESTION III.4.

III.4. Do you have specific technical criteria in place in your state for the following **types of pits**? If so, please cite the reference for such criteria. [2000 Guidelines 5.5. 1]

2002 WEST VIRGINIA RESPONSE:

<u>Type</u>	<u>Reference</u>
___ Reserve pits	<i>Drilling Pit General Permit, BMP Manual, 35CSR4-16.4</i>
___ Production pits	<i>see below</i> _____
___ Skimming/settling pits	<i>not used</i> _____
___ Produced water pits	<i>prohibited</i> _____
___ Percolation pits	<i>prohibited</i> _____
___ Evaporation pits	<i>prohibited</i> _____
___ Special purpose pits	<i>see below</i> _____
___ Blowdown pits	<i>prohibited</i> _____
___ Flare pits	<i>contained in the site safety plan</i>
___ Emergency pits	<i>Drilling Pit General Permit, BMP Manual, 35CSR4-16.4</i>
___ Basic sediment pits	<i>prohibited</i> _____
___ Workover pits	<i>Drilling Pit General Permit, BMP Manual, 35CSR4-16.4</i>
___ Other	<i>N/A</i> _____

FINDING III.4:

The West Virginia Program meets the 2000 Guidelines. The Review Team finds that the West Virginia Erosion and Sediment Control Field Manual is an excellent tool for assuring that environmental impacts of E & P activities are minimized. Although outside the scope of the Guidelines, the Review Team acknowledges the value of the booklet entitled, "Managing Oil and Gas Wellsites for Wildlife," as developed through a cooperative effort of the West Virginia agency and the regulated community, and encourages OOG to make it available on its website.

SUPPLEMENTAL REVIEW QUESTION III.5.

III.5. What **notification** is required prior to construction and operation of rule-authorized pits? [2000 Guidelines 5.5.2.d]

2002 WEST VIRGINIA RESPONSE:

West Virginia has no rule-authorized pits, as all pits must be permitted [under general or individual permits for this purpose].

FINDING III.5:

The West Virginia program meets the 2000 Guidelines.

SUPPLEMENTAL REVIEW QUESTION III.6.

III.6. Briefly describe any provisions concerning the issuance and use of **emergency permits** for pits. Give reference to the applicable statutory or regulatory sections. [2000 Guidelines 5.5.2.e]

2002 WEST VIRGINIA RESPONSE:

Emergency pits can be constructed, on a site-specific basis, only after receiving prior approval from the OOG inspector (Construction and Reclamation BMP Manual). Any emergency pit is subject to all the same requirements as regular reserve pits.

FINDING III.6:

The West Virginia program meets the 2000 Guidelines.

SUPPLEMENTAL REVIEW QUESTION III.7.

III.7. What are the requirements for the **placement of reserve pits** relative to drilling equipment? [2000 Guidelines 5.5.3.g]

WEST VIRGINIA RESPONSE:

Section 7, pages 21 and 22 of the Construction and Reclamation BMP Manual, provides specific requirements for the placement of reserve pits relative to drilling equipment. Additionally, wells requiring a site safety plan include further requirements for the placement of reserve pits.

FINDING III.7:

The West Virginia program meets the 2000 Guidelines.

C - LANDSPREADING (Non-Commercial)

SUPPLEMENTAL REVIEW QUESTION III.8.

III.8. Give reference for any statutory or regulatory **definitions of, or prohibitions against, landspreading** that are applicable in your state. [2000 Guidelines 5.6.1.a]

2002 WEST VIRGINIA RESPONSE:

Definitions are contained in the Drilling Pit General permit which identifies the permitted materials as those generated during exploratory/developmental drilling, well treatment operations, plugging operations and reworking of wells. The Associated Waste General Permit also addresses landspreading as a treatment/disposal for some types of wastes.

FINDING III.8:

The West Virginia program meets the 2000 Guidelines.

SUPPLEMENTAL REVIEW QUESTION III.9.

III.9. Is on-site **landspreading of waste containing NORM** above action levels prohibited? [2000 Guidelines 5.6.1.c]

2002 WEST VIRGINIA RESPONSE:

If a waste contained NORM above active levels, landspreading would be prohibited.

FINDING III.9:

The West Virginia program meets the 2000 Guidelines. Two sites are currently being evaluated for NORM under the West Virginia voluntary remediation program.

SUPPLEMENTAL REVIEW QUESTION III.10.

III.10. Briefly discuss each of the following **operational requirements** as they apply to landspreading (give reference to any statutory or regulatory requirements): [2000 Guidelines 5.6.3]

2002 WEST VIRGINIA RESPONSE:

All the operational requirements below are found in the Drilling Pit and Associated Waste General Permits.

a. Removal of free oil

The Drilling Pit and the Associated Waste General Permits require the removal of free oil.

b. Allowable pH range of waste being disposed

For the Drilling Pit General Permit, 6-10. No pH range established for the Associated Waste General Permit.

c. Spreading of solids and incorporation into the soil

The Associated Waste General Permit requires delineation of the contaminated area and along with the site registration for the permit, the permittee must provide a description of their treatment methodology, which includes the spreading of solids and incorporation into the soil.

d. Application rates, methods and practices for liquids

Under the Drilling Pit General Permit, the discharge of liquids shall be conducted only on vegetated land. It may not be conducted on saturated, frozen or impermeable ground. The discharge shall be applied at a rate that shall not cause ponding, erosion or run-off into the water of the state. Effluent limits are established for iron, dissolved oxygen, settleable solids, chloride, aluminum, oil and grease, and manganese.

e. Addition of nutrients for biodegradation

Under the associated Waste General Permit, the description of treatment methodologies shall identify the addition of nutrients for biodegradation.

f. Waste limitations (e.g., Electrical Conductivity, Exchangeable Sodium Percentage, Sodium Absorption Ratio)

Specific limitations are addressed in the Drilling Pit General Permit and on a site-specific basis for the associated Waste General Permit.

g. Limitations on waste-soil ratio by oil and grease content

The Drilling Pit General Permit requires that when any oil and grease levels are above 15 milligrams/liter (mg/l) the operator must submit an explanation of the cause of such level and the steps to be taken to reduce the levels. The Associated Waste General Permit, requires treatment to a level of 500 ppm for total petroleum hydrocarbons (tph).

h. Limits on salt and hydrocarbon content in final waste-soil mixture

Final hydrocarbon content in waste soil mixture must be 500 ppm or below. Salt content in the final waste soil mixture is not required to be determined because effluent limitations are set for salt content of a discharge through the general permit.

i. Enhanced techniques available to meet final criteria for salt and hydrocarbons

The use of any enhanced techniques must be described in the treatment methodology contained in the associated waste permit.

j. Soil analysis required prior to landspreading and/or after site closure

The area of contamination must be delineated by soil analysis prior to treatment and must achieve the 500 ppm at site closure in accordance with the provisions of the associated waste general permit.

k. Any additional criteria for landspreading special wastes

N/A

FINDING III.10:

The West Virginia program meets the 2000 Guidelines. The 2002 Review Team notes with approval the fact that the standard for total petroleum hydrocarbons in soil (500 ppm) (see 10.g.) is significantly more protective than the criteria recommended by the Guidelines (10,000 ppm oil and grease).

D - BURIAL AND LANDFILLING (Non-Commercial)

SUPPLEMENTAL REVIEW QUESTION III.11.

III.11. Give reference for any statutory or regulatory **definitions of or prohibitions against burial or landfilling** which are applicable in your state. [2000 Guidelines 5.7.1]

2002 WEST VIRGINIA RESPONSE:

The only burial allowed is for residues left in the pit after discharge of fluids as provided for in the Pit General Permit. While there are no statutes or regulation prohibitions against burial or landfilling, any ultimate disposal of a waste must be permitted (WV Code 22-6-7). It is the policy of the OOG to prohibit the burial or landfilling of waste beyond what is permitted under the Pit General Permit.

FINDING III.11:

The West Virginia program meets the 2000 Guidelines.

SUPPLEMENTAL REVIEW QUESTION III.12.

III.12. Do you have specific **regulatory requirements** for burial or landfilling of E&P wastes? If so, give reference to the applicable statutory or regulatory sections. [2000 Guidelines 5.7.2]

2002 WEST VIRGINIA RESPONSE:

The Pit General Permit (G.4(f)), provides requirements for the burial of residues left in pits. After discharge of pit fluids, the remaining material shall be promptly covered with adequate soil to prevent contact with the surface runoff and reduce the potential for pollution of surface water.

FINDING III.12:

The West Virginia program meets the 2000 Guidelines.

E - ROADSPREADING

SUPPLEMENTAL REVIEW QUESTION III.13.

III.13. Give reference for any statutory or regulatory **definitions of or prohibitions against roadspreading** which are applicable in your state. [2000 Guidelines 5.8.1]

2002 WEST VIRGINIA RESPONSE:

Chapter 22, Article 6, Section 7 requires a permit for the discharge of any waste. It is the policy of the OOG at the present time that roadspreading is not viable and therefore prohibited.

FINDING III.13:

The West Virginia program meets the 2000 Guidelines.

SUPPLEMENTAL REVIEW QUESTION III.14.

III.14. Briefly discuss each of the following **operational requirements** as they apply to roadspreading (give reference to any statutory or regulatory requirements): [2000 Guidelines 5.8.3]

N/A

- a. testing criteria that are applicable for wastes proposed for roadspreading (e.g., ignitability, density, metal content, consistency with approved road oils)

N/A

- b. application rates

N/A

- c. buffer zones

N/A

d. produced water testing (for similarity to approved commercial products)

N/A

FINDING III.14:

The West Virginia program meets the 2000 Guidelines.

F - TANKS

SUPPLEMENTAL REVIEW QUESTION III.15.

III.15. Give references for any statutory or **regulatory definitions** of E&P waste tanks used in your state. How are the tanks that treat, store or dispose of E&P waste regulated differently, if any, from tanks used exclusively for processing or storage of petroleum products? [2000 Guidelines 5.9]

WEST VIRGINIA RESPONSE:

West Virginia Title 35, Series 1 provides requirements for all tanks whether used for storage and disposal of E & P wastes or for processing and storage of petroleum products.

FINDING III.15:

The West Virginia program meets the 2000 Guidelines.

SUPPLEMENTAL REVIEW QUESTION III.16.

III.16. Describe any requirements pertaining to the **location, use, capacity, age and construction of E&P waste tanks**, including registration, inventories, etc. [2000 Guidelines 5.9.2.a]

2002 WEST VIRGINIA RESPONSE:

All tanks used for the storage of E & P wastes shall be constructed of material that is compatible with the material stored and the conditions of storage. They shall be provided with a secondary means of containment and be inspected on a periodic basis. Measures to prevent spills shall be properly engineered and may include such things as adequate tank capacity, overflow equalizing lines, vacuum protection, sensors and periodic examination of production equipment (35CSRI-7).

FINDING III.16:

The West Virginia program meets the 2000 Guidelines.

SUPPLEMENTAL REVIEW QUESTION III.17.

III.17. Describe any state program pertaining to **pollution prevention requirements relating to tanks**. [2000 Guidelines 5.9.2.c]

2002 WEST VIRGINIA RESPONSE:

Title 35, Series 1, Section 7 describes the state program for pollution prevention requirements relating to tanks. Such requirements include construction, secondary, containment, inspection, monitoring and maintenance. In addition to those requirements described in number 16 above, operators are required to have at each production facility, appropriate containment and/or diversionary structures or equipment to prevent discharged oil or other pollutants from reaching the waters of the state.

