

OFFICE OF SURFACE MINING  
RECLAMATION AND ENFORCEMENT

U.S. Department of the Interior



Annual Evaluation Report for the  
Regulatory Program and the Abandoned Mine Land Program  
Administered by the State Regulatory Authority  
of Missouri



For Evaluation Year 2019  
July 1, 2018 to June 30, 2019  
Prepared by Alton Field Division  
July-September 2019

## **EXECUTIVE SUMMARY**

During the 2019 Evaluation Year, the Office of Surface Mining Reclamation and Enforcement (OSMRE) Alton Field Division, conducted oversight evaluations of the Missouri Department of Natural Resources, Land Reclamation Program (LRP) Regulatory and Abandoned Mine Land (AML) Programs. Oversight evaluations determine the effectiveness of the LRP in the implementation of the Surface Mining Control and Reclamation Act of 1977 and approved State programs. The annual evaluation report describes OSMRE's oversight processes, identifies the accomplishments and successes of the Regulatory and AML programs. It also identifies the LRP's financial, technical, and programmatic challenges and the OSMRE's concerns during the period of July 1, 2018 through June 30, 2019. The goal of oversight, and the annual evaluation report, is to strengthen the LRP's Programs and advise the LRP and the public of our findings and recommendations.

Each year, the Alton Field Division conducts outreach to solicit comments from the public and interested groups regarding the oversight process. The staff routinely interacts with citizens, environmental groups, industry, and other stakeholders, discussing topics of concern and suggestions for improvement of the OSMRE and the LRP. This input informs the development of current and future oversight evaluations.

In support of the OSMRE's national initiatives, the Alton Field Division conducted studies evaluating the three required National Measurement Elements: off-site impacts, reclamation success (bond release), and customer service.

### **Required National Measurement Elements**

- The Off-Site Impacts evaluation indicated that 100 percent of the LRP's Inspectable Units were free from off-site impacts. The Alton Field Division concludes that the LRP is successfully protecting the environment and the public from off-site impacts resulting from surface coal mining and reclamation operations. Detailed findings are on page 11.
- The Reclamation Success (bond release) evaluation indicated that the LRP is ensuring successful reclamation. The Alton Field Division gathered information in areas that measure program performance related to reclamation success: a) landform/approximate original contour, b) land capability, and c) hydrologic balance. The Alton Field Division concludes that the LRP is effectively ensuring successful reclamation on lands affected by surface coal mining operations. Detailed findings are on page 13.
- The Customer Service oversight review was to evaluate the effectiveness of the LRP cultural, historic, and archaeological resources permit processes and procedures. The Customer Service review was initiated but not completed during EY 2019. Additional information is on page 13.

### **National Priority Review Topics**

The OSMRE did not assign any National Priority Review Topics for this Evaluation Year.

### **General Oversight Topic Reviews for the State Regulatory Program**

The Alton Field Division conducted three Federal oversight inspections. There were no Ten-Day notices issued to the LRP during this Evaluation Year.

### **General Oversight Topic Reviews for the State Abandoned Mine Land Program**

- **Field Assessment: Funded and Completed Abandoned Mine Land Projects**  
This review indicated that the LRP is 1) accurately describing pre-construction conditions on sites, 2) effectively managing site reclamation contracts during construction, 3) complying with permit and mitigation conditions, and 4) ultimately ensuring that project and program goals are satisfied. Detailed Findings are on page 17.
- **Abandoned Mined Land Inventory System**  
This review indicated that the LRP requested the OSMRE approval for inventory amendments in accordance with the Surface Mining Control and Reclamation Act, Federal regulations, and the OSMRE policy and procedures. Detailed findings are on page 17.

### **Evaluation Year 2019 Assistance Activities**

- **Funding** - The primary mode of the OSMRE assistance to the LRP is through grant funding. The LRP received \$202,855 in Evaluation Year 2019 for Regulatory Program operations, providing 50 percent support for its regulatory program. The OSMRE provides 100 percent funding for the LRP Abandoned Mine Land Program, which totaled \$2,802,000 in Evaluation Year 2019.
- **Technical Assistance** - The Mid-Continent Region's Technical services Branch provided the LRP Abandoned Mined Land Program technical assistance associated with Acid Mine Drainage remediation and investigations at three areas known as the Old Bevier project area, the Germantown site and three site investigations in the Huntsville, Missouri area.
- **Technical Assistance** – The Mid-Continent Region provided the LRP with two seismographs for assistance with blasting monitoring at an active coal mine near Foster, Missouri.
- **Training** - Technical training courses are offered by the OSMRE throughout the year, which addresses technical and programmatic aspects of mining and reclamation. Two LRP staff attended two Technical Innovation and Professional Services classes and eight staff attended six National Technical Transfer Program courses training courses offered by the OSMRE.