FINDING III.17:

The West Virginia program meets the 2000 Guidelines. Although outside the scope of the guidelines, the Review Team applauds the determination of the OOG under certain circumstances to require the tethering of tanks to minimize releases of oil and other fluids during floods.

SUPPLEMENTAL REVIEW QUESTION III.18.

III.18. Briefly discuss each of the following **operational requirements** as they apply to E&P waste tanks (give reference to any statutory or regulatory requirements): [2000 Guidelines 5.9.3]

2002 WEST VIRGINIA RESPONSE:

a. corrosion protection

Operators are required to have a maintenance program which includes corrosion protection provisions, as well as the requirements for compatibility of tanks with material stored (35CSRI - 7. 10).

b. structural integrity

Tanks are required to be constructed in a manner compatible with material stored (35CSRI-7.4). Visual examinations of tanks are required

for condition and need for maintenance (35CSRI-7.6). Adequate vacuum protection is required to prevent tank collapse (35CSRI- 7.7c).

c. protection against overtopping

Operators shall have one or more of the following: adequate tank capacity to ensure that the tank will not overflow, overflow equalizing lines between tanks or high level sensors (35CSRI - 7.7).

d. secondary containment/leak detection

All operators shall have appropriate secondary containment and/or diversionary structures or equipment to prevent discharged oil or other pollutants from reaching water of the state. Operators must have a periodic inspection program of tanks for leak detection (35CSRI-7).

e. covers or measures to prevent entry of wildlife

Areas may be required to be fenced off or covered on a site specific basis based upon a field determination by the inspector that any open area may present a danger.

f. hydrogen sulfide emission control

Any facilities in which H₂S emissions may occur at detectable concentrations, are required to have treatment and controls on a site specific basis.

FINDING III.18:

The West Virginia program meets the 2000 Guidelines.

SUPPLEMENTAL RESPONSE NO. III.19.

III.19. Describe any tank **removal and closure** requirements and provide reference to statutory or regulatory requirements. [2000 Guidelines 5.9.4]

2002 WEST VIRGINIA RESPONSE:

Chapter 22, Article 6, Section 30, requires that, within 6 months after a well is plugged, the operator remove all production and storage structures and properly reclaim the site.

FINDING III. 19:

The West Virginia program meets the Guidelines.

G - COMMERCIAL AND CENTRALIZED DISPOSAL FACILITIES

SUPPLEMENTAL REVIEW QUESTION III.20.

III.20. What agency (agencies) in your state has (have) regulatory **jurisdiction** over these facilities? [2000 Guidelines 5.10.1]

2002 WEST VIRGINIA RESPONSE:

West Virginia has no commercial disposal facilities as defined in the STRONGER guidelines. West Virginia Department of Environmental Protection, Office of Oil and Gas has regulatory jurisdiction over UIC facilities and NPDES sites that meet the definition of centralized disposal facilities.

FINDING III.20:

West Virginia has no commercial disposal facilities as defined by the 2000 Guidelines. OOG does have jurisdiction over centralized facilities. See also 1.21 and III.22.

SUPPLEMENTAL REVIEW QUESTION III.21.

III.21. Give reference for any **statutory or regulatory definitions** for commercial and for centralized disposal facilities. [2000 Guidelines 5.10.1]

None

FINDING III.21:

West Virginia has no commercial disposal facilities as defined by the 2000 Guidelines. West Virginia regulates centralized facilities in the same manner as other disposal facilities.

SUPPLEMENTAL REVIEW QUESTION III.22.

III.22. Do you have any centralized or commercial E&P waste disposal facilities? **How many, and of what type?** Does this include any surface facilities at UIC sites? If so, how many are associated with UIC sites? [2000 Guidelines 5.10.1]

2002 WEST VIRGINIA RESPONSE:

West Virginia has no commercial E&P waste disposal facilities. We do have 60 UIC disposal sites with surface facilities and 10 active NPDES disposal sites for produced water from stripper oil wells.

FINDING III.22:

West Virginia refers to certain UIC wells as "commercial" facilities, which are defined by the 2000 Guidelines as "centralized" facilities. The OOG currently has no commercial facilities as defined in the 2000 Guidelines, nor does it have specific regulations for commercial or centralized facilities. Surface facilities at centralized facilities are permitted in the same manner as surface facilities at producing wells.

SUPPLEMENTAL REVIEW QUESTION III.23.

III.23. **What wastes are acceptable** for disposal? Do any of these facilities accept RCRA nonexempt wastes or wastes from other than oil and gas exploration and production activities? [2000 Guidelines 5.10.2]

2002 WEST VIRGINIA RESPONSE:

Only RCRA exempt class II fluids are acceptable for disposal at UIC sites. Regarding the NPDES sites, only produced water from stripper oil wells are accepted for disposal. RCRA nonexempt wastes and non-E&P wastes are not accepted at UIC and NPDES sites.

FINDING III.23:

The West Virginia program meets the 2000 Guidelines.

SUPPLEMENTAL REVIEW QUESTION III.24.

III.24. What are the **disposal and treatment methods** employed at these facilities? [2000 Guidelines 5.10.2]

2002 WEST VIRGINIA RESPONSE:

For NPDES facilities, disposal and treatment consists of ph adjustment, aeration, settling, filtration and dilution with disposal into receiving streams.

FINDING III.24:

The West Virginia program meets the 2000 Guidelines.

SUPPLEMENTAL REVIEW QUESTION III.25.

III.25. What elements are required as part of the **permit** application (e.g., siting plan, construction plan, operating plan, closure plan, etc.)? [2000 Guidelines 5.10.2.2.a]

2002 WEST VIRGINIA RESPONSE:

Siting, construction, operating and closure plans are all part of the permit applications.

FINDING III.25

The West Virginia program meets the 2000 Guidelines.

SUPPLEMENTAL REVIEW QUESTION III.26.

III.26. If permit applications are required for siting, do they include: [2000 Guidelines 5.10.2.2.b]

Y Names, addresses and phone numbers of the owners or operators of the facility?

N Names, addresses and phone numbers of owners or occupants of properties in close proximity of the site, or any other persons who may reasonably be adversely affected by releases from the site?

Y Topographic map that shows all highways, water courses, water wells, and dwellings within one mile of the site?

Y Geologic, hydrologic, engineering, chemical and any other data or information that demonstrate disposal of wastes and operation of the facility will not contaminate fresh water, the surrounding soils or air, endanger public health, safety or the environment, or cause property damage?

N Average annual precipitation and evaporation rate at the disposal site? (*evaporation is not an acceptable disposal method due to high annual precipitation*)

Y Nature and permeability of vadose zone; description of the extent of underlying aquifer(s), and depth to ground water; direction of groundwater movement; data on water quality of nearby surface waters and underlying

aquifer(s) Prior to commencement of operations; and points of past or current use of surface or groundwater?

Y Proof that all public notice requirements have been met?

Y Certification by an authorized representative of the applicant that information submitted in the application is true, accurate and complete to the best of the applicant's knowledge?

Y Construction plan that includes detailed engineering drawings and diagrams of engineered disposal facilities?

FINDING III.26:

The West Virginia program meets the 2000 Guidelines.

SUPPLEMENTAL REVIEW QUESTION III.27.

III.27. Describe any **construction** requirements that will minimize or prevent releases to surface water, ground water, soil and air. In the case of reclamation facilities, describe any such requirements that apply to waste before and after reclamation. [2000 Guidelines 5.10.2.2.c]

2002 WEST VIRGINIA RESPONSE:

Construction requirements include the following: secondary containment, flood protection, fencing and locks for security and switches and sensors for automatic shut down.

FINDING III.27:

The West Virginia program meets the 2000 Guidelines.

SUPPLEMENTAL REVIEW QUESTION III.28.

III.28. If permit applications are required for **operating**, do they include: [2000 Guidelines 5.10.2.2.d]

Permit elements are described and addressed in the applicable permit.

An operating plan?

Y Volume, rate and type of material to be disposed?

- Y Identification of the specific facilities that will be used to dispose of each waste stream (e.g., unlined or lined pits, tanks, etc.)?
- Y Contingency plan for reporting, responding to and cleaning up spills, leaks and releases of wastes or waste byproducts, including provisions for notifying emergency response authorities and for taking operator-initiated emergency response actions?
- N Ground water monitoring where wastes are managed on the land? (*West Virginia does not have any permitted centralized disposal facilities where wastes are managed on land.*)
- Y Plan for routine inspection, maintenance, and monitoring to ensure and demonstrate compliance with permit requirements, and in the case of land farming, ensure that organic wastes are effectively treated?
- N Specific engineering plans for preventing or minimizing the generation or emission of hydrogen sulfide gas? (*There has been no known occurrences of hydrogen sulfide gas emissions at any centralized disposal facilities*)
- Y A plan for the onsite sampling and/or testing to assure that RCRA Subtitle C or other wastes prohibited by the regulatory agency for disposal are not disposed at such a facility? (*Onsite testing is not required at NPDES facilities, however, the operator is required to certify that all disposed wastes are exempt under RCRA Subtitle C requirements*)
- Y Characterization of wastes accepted at the facility?
- Y Plan for periodic removal and subsequent handling of free oil? (*At UIC surface storage facilities, most free oil is already removed prior to arrival and any remaining may be sold as product or disposed of through the UIC injection process at the operator's discretion*)
- Y Security plan for the facility?

FINDING III.28:

The West Virginia program meets the 2000 Guidelines.

SUPPLEMENTAL REVIEW QUESTION III.29.

III.29. Describe the **closure and post-closure monitoring** and maintenance requirements applicable to commercial facilities, including duration of post-closure care and financial assurance release schedules. [2000 Guidelines 5.10.2.2.e]

N/A

FINDING III.29:

There are no facilities in West Virginia to which the 2000 Guidelines would apply.

SUPPLEMENTAL REVIEW QUESTION III.30.

III.30. For wastes not moved by pipeline, is there a requirement for **waste tracking**? If so, does it require: [2000 Guidelines 5.10.2.3]

Y A multi-part form that contains the names, addresses and phone numbers of the waste generator (producer), hauler, and disposal facility operator?

Y Description and volume of the waste?

N Time and date it was collected, hauled and deposited at the disposal facility?

Y Time requirement for maintenance of the form?

N Attesting that no illegal dumping occurred?

N Certification by the hauler and disposal facility operator that no wastes were dumped illegally or at a location or facility not designated by the generator or permitted to receive the waste, and that no prohibited or hazardous wastes were mixed with the waste during transport?

N Reporting of any discrepancies in waste descriptions, volumes or place of origin based on personal observations or information contained in the three-part form?

Waste tracking is required for hauling to UIC facilities in accordance with the UIC permit.

FINDING III.30:

The West Virginia program partially meets the 2000 Guidelines. The 1990 Guidelines recommended tracking of waste disposed at commercial facilities only. The 2000 Guidelines similarly recommend tracking of waste disposed at commercial facilities [5.10.2.3], but also recommend tracking of all brine produced and injected: Section 4.2.8.1 states, "States are encouraged to track and maintain the minimum data set described in the IOGCC publication Guidelines for States: Exploration and Production Data Management. (November 1996)." The "minimum data set" established in the 1996 Production Data Management Guidelines includes "barrels of water produced" and "barrels of water injected."

RECOMMENDATION III.30:

The Review Team recommends the OOG require operators to report volumes of all water produced and disposed of, including off-site disposal of E & P wastes sent out of state.

SUPPLEMENTAL REVIEW QUESTION III.31.

III.31. Are **waste haulers** permitted or licensed based on a showing of basic knowledge of regulatory requirements? [2000 Guidelines 5.10.2.3]

2002 WEST VIRGINIA RESPONSE:

There are no such permits or licenses, as the OOG does not allow third party haulers to transport waste. Consequently, knowledge of regulatory requirements is expected as they relate to all OOG statutes and regulations.

FINDING III.31:

West Virginia does not allow third party waste haulers. The West Virginia Program meets the 2000 Guidelines.

IV. ABANDONED SITES

Permits and survey plats for oil and gas wells were not required until 1929. In 1995 the West Virginia Geological and Economic Survey did a search of historical records to identify unplugged inactive wells drilled prior to 1929, and found records for approximately 35,000 wells. From these records the OOG randomly selected a number of wells for field evaluation. For roughly 50% of these wells, no actual well bore or casing was found at the recorded location. If the historical records are correct, then the remaining 50 percent of the wells could have been properly plugged (at least by the standards of the day) or they could just have been left alone and the vegetation and earth covered them. About 25% of the randomly selected wells were operating or properly plugged. About 25% of the randomly selected wells appeared inactive, did not appear to be plugged, and had no responsible operator. These wells are referred to herein as "orphaned" wells, although that term is not used in West Virginia statutes or rules. If the findings from the randomly selected wells hold true for all pre-1929 wells, then approximately 9,000 wells could be located and found to be abandoned with no responsible party.

By one official estimate, there are approximately 10,000 post 1929 wells that are not in production and that have no approved bona fide future use. Of those, approximately 60% are associated with an operator, and 40% are orphaned. However, exact figures on the number of orphan wells are not available.

SUPPLEMENTAL REVIEW QUESTION IV.1.

IV.1. Does your state have a program to **inventory, prioritize and remediate** (as necessary) abandoned oil and gas sites? [2000 Guidelines 6. 1]

2002 WEST VIRGINIA RESPONSE:

There have been various efforts on the part of the OOG to inventory abandoned wells. The most extensive was completed by the West Virginia Geological and Economic Survey in 1995. The focus of this study was to, through file research, identify any well that had been drilled but had no evidence of current activity or of having been plugged. Additionally, all permitted wells are identified in the OOG database as to their status (i.e. abandoned, plugged, active).

Field investigations/inspections of abandoned wells are initiated by complaints and through inspector work priorities and initiatives. Once inspections are completed, the information is submitted to the office staff for prioritization, which is required by statute and regulation. Remediation, through plugging and reclamation, is done as funding will allow. Under certain circumstances, the OOG will contact the National

Response Center NRC and seek assistance through the federal Oil and Pollution Act (OPA).

FINDING IV.1

The West Virginia program meets the 2000 Guidelines.

RECOMMENDATION IV.1

Consistent with other recommendations regarding staffing, the 2002 Review Team recommends that the personnel of the OOG be increased to address existing abandoned wells and minimize the chances of additional wells from becoming abandoned in the future, particularly to make the bona fide future use program more effective.

SUPPLEMENTAL REVIEW QUESTION IV.2.

IV.2. Please provide reference to any **definitions** pertaining to abandoned sites or your abandoned well site program, including the types of facilities included in the definitions. [2000 Guidelines 6.2]

2002 WEST VIRGINIA RESPONSE:

Any well completed as a dry hole or not in use for a period of twelve consecutive months shall be presumed to have been abandoned (WV Code 22-6-19). Related definitions are found in Chapter 22 Article 10, the Abandoned Well Act, and 35CSR5 and 35CSR6

FINDING IV.2

The West Virginia definition of “abandoned” is sufficient to accomplish the intent of the 2000 Guidelines.

As noted above, abandoned wells are identified by statute in West Virginia. Additionally, a well is not considered abandoned if the operator satisfactorily demonstrates to the DEP that the well has a bona fide future use. [WV Code, Section 22-6-19].

The differences between the 2000 Guidelines definition of “abandoned” and the West Virginia definition are:

1. For a formerly-productive well that is not plugged, the 2000 Guidelines define the well as abandoned only if it poses an actual or potential threat to public health or the environment. The West Virginia Code defines the well as abandoned if it has not been used for twelve consecutive months.

2. Under the 2000 Guidelines, a well is defined as abandoned only if no responsible party can be located, or the responsible party has failed or refused to take necessary actions to abate the threat. There is no such criterion under the West Virginia Code. However, the West Virginia Code requires the operator to promptly plug an abandoned well. The DEP may plug an abandoned well after proper notice, and may recover costs from the owner or operator of record, if any exists.

The West Virginia definition of “abandoned” is broader than that of the 2000 Guidelines. Clearly, unlike the use of the term in the 2000 Guidelines, in West Virginia a well can be declared abandoned even where there is no actual or potential threat to public health or the environment posed by the well. It is a matter of judgment as to the conditions under which an unused well may constitute a “threat to public health or the environment” under the 2000 Guidelines, although most people would agree that most wells may pose a threat if left unplugged for an extended period of time. Further, it might be argued that an abandoned well in West Virginia could be causing damage to the environment or public health, but would not be required to be plugged unless 12 months of non-production had elapsed. However, the DEP has other means to address such a situation. The WV Code requires the DEP to issue an order requiring abatement of any violation found, whether the well meets the West Virginia definition of abandoned or not. If the violation creates an imminent danger to a person or a fresh water supply, the DEP shall order the operator to cease operations until the danger is abated (WV Code Section 22-6-3). In addition, the DEP may file for injunctive relief against any person for a violation of the WV Code, order, or rule.

SUPPLEMENTAL REVIEW QUESTION IV.3.

IV.3. Briefly describe your program for **identification, inventory and ranking** of abandoned sites. [2000 Guidelines 6.3]

2002 WEST VIRGINIA RESPONSE:

Abandoned wells are typically identified in the field through complaint investigations and random inspections. They can be identified in the database based on their status as a consequence to the annual reporting requirements. Once identified and inventoried, they are ranked by the information obtained during the field inspection.

Statute and regulation require the ranking to be based, fundamentally, on the well's threat to human health, safety and the environment and whether it is an impediment to the development of mineral resources. Wells that pose the greatest threat are placed in Classification I followed in lower priority by Classification II and Classification III.

FINDING IV.3

The West Virginia program meets the 2000 Guidelines. The OOG is commended for the enormous strides it has made in identifying, locating, and inventorying historically abandoned well sites. There will be more work to do.

SUPPLEMENTAL REVIEW QUESTION IV.4.

IV.4. Briefly describe **funding** mechanisms available to the state for abandoned site remediation. [2000 Guidelines 6.4]

2002 WEST VIRGINIA RESPONSE:

The Oil and Gas Reclamation Fund was established to address the plugging and reclamation of abandoned wells and wellsites. One hundred dollars from new well permit fees is allocated to this fund, as are bond forfeitures.

Through these two sources, the OOG has historically taken in approximately \$100,000 per year.

Over the past few years, the OOG has accessed monies for oil clean up through the OPA (Oil Pollution Act), and has plugged abandoned wells responsible for such incidents. Funding through OPA can only be accessed in cases involving crude oil pollution, or the threat of crude oil pollution, into navigable waterways.

FINDING IV.4

West Virginia has access to several sources of funding for remediation (including plugging) of abandoned wells. Permit fee revenue to the Oil and Gas Reclamation Fund varies, of course, according to the number of new well permits issued; in recent years, between 900 and 1,400 new well permits have been issued per year. Money from bond forfeitures also varies from year to year, depending on the number of violations with forfeiture actions taken by the OOG. West Virginia requires operators to post a \$5,000 individual well bond or a \$50,000 blanket bond. As noted above, the OOG typically receives about \$100,000 per year from permit fees and bond forfeitures.

The state also receives funds through the Oil Pollution Act. In addition OOG has explicit authority to recover costs of plugging an abandoned well if a solvent responsible operator can be found.

In recent years, the OOG has plugged an average of 25 wells per year with OPA funds, and two wells per year with money from the Oil and Gas Reclamation Fund. The minimum cost to plug a well is \$8,000 to \$10,000; the high-priority problem wells that OOG has plugged recently have cost \$30,000 to \$35,000 each. Considering the large number of abandoned wells that may need to be plugged, state funding is inadequate.

RECOMMENDATION IV.4

The 2002 Review Team recommends that the DEP, at the Secretary level, look at alternative, supplementary means of securing funding for site and well remediation. Possible sources of additional funding may include general revenue funds, financial assurance mechanisms, federal grants, fees, penalties, etc.

SUPPLEMENTAL REVIEW QUESTION IV.5.

IV.5. Briefly describe the criteria used in your **abandoned site prioritizing** system. [2000 Guidelines 6.5]

2002 WEST VIRGINIA RESPONSE:

As stated earlier, prioritization is based on the well's threat to human health, safety and the environment and if it is an impediment to the development of mineral resources. General risk assessment/evaluation criteria used to make this determination are such things as visual safety or health hazards, surface leakage and amount/area affected, evidence of ground water contamination in the vicinity, condition of surface casing and production casing, and planned or active mineral resource development in the area. These criteria will determine the Classification of the well and it is further prioritized using information such as the distance of the well to drinking water sources, the number of people living in the area of the well, the proximity to streams, the age of the well, and the amount of time the well has been abandoned.

FINDING IV.5

The OOG has a rule for prioritizing wells for remediation that generally meets the 2000 Guidelines. The Guideline criteria for prioritization include a criterion for considering “environmentally sensitive areas,” which is not a criterion in the West Virginia program.

SUPPLEMENTAL REVIEW QUESTION IV.6.

IV.6. What are the state's abandoned site remediation goals? How is progress measured? [2000 Guidelines 6.5.1]

2002 WEST VIRGINIA RESPONSE:

The general goal is to locate and evaluate each abandoned well site and mitigate those that are a threat to human health, safety or the environment. Initially, the OOG will expect the operator to respond to any remediation situation and take the appropriate action. If the operator fails to do so, or there is no known operator, the OOG will respond and take the necessary actions as funding will allow. Progress is essentially measured through the amount of funding at our disposal and hence the number of sites remediated.

FINDING IV.6:

The abandoned well initiative OOG has undertaken is commendable. However, the Team offers the same comment regarding funding as Finding IV.4, above. Additional resources should be put into remediation.

SUPPLEMENTAL REVIEW QUESTION IV.7.

IV.7. Briefly describe the state's program relating to establishing **liability** for the remediation of abandoned sites. Provide references to any statutory or regulatory allocation of responsibility. [2000 Guidelines 6.5.2]

2002 WEST VIRGINIA RESPONSE:

Under the definition of "abandoned" in WV statute, abandoned sites may actually have responsible parties or operators. In these instances, the operators, per WV Code Chapter 22 Articles 6 and 10, are considered to have the liability associated with such sites. If no operator exists, and the well is considered to be "orphaned," the State has the responsibility to clean up sites per the requirements of WV Code Chapter 22 Articles 6 and 10 and 35CSR4 and 35CSR6

If government funds are expended for site remediation, the OOG will directly or through a contractor, research pertinent files and databases in an effort to locate the responsible party. Depending on the nature and severity of the site contamination, this search may be done prior to expenditures.