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*Cover Page Photograph: Continental Coal, Inc. – Hume Mine.*

## **I. INTRODUCTION**

The Surface Mining Control and Reclamation Act of 1977 (SMCRA) created the Office of Surface Mining Reclamation and Enforcement (OSMRE) in the Department of the Interior. SMCRA provides the OSMRE the authority to provide federal funding and to oversee the implementation of State Regulatory (Title V) and Abandoned Mined Lands (AML) programs (Title IV) approved by the Secretary of the Interior as meeting the minimum standards specified by SMCRA. A brief explanation of each program follows:

### ***Title V – Regulation of Coal Mining***

In 1980, Missouri gained primacy and assumed responsibility for regulation of surface coal mining and reclamation operations. The Missouri Department of Natural Resources, Land Reclamation Program (LRP) administers the Missouri Regulatory Program under the provisions of the Surface Coal Mining Law (444.800 to 444.970). Its governing regulations are Missouri Code of State Regulations Title 10: Department of Natural Resources, Division 40: Land Reclamation Commission, (10 CSR 40). The LRP's laws and regulations are at the [Missouri Department of Natural Resources website](#).

The OSMRE is responsible for oversight of the LRP's Regulatory Program to ensure effective administration, implementation, maintenance, and enforcement of the approved program in compliance with SMCRA and consistent with Federal regulations. To fulfill this role, each year the OSMRE conducts performance evaluations in accordance with Directive REG-8 which establishes policy, procedures, and responsibilities for conducting oversight of state programs.

### ***Title IV – Abandoned Mine Land***

In 1982, Missouri gained authority for implementing its Title IV AML Program. Through its approved AML Reclamation Plan, Missouri works to protect its citizens from the adverse effects of old mining practices and continues to restore abandoned mine lands to safe and productive conditions.

The OSMRE is responsible for monitoring the progress and quality of the LRP's AML program. Monitoring includes providing assistance to strengthen the LRP's program as necessary. To fulfill this role, the OSMRE conducts performance evaluations in accordance with Directive AML-22, including: 1) evaluating the program's annual progress in addressing problems identified in the Enhanced Abandoned Mine Land Inventory System (e-AMLIS) and; 2) evaluating compliance with the requirements of SMCRA, applicable 30 CFR regulations, the approved AML reclamation plan, and grant conditions.

In addition to conducting oversight of Missouri's approved state programs, the OSMRE provides technical assistance, financial assistance, policy assistance, and staff training. This report contains summary information regarding Missouri's programs and their effectiveness in meeting SMCRA's applicable purposes as specified in Section 102. This report covers the Evaluation Year (EY) 2019, from July 1, 2018 to June 30, 2019.

Detailed background information and comprehensive reports for the program elements evaluated during the EY are available for review and copying at the OSMRE, Alton Field Division, 501 Belle Street, Suite 216, Alton, Illinois 62002. To arrange an appointment, contact our office via

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telephone at (618) 463-6460.

The reports are also available at the OSMRE Oversight Documents website at [ODOCs](#). You will need Adobe Acrobat Reader® to view these documents; you can download it at the [Adobe website](#). Follow these steps to gain access to the document of interest:

1. Select Missouri from the drop down box labeled “State.” Also select 2018 as the “Evaluation Year,” and then click “Submit.” You can narrow the search by choosing selections under the “Keyword” or “Category” headings.
2. The oversight documents and reports matching the selected state and evaluation year will appear at the bottom of the page.
3. Select “View” for the document that is of interest and the report will appear for viewing, saving, and/or printing.

The following acronyms are in this report:

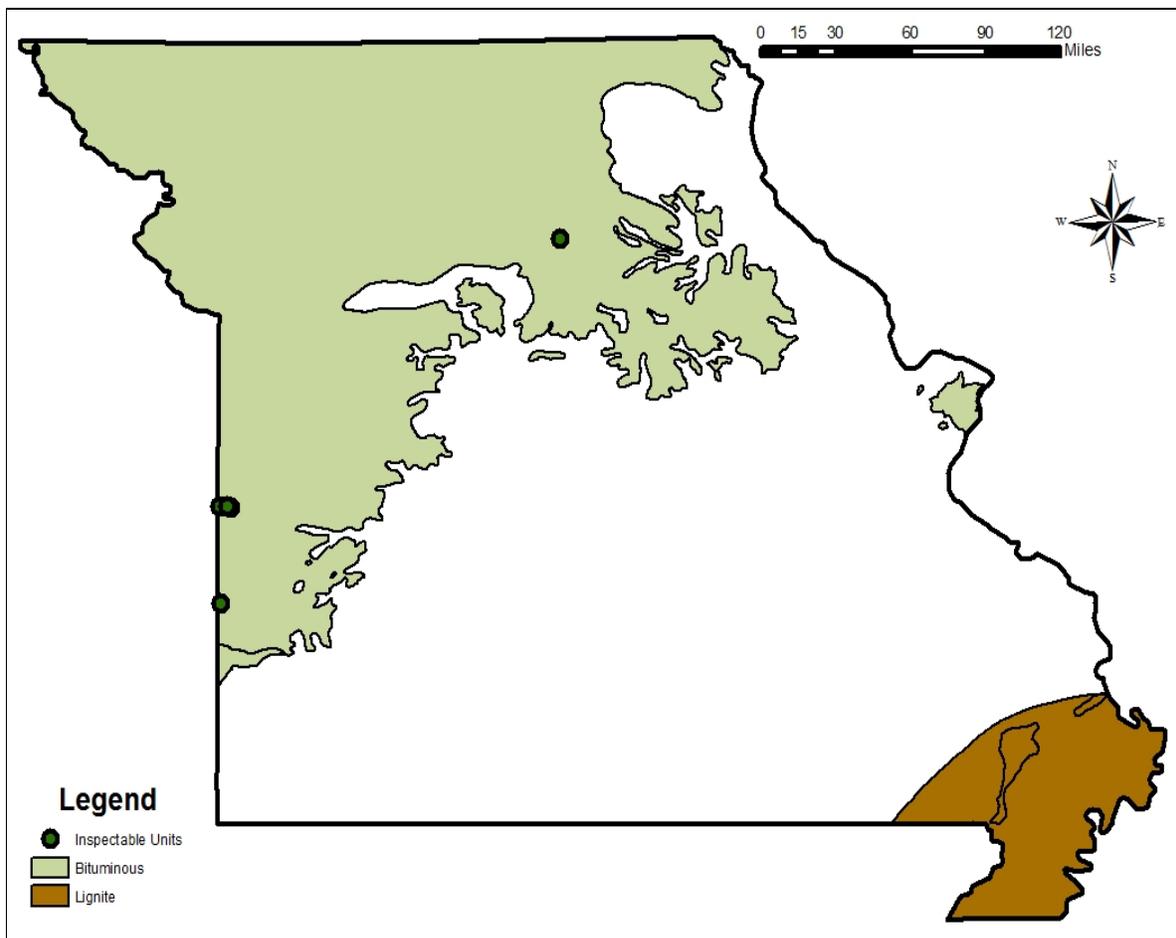
<b>AFD</b>	Alton Field Division
<b>AMD</b>	Acid Mine Drainage
<b>AML</b>	Abandoned Mine Land
<b>ATP</b>	Authorization to Proceed
<b>AVS</b>	Applicant Violator System
<b>e-AMLIS</b>	Enhanced Abandoned Mine Land Inventory System
<b>EY</b>	Evaluation Year
<b>IU</b>	Inspectable Unit
<b>LRP</b>	Missouri Department of Natural Resources, Land Reclamation Program
<b>MCR</b>	Mid-Continent Region-OSMRE
<b>OSI</b>	Off-Site Impact
<b>OSMRE</b>	Office of Surface Mining Reclamation and Enforcement
<b>PTS</b>	Passive Treatment System
<b>SMCRA</b>	Surface Mining Control and Reclamation Act of 1977

## II. OVERVIEW OF COAL MINING IN MISSOURI

### *Coal Resources*

Coal is the most abundant fossil fuel in the world. The United States holds the world's largest estimated recoverable reserves of coal at approximately 28 percent of world supply. Based on current production levels, the United States has enough estimated recoverable reserves of coal to last more than 200 years. Coal is classified into four main types or ranks (anthracite, bituminous, subbituminous, and lignite), depending on the amounts and types of carbon it contains, and on the amount of heat energy it can produce.

Missouri's coal ranks from lignite to high volatile bituminous. Missouri has coal reserves estimated to be 6 billion tons and account for one to two percent of the nation's total. The coal-bearing areas cover about 23,000 square miles or thirty-three percent of Missouri (Figure 1).