FINDING IV.7:

The West Virginia program meets the 2002 Guidelines. The OOG has sufficient statutory authority to establish liability for remediation of abandoned sites. A well that has not been producing for twelve months has to be plugged unless the operator submits sufficient information and data to establish a bona fide future use 35 CSR 5. Another method used by the OOG to prevent wells with responsible operators from becoming orphaned wells is to withhold approval of transfer of a non-complying well until the well is brought into compliance.

SUPPLEMENTAL REVIEW QUESTION IV.8.

IV.8. Please provide reference to any **standards for abandoned site remediation**. [2000 Guidelines 6.6]

2002 WEST VIRGINIA RESPONSE:

Under statute and regulation (22-6-24, 35CSR4-13) wells must be plugged in a manner which will completely seal the hole and consequently minimize any threat to public health and the environment. As part of this requirement, all fluid/gas bearing zones must be separated by cement plugs and all retrievable casing must be removed. Standards for onsite remediation of crude oil contaminated soils are found in the Associated Waste Permit for Total Petroleum Hydrocarbons (tph) (500 ppm max.).

FINDING IV.8

The West Virginia program meets the 2000 Guidelines. The state has excellent requirements for plugging (well bore remediation) and site reclamation (site remediation) in its statutes and rules.

SUPPLEMENTAL REVIEW QUESTION IV.9.

IV.9. Briefly describe the state's **abandoned well remediation** program, including any flexibility allowed in plugging procedures. [2000 Guidelines 6.6.1]

2002 WEST VIRGINIA RESPONSE:

Once a well becomes a priority for plugging by the OOG, the job goes out to bid to contractors. As with all well work, a permit is obtained which outlines the methodology to be followed during the plugging and reclamation process. The Abandoned Well Act provides for abandoned well plugging by "interested" parties, which includes any parties which

may be adversely affected by an abandoned well. The director may authorize bonding to such interested parties in lesser amounts than those required by well operators. The interested party may recover all reasonable plugging costs from the well operator.

FINDING IV.9

West Virginia is to be commended for its innovation in remediating abandoned and orphaned wells. OOG's approach of time and materials contracting for plugging projects is one example of their flexibility and adaptability to changed circumstances to get the most benefit for their efforts and resources.

SUPPLEMENTAL REVIEW QUESTION IV.10.

IV.10. Briefly describe the state's program for **surface remediation** of abandoned sites, including any requirements regarding present or future land use and consultation with surface owners. [2000 Guidelines 6.6.2]

2002 WEST VIRGINIA RESPONSE:

Within six months of the date of well plugging, the site is required to be reclaimed in accordance with the standards outlined in the OOG Erosion and Sediment Control manual, WV Code Chapter 22 Article 6 and 35 CSR4. This includes the removal of all production and storage structures and equipment. The surface owner receives a copy of the plugging permit application and may file comments relating to such activity. They may request of the permittee, certain types of vegetation to be sown and such things as monument burial depending on how they wish to use the land.

FINDING IV.10

The West Virginia program meets the 2000 Guidelines. The Review Team commends OOG for its Erosion & Sediment Control Manual.

SUPPLEMENTAL REVIEW QUESTION IV.11.

IV.11. What is the program for **maintenance of records** of remediated sites? How is public access assured? [2000 Guidelines 6.6.3]

2002 WEST VIRGINIA RESPONSE:

All well work, which typically involves site work, requires a permit that outlines the reclamation requirements. Site work which may not specifically be part of well work falls under the discretion and scrutiny of

OOG staff. An associated waste permit may be obtained in these cases. All documents pertaining to the activity of this site, including inspection reports, will be kept on file and maintained at the OOG. The OOG file is considered to be the official file. Information initially received on paper is periodically transferred to microfiche.

All OOG file information is considered public information and can be requested for public review and copies. The DEPs Public Information Office (PIO), works as a liaison between the program offices and their customers, including the public. They have an obligation to ensure that all requested information is provided accurately and timely. Additionally, through the DEPs website, a vast amount of information on file at the OOG can be accessed at the convenience of the requesting party and without involving OOG staff.

FINDING IV.11

The West Virginia program meets the 2000 guidelines.

SUPPLEMENTAL REVIEW QUESTION IV.12.

IV.12. Describe any **public participation** activities associated with the abandoned sites program, including public access to information, public participation in rulemaking associated with the program, and participation regarding the priority of sites on the inventory and level of remediation. [2000 Guidelines 6.7]

2002 WEST VIRGINIA RESPONSE:

As stated earlier, all OOG files and records are public information and can be easily reviewed or obtained. The "public" can become directly involved in the program through the interested party provision of the Abandoned Well Act. Under this provision, the party has the right to enter the property and plug the well, at its expense, and to seek reimbursement from the responsible party.

There is no direct involvement of the public in the prioritization or level of remediation, however, it is common that a member of the public provides the initial contact concerning an abandoned well through a complaint. As a consequence to that complaint, an investigation is conducted with the findings being provided to the complainant and used by the OOG to prioritize the site.

FINDING IV.12

The West Virginia program partially meets the 2000 Guidelines. When the rules for bona fide future use, including rules on priorities of sites generally, were adopted, the state utilized a stakeholder's group for issues discussion before the rules were published for official public comment. This was excellent compliance with the public participation. The state does an excellent job of giving the public access to the information about abandoned wells that it has.

It is the practice of the OOG to receive all public comments offered in making a determination of the priority for a particular well. The OOG practice of receiving public comment appears to be working well. However, there is no statutory or regulatory mechanism for citizens to petition the state to change a well's priority or appeal from the determination.

RECOMMENDATION IV.12

The Review Team recommends that, when the state has the opportunity to do so, a statutory or regulatory mechanism be codified for a citizen to petition the state to change an abandoned well's priority or appeal from that determination be established.

V. NATURALLY OCCURRING RADIOACTIVE MATERIAL

SUPPLEMENTAL REVIEW QUESTION V.1.

V.1. Discuss any activities the state has undertaken to determine the **occurrence and need for regulation** of NORM. [7.2]

2002 WEST VIRGINIA RESPONSE:

To date the OOG is has not received any reports of NORM occurrences. The West Virginia Department of Environmental Protection is in the process of investigating this issue through the Brownfields Program of the Division of Waste Management. Through this effort, which includes investigating several oil and natural gas sites during 2002, the Department will determine whether NORM exists at these sites and assess the associated health risks. The parties involved will be operating under Department of Energy (DOE) regulations and WV Department of Health guidelines during this investigative project.

FINDING V.1

West Virginia is taking action to meet the 2000 Guidelines. The 2000 Guidelines recommend that a state adopt a regulatory program that addresses identification and handling of oil field NORM, unless the state determines, based on field monitoring and other scientific data, that NORM in the state does not pose a risk that warrants a regulatory program. West Virginia is in the process of making such a determination.

RECOMMENDATION V.1

The review team recommends that West Virginia complete its evaluation of potential oil field NORM occurrence, and establish a regulatory program if warranted.

SUPPLEMENTAL REVIEW QUESTION V.2.

V.2. Briefly discuss each of the following **program elements** as they apply to the NORM regulatory program (give reference to any statutory or regulatory requirements): [7.3]

2002 WEST VIRGINIA RESPONSE:

a. definitions *N/A*

- b. action levels *N/A*
- c. surveys *N/A*
- d. worker protection *N/A*
- e. licensing/permitting *N/A*
- f. removal/remediation *N/A*
- g. storage *N/A*
- h. transfer of land and equipment for continued use *N/A*
- i. release of sites, materials, and equipment *N/A*
- j. disposal *N/A*
- k. interagency coordination *N/A*
- l. public participation *N/A*

FINDING V.2.

West Virginia has not adopted the referenced program elements because the state is only in the initial stages of determining whether or to what extent oil field NORM may exist in the state.

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Appendix A

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GLOSSARY OF ACRONYMS

BMP	Best Management Practices
CBM	Coalbed Methane
CDL	Commercial drivers license
CSS	Customer Support Service
DEP	West Virginia Department of Environmental Protection
DOE	Department of Energy
DWR	Division of Water Resources
E&P	Exploration and production
EOP	Emergency Operations Plan
EPA	United States Environmental Protection Agency
EPAs	Employee Performance Appraisals
FERC	Federal Energy Regulatory Commission
GIS	Geographic Information System
GPS	Global positioning system
GWPA	Ground Water Protection Area
GWPC	Ground Water Protection Council
H ₂ S	Hydrogen sulfide
IOGA	Independent Oil and Gas Association
IOGCC	Interstate Oil and Gas Compact Commission
MCL	Maximum concentration level
MIT	Mechanical integrity test
MOA	Memorandum of agreement
MOU	Memorandum of understanding
NORM	Naturally occurring radioactive material
NPDES	National Pollution Discharge Elimination System
NRC	National Response Center
OAQ	Office of Air Quality
OLS	Office of Legal Service

OOG	Office of Oil and Gas
OPA	Oil Pollution Act of 1990
OSHA	Occupational Safety and Health Administration
OWM	Office of Waste Management
OWR	Office of Water Resources
P&A	Plug and abandon
PEL	Permissible exposure limits
PIO	Public Information Office
ppm	Parts per million
RCRA	Resources Conservation & Recovery Act
STRONGER	State Review of Oil and Natural Gas Environmental Regulations
tph	Total petroleum hydrocarbons
tss	Total suspended solids
UIC	Underground Injection Control
WVDOT	West Virginia Department of Transportation

Appendix B

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**QUESTIONNAIRE FOR FOLLOW-UP AND SUPPLEMENTAL
REVIEW OF STATE OIL AND GAS ENVIRONMENTAL
REGULATORY PROGRAMS**

State West Virginia _____

Completed by The Office of Oil and Gas _____

Organization Department of Environmental Protection _____

Address 1356 Hansford Street _____
Charleston, WV 25301 _____

Telephone (304) 558 – 6075

Questionnaire Coordinator James Martin _____

INSTRUCTIONS: The primary bases for this review are the Guidelines for State Review of Oil and Natural Gas Environmental Regulatory Programs (June 2000), and the recommendations of the initial report of the review your state's Oil and Gas regulatory program. The major objectives of the follow-up review are to evaluate your state's responses to the initial review recommendations, and to evaluate the regulatory program against changes made to the Guidelines since the initial review.

Please answer the questions as completely as reasonably possible, keeping the purposes of the follow-up review in mind. Avoid supplying extensive background information, data, regulations or statutes that do not address issues in the review recommendations or the Guidelines, or are not related to the state's oil and gas environmental programs. (For example, regulation of underground fuel storage tanks is not addressed in this review.) The purpose of this questionnaire is to elicit information that will provide a fair and balanced characterization of the state's regulatory program, rather than an exhaustive inventory of waste management facilities. Terms used in this questionnaire have meanings consistent with those contained in the Guidelines. Citations that appear in brackets (e.g., [5.3.]) following each question refer to the applicable section or sections of the Guidelines.

A computer disk containing the questionnaire in either Word 97 or Word Perfect 8.0 has been provided to facilitate your preparation of the document.