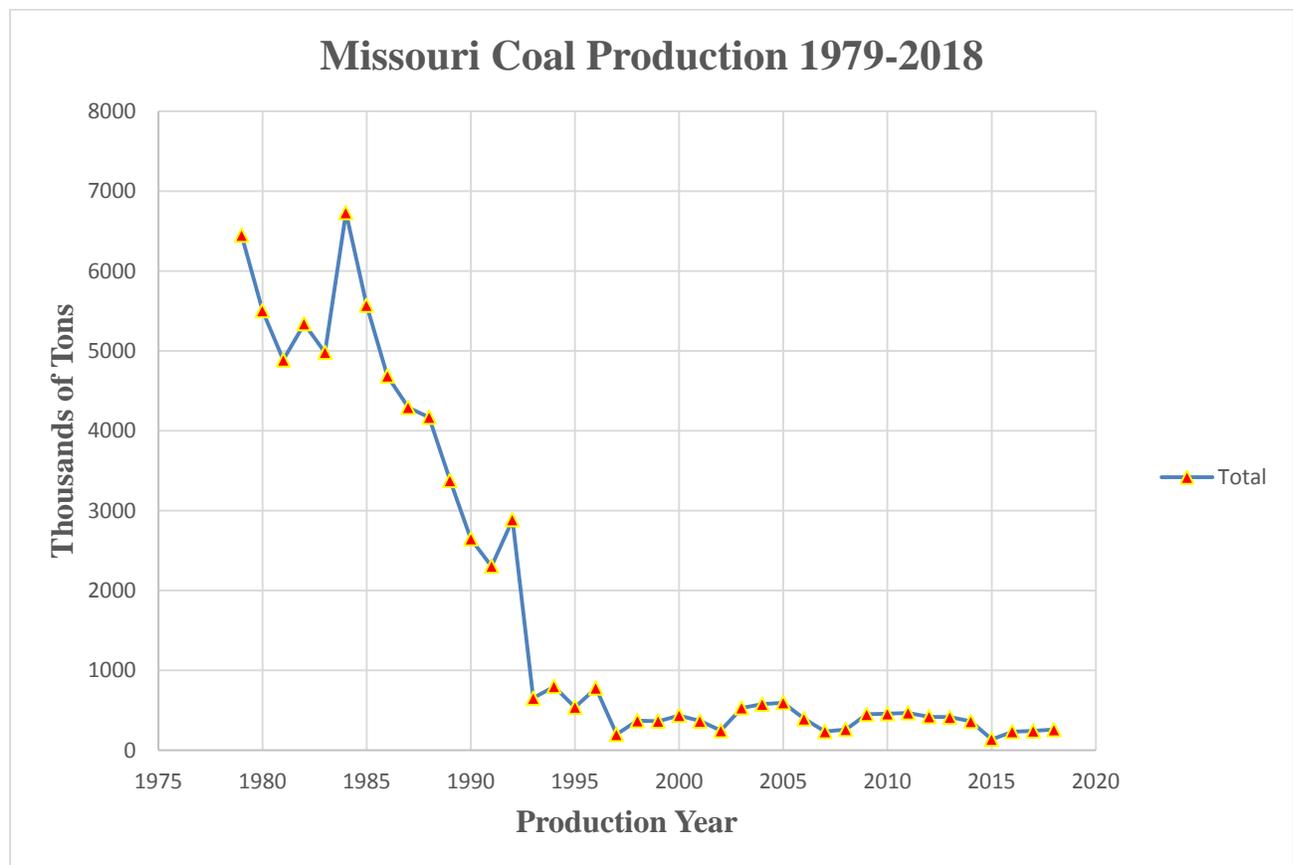
**Figure 1: Location of Missouri Coal Fields and Inspectable Units**

**Historical Highlights**

Missouri has a rich history of coal mining activity. In the late 1840s, coal deposits were located in Missouri, giving it the distinction of being the first state west of the Mississippi River to produce coal for commercial use. Although most of the early coal mines in the state were underground, surface mining began in the mid-1930s and has accounted for virtually all the coal produced in Missouri since the 1960s. Before the enactment of SMCRA in 1977, there were approximately 67,000 acres affected by surface coal mining in 48 Missouri counties.

**Current Trends**

While underground mining was once the major method of coal extraction in the state, in recent decades Missouri coal has come entirely from surface mines due to advances in equipment size and technology. Coal production reached its peak in 1984; nearly seven million tons of coal produced. In 1993, only 627,774 tons of coal were mined due to the state’s largest operator ceasing operations. Coal production in the State has varied since then with the most recent data showing 244,300 tons produced in 2017 and 258,900 tons produced in 2018 (Figure 2).