REQUESTED BACKGROUND INFORMATION

- I. Please revise and update, as appropriate, the introductory material in the report of the initial review.

The introductory material will be a separate document.

- II. Please provide brief descriptions of the main developments in your state program since the last state review.

The Soil Erosion and Sediment Control Manual was developed in 1993 as a Best Management Practice (BMP) document to assist operators in proper site construction and reclamation.

The Coalbed Methane Act was passed in 1993 which gives authority and direction to the Office of Oil and Gas (OOG) regarding the environmental regulation of coalbed methane wells.

The National Pollution Discharge Elimination System (NPDES) Produced Water General Permit was developed in 1993 as an environmental sound option for produced water from stripper oil wells.

In 1994 the Department of Environmental Protection's (DEP's) rules and regulations were recodified through House Bill 4065 to provide further clarification of authorities and responsibilities of the various regulatory offices and agencies.

Global Positioning System (GPS) units were purchased for all field personnel in 1995 to allow for the collection of accurate well location data. Additionally, all field personnel have cell phones and offices set up in their homes which include a computer, fax, copier, scanner and printer. A Unix workstation was also purchased to better access the DEP's Geographic Information System (GIS).

The DEP Office of Legal Services (OLS) was created in 1995 through the passage of House Bill 2523 (Executive Order No. 4-95) giving the OOG greater access to legal support for enforcement actions and development of rules and regulations.

In 1999 the OOG was formally organized into four programs/sections---permitting, compliance, inspection/enforcement and abandoned wells---as a reflection of office priorities and to provide clarification of duties.

The independent, privately contracted OOG database has been converted to a state-developed and maintained Oracle system as of 1999, employed

throughout the Department. A few applications are still in the conversion process and should be fully completed by year-end.

The West Virginia Legislature created legislation in the 2001 session to reinstate rules for the implementation of the Natural Gas Policy Act (35CSR7) allowing for Section 29 tax credits. They also approved regulation changes to allow for electronic permitting. DEP's Information Technology Office is aggressively working to complete e-permitting capabilities across the Department by mid January of 2003.

The Division of Environmental Protection was restructured in the 2001 legislative session. The change made the Division a cabinet level Department. Some of the larger Offices of the prior DEP are now divisions within the new DEP. The Office of Oil and Gas remains an Office.

- III. Please provide a listing of the recommendations from the previous review, and your responses to each. The listing should include any implementation or action plans.

The responses to the recommendations from the previous review are contained in a separate document.

- IV. Please provide the following in the format or formats most readily available to you:

- A. References to all statutes, rules, regulations, orders, and other documentation reflecting changes made in response to recommendations contained in the report of the initial state review.**

*Associated Waste General Permit
NPDES permit for produced water
Inspector's Examining Board composition (WV Code
Chapter 22C, Article 7)
DEP Office of Environmental Enforcement
OOG Enforcement Policy
OOG Assessment Policy
WVGES Abandoned Well Project completion
DEP website creation for public access (www.dep.state.wv.us)
OOG GIS workstation implementation
Office of Legal Services creation through House Bill 2523
DEP Overtime/Comp. Time Policy*

- B. Organization chart(s) showing the structure of all agencies responsible for abandoned oil and gas sites, and oilfield NORM (naturally occurring radioactive materials).

An OOG organizational chart is provided separately.

- C. Descriptions of references to all statutes, rules, regulations and orders applicable to abandoned oil and gas sites, and NORM from oil and gas production.

*WV Code Chapter 22 Article 6 Section 19, 35CSR4
The Abandoned Well Act—WV Code Chapter 22 Article 10, 35CSR6 and
35CSR5*

- D. Any memoranda of understanding or similar agreements between state agencies or between the state and any other governmental entities (BLM, EPA, Indian Tribes, local jurisdictions) pertaining to abandoned sites, and NORM from oil and gas production.

There are no Memorandums of Understanding (MOU's) at this time. However, for all work done accessing funds from the Oil Spill Liability Trust Fund through the Oil Pollution Act, a Pollution Removal Funding Authorization (PRFA) is executed with EPA.

- E. Any written mission statement(s), goals, objectives and policies applicable to abandoned sites, and NORM from oil and gas production.

Legislative findings in the Abandoned Well Act, Chapter 22, Article 10 Section 2(b) state that "it is the public policy of this state, to foster, encourage and promote the proper plugging of all wells at the time of their abandonment to protect the environment and mineral resources of this state".

The Abandoned Well Program manager's personal performance evaluation specifies the following objectives: 1) as funding permits, keep a cleanup/plugging crew working on a continual basis, 2) assess the risk of abandoned wells and prioritize well plugging candidates, and 3) seek avenues to reduce abandoned well liabilities.

- IV. Also, please include on a separate page any other relevant practices, program measures, guidelines or controls applicable to your state.

In our efforts to protect human health and the environment, the OOG has developed a Site-Safety Plan requirement for all deep wells, which must be approved before drilling begins.

Likewise, in an effort to be as fair and consistent as possible with industry operators, the OOG has established enforcement and assessment policies.

The OOG is currently working with service companies, well plugging contractors, and well operators to develop a well plugging certification program. This program will provide education, training, and certification for well plugging contractors to help ensure proper well plugging.

To enhance the quality of operators' reclamation work, the OOG developed an Erosion and Sediment Control Manual to serve as a BMP document for proper, effective reclamation.

As a training and personal development initiative, the OOG is planning inspector certification through the Interstate Oil and Gas Compact Commission's (IOGCC's) National Inspector Certification Program.

V. The next pages contain a matrix that should be used to summarize E&P waste management practices. It is recognized that further explanation may be necessary. Don't try to capture everything in precise detail - the matrix is intended only to provide a general characterization of the scale of your program. Please provide the best data readily available. If the basis for volume determinations is approximation, for example, simply state that.

E&P Waste Management Matrix

Waste Management Practices	Number of Facilities (2000)	Volume Managed Annually (2000)	Basis for Volume Determination
Drilling	<i>900 New Well Permits</i>	<i>2,200,000 cubic feet of cuttings</i>	<i>calculation based on avg. of 2444 cubic ft./well</i>
Production	<i>43,223 Wells Reporting Prod.</i>	<i>Produce water not reported</i>	
Special Use			
Landspreading	<i>900 Land app. of drilling pit fluids</i>	<i>750,000 bbls.</i>	<i>calculation based on avg. of 35,000 gals./pit</i>
Roadspreading			
Tanks (EOR)	<i>unknown</i>	<i>2,500,000 bbls.</i>	<i>operator reports</i>
Commercial Facilities:			
Multipractice			
Landfarms			
Tank Bottom Reclaimers			
UIC Surface Facilities	<i>5</i>	<i>275,000 bbls.</i>	<i>operator reports</i>
Oil-Field NORM			
Centralized Facilities (non-NORM)	<i>10 NPDES facilities</i>	<i>8,000 bbls.</i>	<i>operator's discharge toring reports</i>
Oil-Field NORM			
Municipal Landfills Accepting E&P Waste	<i>19 approved</i>	<i>unknown</i>	
Underground Injection Surface Facilities	<i>55</i>	<i>925,000 bbls.</i>	<i>operators reports</i>
Abandoned Sites			
Other			

E&P Waste Management Matrix (cont.)

Waste Management Practice	Principal Agency	Primary Statute	Primary Rules, Regulations, or Orders	Applicable Guidelines
Drilling	OOG	Chapter 22 le 6	35CSR1-4	Permit cond.,SS BMP Man.
Production	OOG	Chapter 22 le 6	35CSR1-6	
Special Use				
Landspreading	OOG	Chapter 22 le 6	35CSR1,3,4	General Permit
Roadspreading				
Tanks	OOG	Chapter 22 le 6	35CSR1	SPCC Regs.
COMMERCIAL FACILITIES:				
Multipractice				
Landfarms				
Tank Bottom Reclaimers				
UIC Surface Facilities	OOG	Chapter 22 le 6	35CSR1,2,4	UIC permit itions
Centralized Facilities: (non-NORM)	DWR	Chapter 22 Article 11	SR10	NPDES permit conditions
Oil-Field NORM				
Municipal Landfills Accepting E&P Waste	DWM	Chapter 22 le 15	33CSR1	40CFR Part 261
Underground Injection Surface Facilities Abandoned Sites Other	OOG	Chapter 22 le 6	35CSR1,2,4	UIC permit itions

I. GENERAL CRITERIA

1. Are **technical criteria for E&P waste management practices** contained in a formal document? If so, please provide the appropriate reference. [3.1.f]

Yes, technical criteria for E & P waste management practices are found in the following:

- *Underground Injection Control (UIC) permit conditions for produced fluids,*
- *General permit conditions for drilling pit fluids, produced fluids, and associated wastes,*
- *For landfill disposal, all material must be determined to be RCRA non-hazardous as defined under 40 CFR Part 261.*

2. What are the **goals and objectives** of the state's waste management program? Please provide reference to the appropriate document(s). [3.2]

In creating the Department of Environmental Protection, the State Legislature found that restoring and protecting the environment is fundamental to the health and welfare of individual citizens and the State has primary responsibility for protecting the environment. Furthermore, the legislature found that it is the policy of the State to use all practicable means and measures to prevent or eliminate harm to the environment and biosphere and to create and maintain conditions under which man and nature exist in productive harmony and fulfill the social, economic and other requirements of present and future generations. (WV Code 22-1-1). Consequently the goals and objectives of all facets of the OOG are centered on the foundation of environmental protection. Specific to waste management, the OOG desires to minimize such waste and to provide a mechanism for and require the proper ultimate disposition of any waste. (associated waste permit, Underground Injection Control (UIC) permit, other general permits, landfilling through the Division of Waste Management (DWM))

3. Does your program provide for **flexibility** in determining the criteria applicable to E&P waste (e.g., variation in criteria dependent on region of the state or other factors; authorization of site-specific waivers for good cause shown and consistent with program goals and objectives)? If so, please provide an example or examples and reference to the appropriate document(s). [3.3]

Flexibility is provided for in both permits and regulations. NPDES permits are dependent upon local stream flow and stream load and consequently are designed accordingly (NPDES permit).

Water Pollution Control permits are designed and utilized based on such factors as area topography and water quality/contaminates. For example, some Coalbed Methane (CBM) wells produce high quality water and can be appropriately managed through such a permit.

The Chief of the OOG has the authority to grant variances, under certain conditions, to requirements under 35CSR4 and WV Code Chapter 22 Article 21.

II. ADMINISTRATIVE CRITERIA

1. Do E&P waste permits provide **notice of the permittee's obligation** to comply with other federal, state or local requirements? If so, please provide a copy of the form(s). [4.1.1]

Notices of compliance obligation are contained in the UIC permit, associated waste general permit, NPDES general permit, and the drilling pit general permit.

2. Has the state adopted a **state contingency plan** for response to spills and releases? If so, briefly describe, including volumes that trigger a response, time in which notification and clean-up is to occur, and criteria (i.e., cleanup standards) used to assure that remediation was accomplished. Please provide reference to applicable portions of the state plan. [4.2.1.1.a]

The State has developed an Emergency Operations Plan (EOP) to respond to disasters and emergencies. It assigns duties and responsibilities to departments, agencies, and support organizations. The DEP plays an integral part in this plan and additionally has established an 800 number for spill reporting and a corresponding "Spill Line Manual" that lists call procedures, contacts, etc.

Crude oil and natural gas industry related spills are routed to the OOG for investigation. Additionally, notification directly to the OOG from the well operator is required immediately but in no case, later than 24 hours. Reportable discharges are those that: (1) would be reportable pursuant to section 311(b) of the Federal Water Pollution Control Act, (2) any upset or bypass causing effluent limitations established under the general permit to be exceeded or (3) any pit failure which results in a discharge to any surface water of the state. Cleanup standards are generally those found in the Groundwater Protection Area (GWPA) established Maximum Concentration Levels (MCL) and the associated waste general permit.

3. Describe any **funding** provisions to enable the state to respond to spills and releases in the event a responsible operator cannot be located or is unwilling or unable to respond, and any provisions for reimbursement of the state for moneys so expended. [4.2.1.1.b]

If a spill occurs from an abandoned well or wellsite, the OOG can access the Oil and Gas Reclamation Fund which can be used to plug and reclaim abandoned wells and well sites. Monies from this fund come from fees on new drilling permits and bond forfeitures and are typically in the \$100,000 range per year. Expenditures from this fund can be recovered under WV Code Chapter 22 Article 10 Section 7(f). Additionally, the DEP's Division

of Waste Management has a response team that can be activated for assistance through the Hazardous Waste Emergency Response Fund (WV Code Chapter 22 Article 19). The statute was modified in 2000 to allow for clean up of petroleum products. The statute requires reimbursement for expenditures from this fund by the responsible party.

The State has accessed the federal Oil Spill Liability Trust Fund through the Oil Pollution Act (OPA) regarding crude oil spills impacting or threatening to impact a navigable water of the United States and in which the responsible party is unknown.

4. Describe the **program planning** and **performance measurement** processes, including the following: [4.2.3, 4.3, 8.1, 8.2, 8.3]

a. Strategic or short-term planning.

The Office of Oil and Gas is comprised of four program/sections. The managers of each of these sections meet monthly with the Chief to discuss strategies and undertake short-term planning. A significant portion of the planning takes place with the individual employees during their performance appraisals. These are originally established at the beginning of each year with interim reviews as often as needed but at least mid year and year-end. Assessment of the success of goals and objectives are determined in those reviews based on the performance standards established in the originally appraisals.

b. Briefly describe how program goals and objectives are related to the **protection of human health and the environment**. [3.2, 8.1]

The OOG is the lead E&P regulatory body responsible for the protection of human health and the environment and consequently applies this premise in everything it does. This practice is evident in such activities as the review of all casing programs and proper site construction Best Management Practices (BMPs) for permit applications, responding to citizens' complaints, reviewing reclamation activities, establishing site-safety plans for deep well permits, developing compliance orders and plugging of abandoned wells and reclamation of abandoned well sites along with a regular inspection and enforcement program.

c. Briefly described the program's methods for **establishing program goals and objectives**. [3.2]

The goals and objectives of the OOG are predicated on the mandates as set forth in statute and regulation and are done in conjunction with the overall mission, goals and objectives of the DEP as outlined in the strategic plan and WV Code 22-1-1 (see General Criteria question 2).

OOG staff participates in strategic planning by evaluating past activities and future needs and priorities to establish program goals and objectives for the coming year.

The OOG has developed or implemented, or is in the process of developing and implementing, several initiatives designed to achieve the protection of human health and the environment. Examples of such initiatives include:

- *compliance protocols specified in laws and orders involving among other things, operator training,*
- *site safety plan requirements for all deep wells,*
- *well plugging contractor certification which will result in a guidance manual and training.*

- d. How E&P waste management activities are weighted against other program activities competing for time and resources. [4.3.1, 4.3.2]

Protection of the environment is weighted above all other program activities (WV Code 22-1-1). As E&P waste management interacts in the environmental protection mandate, E&P waste management is weighted heavily. The OOG relies significantly on general revenue funding from the legislature but does seek other avenues. Just recently we were able to participate in an Environmental Protection Agency (EPA) grant that will be used to staff an Inspector Specialist who will be dedicated to well site reclamation and BMP implementation and training.

- e. How program plan expectations are communicated to staff at all levels who are responsible for program implementation.

Program priorities and plan expectations are developed through the strategic and short-term planning sessions undertaken by the OOG Chief and managers. These plans are then disseminated to the staff responsible for implementation through meetings, memorandums, and individually through the employee performance appraisal, which outlines specific duties and responsibilities (see question 4. a.).

- f. Briefly describe how progress toward **achievement of program goals and objectives is measured.** [8.2]

Policies and procedures which are developed and implemented to achieve the OOG's goals and objectives are always under review. Regardless of the method of measurement, all progress must be toward achieving the ultimate goal of protecting the public health and the environment.

The OOG measures progress a variety of ways. One current example of impact assessment involves our efforts in the identification of areas deficient in erosion and sediment controls and the subsequent follow-up inspection after erosion and sediment control implementation. This methodology is being implemented at the DEP level in its watershed analysis.

Input measures are also developed as we encourage feedback from all our customers (regulated community, environmental community, public, other government agencies). Under compliance and inspection/enforcement sections, the OOG receives and responds to a variety of complaints. Additionally the OOG conducts periodic operator and public training seminars. Through compliance protocol, the OOG is participating in individualized training and is planning a joint training session with EPA around June of this year.

At the DEP level, town hall meetings have been held periodically to discuss particular issues and to receive feedback regarding the activities of the Department. The DEP has also in the past engaged in customer surveys to help gauge the level of achievement towards our goals. The DEP website presently provides one of the best tools for input from all sources outside the Department.

The OOG has also historically engaged in output analysis, such as inspections and activity witnessing (Mechanical Integrity Tests (MIT), cementing jobs, etc.), for determining success of individualized goals, which in turn provide a mechanism to evaluate the level of achievement of program goals and objectives.

- g. Briefly describe **how information obtained from measurement of progress in achieving goals and objectives is used** to alter or refine program activities. [8.3]

As information is gathered concerning progress measurement, the OOG seeks to identify successful processes and apply those to other, less successful areas. This assessment is undertaken collectively among OOG staff to promote consistency and allow for a broader and more objective perspective. The OOG is striving to become more “team” oriented in its methodology for decision making in all facets of operation.

West Virginia OOG has also found that information sharing between IOGCC member states to be beneficial, as many issues tend to be common among states.

5. Describe any **waste hauler training and certification** requirements for commercial transportation of E&P wastes in your state. Give reference to any statutory or regulatory provisions relating to this activity. [4.2.5]

The OOG has no such requirements. However, the West Virginia Department of Transportation (WVDOT) requires Commercial Drivers Licenses (CDL) for certain types and sizes of truck (91CSR4) and the WV Public Service Commission has licensing authority over waste haulers to commercial landfills (150CSR9). All haulers to commercial UIC disposal wells are required to be affiliated with the commercial disposal well operation and no third party haulers are permitted for such facilities.

III. TECHNICAL CRITERIA

A - GENERAL

1. Describe any **general performance or design standards** applicable to E&P waste management practices used in your state. Describe how these standards prevent contamination of ground water, surface water, soil or air; protect public health, safety and the environment; and prevent property damage. [5.1.a]

All disposal of E & P waste is designed to protect human health, safety and the environment and must be permitted through the OOG (Chapter 22, Article 6, Section 7) or approved for landfills, by the DWM (Chapter 22 Article 15). Permits contain the various waste management practices and standards applicable to the particular waste disposal method. Examples of waste management practices typical for most disposal methods are waste characterization, treatment methodologies, storage and secondary containment requirements, and specific operating and discharge requirements.

Pits used during the drilling process to collect drill cuttings and fluids must be constructed, used and ultimately reclaimed in accordance with statute and regulation. They must not be left in such condition as to constitute a hazard or to prevent use of the surface for agricultural purposes after the expiration of the reclamation period (35CSR4-16.4). Pit fluid disposition is regulated through a Water Pollution Control Permit, which requires, among other things, sampling and testing to ensure contamination prevention, public health protection and property damage prevention.

Produced water disposal is typically addressed through permitted UIC facilities or in certain instances, NPDES permitted facilities. With both permits, strict standards must be met from sampling and testing of the waste fluid and effluent to mechanical integrity testing of disposal wells. All these requirements are in place for the protection of public health and the environment.

2. Describe any **waste segregation** requirements or other measures applicable to E&P waste management practices and facilities that ensure that hazardous waste is not disposed with exempt E&P waste. Give the regulatory citation. Does the state require or encourage segregation of exempt from non-exempt E&P waste? [2.8.d and 5.1.b]

Waste management and disposal permits delineate the specific wastes that may be managed under a particular permit and generally address waste that are not permitted under the permit. These permits do not allow mixing of exempt and non-exempt wastes. Additionally the OOG has reviewed gas transportation and handling facilities in the state and issued Declaratory

Rulings for those facilities identifying the exempt and non-exempt waste at the facilities and the associated handling requirements applicable to each (35CSR4.7.3.b.3). All landfilled E & P wastes must be determined to be RCRA non-hazardous as defined in 40 CFR Part 261.

3. Are there any **air emission control** requirements applicable to E&P waste management facilities? If so, please describe and provide appropriate references. [5.1.a and 5.10.2.2.c]

While there are no specific requirements, the OOG does address when encountered, on a site-specific basis, situations which may have an air impact. Hydrogen sulfide has been encountered in isolated areas in West Virginia and in such instances the Permissible Exposure Limits (PEL) established by Occupational Safety and Health Administration (OSHA) are enforced. Regarding landfills, the DWM does have requirements for methane emissions.

B - PITS

4. Do you have specific technical criteria in place in your state for the following **types of pits**? If so, please cite the reference for such criteria. [5.5.1]

<u>Type</u>	<u>Reference</u>
<input type="checkbox"/> Reserve pits	<i>Drilling Pit General Permit, BMP Manual, 35CSR4-16.4</i>
<input type="checkbox"/> Production pits	<i>see below</i> _____
<input type="checkbox"/> Skimming/settling pits	<i>not used</i> _____
<input type="checkbox"/> Produced water pits	<i>prohibited</i> _____
<input type="checkbox"/> Percolation pits	<i>prohibited</i> _____
<input type="checkbox"/> Evaporation pits	<i>prohibited</i> _____
<input type="checkbox"/> Special purpose pits	<i>see below</i> _____
<input type="checkbox"/> Blowdown pits	<i>prohibited</i> _____
<input type="checkbox"/> Flare pits	<i>contained in the site safety plan</i>
<input type="checkbox"/> Emergency pits	<i>Drilling Pit General Permit, BMP Manual, 35CSR4-16.4</i>
<input type="checkbox"/> Basic sediment pits	<i>prohibited</i> _____

___ Workover pits	<i>Drilling Pit General Permit, BMP Manual, 35CSR4-16.4</i>
___ Other	<i>N/A</i> _____

5. What **notification** is required prior to construction and operation of rule-authorized pits? [5.5.2.d]

West Virginia has no rule-authorized pits, as all pits must be permitted.

6. Briefly describe any provisions concerning the issuance and use of **emergency permits** for pits. Give reference to the applicable statutory or regulatory sections. [5.5.2.e]

Emergency pits can be constructed, on a site-specific basis, only after receiving prior approval from the OOG inspector (Construction and Reclamation BMP Manual). Any emergency pit is subject to all the same requirements as regular reserve pits.

7. What are the requirements for the **placement of reserve pits** relative to drilling equipment? [5.5.3.g]

Section 7, pages 21 and 22 of the Construction and Reclamation BMP Manual, provides specific requirements for the placement of reserve pits relative to drilling equipment. Additionally, wells requiring a site safety plan include further requirements for the placement of reserve pits.

C - LANDSPREADING (Non-Commercial)

8. Give reference for any statutory or regulatory **definitions of or prohibitions against landspreading** that are applicable in your state. [5.6.1.a]

Definitions are contained in the Drilling Pit General permit which identifies the permitted materials as those generated during exploratory/developmental drilling, well treatment operations, plugging operations and reworking of wells. The Associated Waste General Permit also addresses landspreading as a treatment/disposal for some types of wastes.

9. Is on-site **landspreading of waste containing NORM** above action levels prohibited? [5.6.1.c]

If a waste contained NORM above active levels, landspreading would be prohibited.

10. Briefly discuss each of the following **operational requirements** as they apply to landspreading (give reference to any statutory or regulatory requirements): [5.6.3]

All the operational requirements below are found in the Drilling Pit and Associated Waste General Permits.

- a. Removal of free oil. *The Drilling Pit and the Associated Waste General Permits require the removal of free oil.*
- b. Allowable pH range of waste being disposed. *For the Drilling Pit General Permit, 6-10. No pH range established for the Associated Waste General Permit.*
- c. Spreading of solids and incorporation into the soil. *The Associated Waste General Permit requires delineation of the contaminated area and along with the site registration for the permit, the permittee must provide a description of their treatment methodology, which includes the spreading of solids and incorporation into the soil.*
- d. Application rates, methods and practices for liquids *Under the Drilling Pit General Permit, the discharge of liquids shall be conducted only on vegetated land. It may not be conducted on saturated, frozen or impermeable ground. The discharge shall be applied at a rate that shall not cause ponding, erosion or run-off into the water of the state. Effluent limits are established for iron, dissolved oxygen, settleable solids, chloride, aluminum, oil and grease, and manganese.*
- e. Addition of nutrients for biodegradation *Under the associated Waste General Permit, the description of treatment methodologies shall identify the addition of nutrients for biodegradation.*
- f. Waste limitations (e.g., EC, ESP, SAR) *Specific limitations are addressed in the Drilling Pit General Permit and on a site-specific basis for the associated Waste General Permit.*
- g. Limitations on waste-soil ratio by oil and grease content *The Drilling Pit General Permit requires that when any oil and grease levels are above 15 milligrams/liter (mg/l) the operator must submit an explanation of the cause of such level and the steps to be taken to reduce the levels.*

The Associated Waste General Permit, requires treatment to a level of 500 ppm for tph.
- h. Limits on salt and hydrocarbon content in final waste-soil mixture *Final hydrocarbon content in waste soil mixture must be 500 ppm or below. Salt*

content in the final waste soil mixture is not required to be determined because effluent limitations are set for salt content of a discharge through the general permit.

- i. Enhanced techniques available to meet final criteria for salt and hydrocarbons
The use of any enhanced techniques must be described in the treatment methodology contained in the associated waste permit.
- j. Soil analysis required prior to landspreading and/or after site closure
The area of contamination must be delineated by soil analysis prior to treatment and must achieve the 500 ppm at site closure in accordance with the provisions of the associated waste general permit.
- k. Any additional criteria for landspreading special wastes N/A

D - BURIAL AND LANDFILLING (Non-Commercial)

11. Give reference for any statutory or regulatory **definitions of or prohibitions against burial or landfilling** which are applicable in your state. [5.7.1]

The only burial allowed is for residues left in the pit after discharge of fluids as provided for in the Pit General Permit. While there are no statutes or regulation prohibitions against burial or landfilling, any ultimate disposal of a waste must be permitted (WV Code 22-6-7). It is the policy of the OOG to prohibit the burial or landfilling of waste beyond what is permitted under the Pit General Permit.

12. Do you have specific **regulatory requirements** for burial or landfilling of E&P wastes? If so, give reference to the applicable statutory or regulatory sections. [5.7.2]

The Pit General Permit (G.4(f)), provides requirements for the burial of residues left in pits. After discharge of pit fluids, the remaining material shall be promptly covered with adequate soil to prevent contact with the surface runoff and reduce the potential for pollution of surface water.

E - ROADSPREADING

13. Give reference for any statutory or regulatory **definitions of or prohibitions against roadspreading** which are applicable in your state. [5.8.1]

Chapter 22, Article 6, Section 7 requires a permit for the discharge of any waste. It is the policy of the OOG at the present time that roadspreading is not viable the therefore prohibited.

14. Briefly discuss each of the following **operational requirements** as they apply to roadspreading (give reference to any statutory or regulatory requirements): [5.8.3]

N/A

a. testing criteria that are applicable for wastes proposed for roadspreading (e.g., ignitability, density, metal content, consistency with approved road oils)

N/A

b. application rates

N/A

c. buffer zones

N/A

d. produced water testing (for similarity to approved commercial products)

N/A

F - TANKS

15. Give references for any statutory or **regulatory definitions** of E&P waste tanks used in your state. How are the tanks that treat, store or dispose of E&P waste regulated differently, if any, from tanks used exclusively for processing or storage of petroleum products? [5.9]

West Virginia Title 35, Series 1 provides requirements for all tanks whether used for storage and disposal of E & P wastes or for processing and storage of petroleum products.

16. Describe any requirements pertaining to the **location, use, capacity, age and construction of E&P waste tanks**, including registration, inventories, etc. [5.9.2.a]

All tanks used for the storage of E & P wastes shall be constructed of material that is compatible with the material stored and the conditions of storage. They shall be provided with a secondary means of containment and be inspected on a periodic basis. Measures to prevent spills shall be properly engineered and may include such things as adequate tank capacity, overflow equalizing lines, vacuum protection, sensors and periodic examination of production equipment (35CSR1-7).

17. Describe any state program pertaining to **pollution prevention requirements relating to tanks**. [5.9.2.c]

Title 35, Series 1, Section 7 describes the state program for pollution prevention requirements relating to tanks. Such requirements include construction, secondary, containment, inspection, monitoring and maintenance. In addition to those requirements described in number 16 above, operators are required to have at each production facility, appropriate containment and /or diversionary structures or equipment to prevent discharged oil or other pollutants from reaching the waters of the state.

18. Briefly discuss each of the following **operational requirements** as they apply to E&P waste tanks (give reference to any statutory or regulatory requirements): [5.9.3]

- a. corrosion protection *Operators are required to have a maintenance program which includes corrosion protection provisions, as well as the requirements for compatibility of tanks with material stored (35CSR1-7.10).*
- b. structural integrity *Tanks are required to be constructed in a manner compatible with material stored (35CSR1-7.4). Visual examinations of tanks are required for condition and need for maintenance (35CSR1-7.6). Adequate vacuum protection is required to prevent tank collapse (35CSR1-7.7c).*
- c. protection against overtopping *Operators shall have one or more of the following: adequate tank capacity to ensure that the tank will not overflow, overflow equalizing lines between tanks or high level sensors (35CSR1-7.7).*
- d. secondary containment/leak detection *All operators shall have appropriate secondary containment and/or diversionary structures or equipment to prevent discharged oil or other pollutants from reaching water of the state. Operators must have a periodic inspection program of tanks for leak detection (35CSR1-7).*
- e. covers or measures to prevent entry of wildlife *Areas may be required to fenced off or covered on a site specific basis based upon a field determination by the inspector that any open area may present a danger.*
- f. hydrogen sulfide emission control *Any facilities in which H₂S emissions may occur at detectable concentrations, are required to have treatment and controls on a site-specific basis.*

19. Describe any tank **removal and closure** requirements and provide reference to statutory or regulatory requirements. [5.9.4]

Chapter 22, Article 6, Section 30, requires that, within 6 months after a well is plugged, the operator remove all production and storage structures and properly reclaim the site.

G - COMMERCIAL AND CENTRALIZED DISPOSAL FACILITIES

20. What agency (agencies) in your state has (have) regulatory **jurisdiction** over these facilities? [5.10.1]

West Virginia has no commercial disposal facilities as defined in the STRONGER guidelines. West Virginia Department of Environmental Protection, Office of Oil and Gas has regulatory jurisdiction over UIC facilities and NPDES sites that meet the definition of centralized disposal facilities.

21. Give reference for any **statutory or regulatory definitions** for commercial and for centralized disposal facilities. [5.10.1]

None

22. Do you have any centralized or commercial E&P waste disposal facilities? **How many, and of what type?** Does this include any surface facilities at UIC sites? If so, how many are associated with UIC sites? [5.10.1]

West Virginia has no commercial E&P waste disposal facilities. We do have 60 UIC disposal sites with surface facilities and 10 active NPDES disposal sites for produced water from stripper oil wells.

23. **What wastes are acceptable** for disposal? Do any of these facilities accept RCRA nonexempt wastes or wastes from other than oil and gas exploration and production activities? [5.10.2]

Only RCRA exempt class II fluids are acceptable for disposal at UIC sites. Regarding the NPDES sites, only produced water from stripper oil wells are accepted for disposal. RCRA nonexempt wastes and non-E&P wastes are not accepted at UIC and NPDES sites.

24. What are the **disposal and treatment methods** employed at these facilities? [5.10.2]

For NPDES facilities, disposal and treatment consists of ph adjustment, aeration, settling, filtration and dilution with disposal into receiving streams.

25. What elements are required as part of the **permit** application (e.g., siting plan, construction plan, operating plan, closure plan, etc.)? [5.10.2.2.a]

Siting, construction, operating and closure plans are all part of the permit applications.

26. If permit applications are required for **siting**, do they include: [5.10.2.2.b]

Y Names, addresses and phone numbers of the owners or operators of the facility?

N Names, addresses and phone numbers of owners or occupants of properties in close proximity of the site, or any other persons who may reasonably be adversely affected by releases from the site?

Y Topographic map that shows all highways, water courses, water wells, and dwellings within one mile of the site?

Y Geologic, hydrologic, engineering, chemical and any other data or information that demonstrate disposal of wastes and operation of the facility will not contaminate fresh water, the surrounding soils or air, endanger public health, safety or the environment, or cause property damage?

N Average annual precipitation and evaporation rate at the disposal site?
(evaporation is not an acceptable disposal method due to high annual precipitation)

Y Nature and permeability of vadose zone; description of the extent of underlying aquifer(s), and depth to ground water; direction of groundwater movement; data on water quality of nearby surface waters and underlying aquifer(s) prior to commencement of operations; and points of past or current use of surface or groundwater?

Y Proof that all public notice requirements have been met?

Y Certification by an authorized representative of the applicant that information submitted in the application is true, accurate and complete to the best of the applicant's knowledge?

Y Construction plan that includes detailed engineering drawings and diagrams of engineered disposal facilities?

27. Describe any **construction** requirements that will minimize or prevent releases to surface water, ground water, soil and air. In the case of reclamation facilities, describe any such requirements that apply to waste before and after reclamation. [5.10.2.2.c]

Construction requirements include the following: secondary containment, flood protection, fencing and locks for security and switches and sensors for automatic shut down.

28. If permit applications are required for **operating**, do they include: [5.10.2.2.d]

Permit elements are described and addressed in the applicable permit.

 Y An operating plan?

 Y Volume, rate and type of material to be disposed?

 Y Identification of the specific facilities that will be used to dispose of each waste stream (e.g., unlined or lined pits, tanks, etc.)?

 Y Contingency plan for reporting, responding to and cleaning up spills, leaks and releases of wastes or waste byproducts, including provisions for notifying emergency response authorities and for taking operator-initiated emergency response actions?

 N Ground water monitoring where wastes are managed on the land?

(WV does not have any permitted centralized disposal facilities where wastes are managed on land.)

 Y Plan for routine inspection, maintenance, and monitoring to ensure and demonstrate compliance with permit requirements, and in the case of landfarming, ensure that organic wastes are effectively treated?

 N Specific engineering plans for preventing or minimizing the generation or emission of hydrogen sulfide gas?

(There has been no known occurrences of hydrogen sulfide gas emissions at any centralized disposal facilities.)

 Y A plan for the onsite sampling and/or testing to assure that RCRA Subtitle C or other wastes prohibited by the regulatory agency for disposal are not disposed at such a facility?

(Onsite testing is not required at NPDES facilities, however, the operator is required to certify that all disposed wastes are exempt under RCRA Subtitle C requirements.)

 Y Characterization of wastes accepted at the facility?

 Y Plan for periodic removal and subsequent handling of free oil?

(At UIC surface storage facilities, most free oil is already removed prior to arrival and any remaining may be sold as product or disposed of through the UIC injection process at the operator's discretion.)

 Y Security plan for the facility?

29. Describe the **closure and post-closure monitoring** and maintenance requirements applicable to commercial facilities, including duration of post-closure care and financial assurance release schedules. [5.10.2.2.e]

N/A

30. For wastes not moved by pipeline, is there a requirement for **waste tracking**? If so, does it require: [5.10.2.3]

Waste tracking is required for hauling to UIC facilities in accordance with the UIC permit.

 Y A multi-part form that contains the names, addresses and phone numbers of the waste generator (producer), hauler, and disposal facility operator?

 Y Description and volume of the waste?

 N Time and date it was collected, hauled and deposited at the disposal facility?

 Y Time requirement for maintenance of the form?

 N Attesting that no illegal dumping occurred?

 N Certification by the hauler and disposal facility operator that no wastes were dumped illegally or at a location or facility not designated by the generator or permitted to receive the waste, and that no prohibited or hazardous wastes were mixed with the waste during transport?

 N Reporting of any discrepancies in waste descriptions, volumes or place of origin based on personal observations or information contained in the three-part form?

31. Are **waste haulers** permitted or licensed based on a showing of basic knowledge of regulatory requirements? [5.10.2.3]

There are no such permits or licenses, as the OOG does not allow third party haulers to transport waste. Consequently, knowledge of regulatory requirements is expected as they relate to all OOG statutes and regulations.

V. ABANDONED SITES

Does your state have a program to **inventory, prioritize and remediate** (as necessary) abandoned oil and gas sites? [6.1]

There have been various efforts on the part of the OOG to inventory abandoned wells. The most extensive was completed by the West Virginia Geological and Economic Survey in 1995. The focus of this study was to, through file research, identify any well that had been drilled but had no evidence of current activity or of having been plugged. Additionally, all permitted wells are identified in the OOG database as to their status (i.e. abandoned, plugged, active).

Field investigations/inspections of abandoned wells are initiated by complaints and through inspector work priorities and initiatives. Once inspections are completed, the information is submitted to the office staff for prioritization, which is required by statute and regulation. Remediation, through plugging and reclamation, is done as funding will allow. Under certain circumstances, the OOG will contact the National Response Center (NRC) and seek assistance through the federal Oil and Pollution Act (OPA).

2. Please provide reference to any **definitions** pertaining to abandoned sites or your abandoned well site program, including the types of facilities included in the definitions. [6.2]

Any well completed as a dry hole or not in use for a period of twelve consecutive months shall be presumed to have been abandoned (WV Code 22-6-19). Related definitions are found in Chapter 22 Article 10, the Abandoned Well Act, and 35CSR5 and 35CSR6.

3. Briefly describe your program for **identification, inventory and ranking** of abandoned sites. [6.3]

Abandoned wells are typically identified in the field through complaint investigations and random inspections. They can be identified in the database based on their status as a consequence to the annual reporting requirements. Once identified and inventoried, they are ranked by the information obtained during the field inspection.

Statute and regulation require the ranking to be based, fundamentally, on the well's threat to human health, safety and the environment and whether it is an impediment to the development of mineral resources. Wells that pose the greatest threat are placed in Classification I followed in lower priority by Classification II and Classification III.

4. Briefly describe **funding** mechanisms available to the state for abandoned site remediation. [6.4]

The Oil and Gas Reclamation Fund was established to address the plugging and reclamation of abandoned wells and wellsites. One hundred dollars from new well permit fees is allocated to this fund, as are bond forfeitures. Through these two sources, the OOG has historically taken in approximately \$100,000 per year.

Over the past few years, the OOG has accessed monies for oil clean up through the OPA (Oil Pollution Act), and has plugged abandoned wells responsible for such incidents. Funding through OPA can only be accessed in cases involving crude oil pollution, or the threat of crude oil pollution, into navigable waterways.

5. Briefly describe the criteria used in your **abandoned site prioritizing** system. [6.5]

As stated earlier, prioritization is based on the well's threat to human health, safety and the environment and if it is an impediment to the development of mineral resources. General risk assessment/evaluation criteria used to make this determination are such things as visual safety or health hazards, surface leakage and amount/area affected, evidence of ground water contamination in the vicinity, condition of surface casing and production casing, and planned or active mineral resource development in the area. These criteria will determine the Classification of the well and it is further prioritized using information such as the distance of the well to drinking water sources, the number of people living in the area of the well, the proximity to streams, the age of the well, and the amount of time the well has been abandoned.

6. What are the state's abandoned site remediation **goals**? How is progress measured? [6.5.1]

The general goal is to locate and evaluate each abandoned well site and mitigate those that are a threat to human health, safety or the environment. Initially, the OOG will expect the operator to respond to any remediation situation and take the appropriate action. If the operator fails to do so, or there is no known operator, the OOG will respond and take the necessary actions as funding will allow. Progress is essentially measured through the amount of funding at our disposal and hence the number of sites remediated.

7. Briefly describe the state's program relating to establishing **liability** for the remediation of abandoned sites. Provide references to any statutory or regulatory allocation of responsibility. [6.5.2]

Under the definition of "abandoned" in WV statute, abandoned sites may actually have responsible parties or operators. In these instances, the operators, per WV Code Chapter 22 Articles 6 and 10, are considered to have the liability associated with such sites. If no operator exists, and the well is considered to be "orphaned", the State has the responsibility to clean up sites per the requirements of WV Code Chapter 22 Articles 6 and 10 and 35CSR4 and 35CSR6.

If government funds are expended for site remediation, the OOG will directly or through a contractor, research pertinent files and databases in an effort to locate the responsible party. Depending on the nature and severity of the site contamination, this search may be done prior to expenditures.

8. Please provide reference to any **standards for abandoned site remediation**. [6.6]

Under statute and regulation (22-6-24, 35CSR4-13) wells must be plugged in a manner which will completely seal the hole and consequently minimize any threat to public health and the environment. As part of this requirement, all fluid/gas bearing zones must be separated by cement plugs and all retrievable casing must be removed. Standards for onsite remediation of crude oil contaminated soils are found in the Associated Waste Permit for Total Petroleum Hydrocarbons (TPH) (500ppm max.).

9. Briefly describe the state's **abandoned well remediation** program, including any flexibility allowed in plugging procedures. [6.6.1]

Once a well becomes a priority for plugging by the OOG, the job goes out to bid to contractors. As with all well work, a permit is obtained which outlines the methodology to be followed during the plugging and reclamation process. The Abandoned Well Act provides for abandoned well plugging by "interested" parties, which includes any parties which may be adversely affected by an abandoned well. The director may authorize bonding to such interested parties in lesser amounts than those required by well operators. The interested party may recover all reasonable plugging costs from the well operator.

10. Briefly describe the state's program for **surface remediation** of abandoned sites, including any requirements regarding present or future land use and consultation with surface owners. [6.6.2]

Within six months of the date of well plugging, the site is required to be reclaimed in accordance with the standards outlined in the OOG Erosion and Sediment Control manual, WV Code Chapter 22 Article 6 and 35 CSR4. This includes the removal of all production and storage structures and equipment. The surface owner receives a copy of the plugging permit application and may file comments relating to such activity. They may request of the permittee, certain types of vegetation to be sown and such things as monument burial depending on how they wish to use the land.

11. What is the program for **maintenance of records** of remediated sites? How is public access assured? [6.6.3]

All well work, which typically involves site work, requires a permit that outlines the reclamation requirements. Site work which may not specifically be part of well work falls under the discretion and scrutiny of OOG staff. An associated waste permit may be obtained in these cases. All documents pertaining to the activity of this site, including inspection reports, will be kept on file and maintained at the OOG. The OOG file is considered to be the official file. Information initially received on paper is periodically transferred to microfiche.

All OOG file information is considered public information and can be requested for public review and copies. The DEP's Public Information Office (PIO), works as a liaison between the program offices and their customers, including the public. They have an obligation to ensure that all requested information is provided accurately and timely. Additionally, through the DEP's website, a vast amount of information on file at the OOG can be accessed at the convenience of the requesting party and without involving OOG staff.

12. Describe any **public participation** activities associated with the abandoned sites program, including public access to information, public participation in rulemaking associated with the program, and participation regarding the priority of sites on the inventory and level of remediation. [6.7]

As stated earlier, all OOG files and records are public information and can be easily reviewed or obtained. The "public" can become directly involved in the program through the interested party provision of the Abandoned Well Act. Under this provision, the party has the right to enter the property and plug the well, at its expense, and to seek reimbursement from the responsible party.

There is no direct involvement of the public in the prioritization or level of remediation, however, it is common that a member of the public provides the initial contact concerning an abandoned well through a complaint. As a consequence to that complaint, an investigation is conducted with the

findings being provided to the complainant and used by the OOG to prioritize the site.

V. NATURALLY OCCURRING RADIOACTIVE MATERIAL

1. Discuss any activities the state has undertaken to determine the **occurrence and need for regulation** of NORM. [7.2]

To date the OOG is has not received any reports of NORM occurrences. The West Virginia Department of Environmental Protection is in the process of investigating this issue through the Brownfields Program of the Division of Waste Management. Through this effort, which includes investigating several oil and natural gas sites during 2002, the Department will determine whether NORM exists at these sites and assess the associated health risks. The parties involved will be operating under Department of Energy (DOE) regulations and WV Department of Health guidelines during this investigative project.

2. Briefly discuss each of the following **program elements** as they apply to the NORM regulatory program (give reference to any statutory or regulatory requirements): [7.3]

- a. definitions N/A
- b. action levels N/A
- c. surveys N/A
- d. worker protection N/A
- e. licensing/permitting N/A
- f. removal/remediation N/A
- g. storage N/A
- h. transfer of land and equipment for continued use N/A
- i. release of sites, materials, and equipment N/A
- j. disposal N/A
- k. interagency coordination N/A
- l. public participation N/A