**Figure 2: Timeline of Coal Production in Missouri**

### *Use of Missouri Coal*

Missouri's coal mines supply coal to customers in Missouri and Kansas for production of cement, heating and industrial steam, and electric power. The coal used at the electric power producers consists of a mixture of approximately 90 percent Powder River Basin coal and ten percent Missouri coal.

### *Abandoned Mine Lands*

The mission of all AML programs is to permanently reclaim abandoned mine sites by abating hazards, reducing/eliminating adverse effects of past coal mining on the environment, and restoring adversely affected lands and water to beneficial use. The overall measure of success of AML programs is the degree to which they are achieving planned reclamation goals by addressing the most critical (highest priority) reclamation needs before addressing lower priority reclamation. The requirements for conducting an approved AML reclamation program are located in 30 CFR Parts 870 through 886.

The SMCRA also allows for expedited abatement of AML problems that are considered emergencies. An "emergency" is defined as a sudden danger or impairment that presents a high probability of substantial physical harm to the health, safety, or general welfare of people before the danger can be abated under normal AML Program operation procedures.

Prior to the passage of SMCRA, Missouri had approximately 67,000 acres of coal mines that affected the landscape throughout the northern and western portions of the state. AML sites may include dangerous mine refuse piles and embankments, burning coal refuse, highwalls, subsidence, open shafts, hazardous mining facilities, polluted water used for agricultural and human consumption, bare acidic soils, coal refuse that pollutes water through soil erosion, sedimentation, and acid mine drainage. The LRP's AML sites are part of the e-AMLIS, maintained jointly by the LRP's AML Program and the OSMRE. Appendix 1 – Part B contains tables that depict the reclamation status of AML sites in Missouri.

In e-AMLIS, AML sites classified and designated with a priority level, based upon their impacts on public health and safety, and environmental quality. These classifications are:

- Priority 1: an AML problem meeting the conditions of SMCRA concerning the protection of public health, safety, and property from extreme danger of adverse effects of mining practices or adjacent land and water reclamation.
- Priority 2: an AML problem ... concerning the protection of public health and safety from adverse effects of mining practices or adjacent land and water reclamation.
- Priority 3: an AML problem ... concerning the restoration of land and water resources and the environment previously degraded by adverse effects of mining practices.

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Priority 1s and Priority 2s are “high priorities,” and in accordance with SMCRA, have increased emphasis for reclamation.

You can find additional information regarding the LRP’s AML program at their [Abandoned Mine Land website](#).

### **III. OVERVIEW OF THE PUBLIC PARTICIPATION AND OUTREACH EFFORTS**

The term “public” includes all stakeholders (i.e., citizenry at large, industry, other federal, state or local agencies, and environmental groups). Opportunities for public participation occur at significant points in the LRP’s Regulatory Program processes and involve the ability of the public to:

- Request that areas be designated as unsuitable for mining;
- Receive notification by advertisement of permit application receipt;
- Review permit and revision applications;
- Contest the decision of the Commission on permit applications and revisions;
- Request an inspection of a mine site;
- Submit blasting, groundwater well, and/or general permit complaints if the public believes a violation of the regulations is taking place;
- Object to proposed bond releases;
- Initiate civil suits; and
- Petition to initiate rulemaking.

The AML Program provides opportunities for public participation and interacts with local associations, citizens, environmental organizations, and other groups regarding:

- Project selection;
- Grant applications;
- Consultations under the National Environmental Policy Act;
- Obtaining right of entry documents; and
- Amendments to the State Reclamation Plan.

The [LRP website](#) contains contact information, mining permit applications and other pertinent information related to the Regulatory and AML Programs. In addition, the LRP produces Biennial Reports that describe current activities the LRP is working on related to coal mining, abandoned mine lands, and industrial and metallic minerals; and posts these to the above referenced website.

The public can also access the LRP's annual evaluation reports and performance agreements via the internet at the OSMRE Oversight Documents website at [ODOCs](#). The Introduction section of this report (page 5) details how to access information using this website.

The LRP and the Alton Field Division (AFD) consider the bi-monthly Missouri Mining Commission public meetings the principal forum for participation from industry, landowners, citizen groups, and other interested parties. Whenever the opportunity arises, the LRP personnel attend and set up displays at public gatherings and conferences, explaining the LRP's responsibilities and accomplishments.

In addition to the Missouri Mining Commission public meetings, for larger AML projects, press releases are given. When ongoing AML reclamation projects attract local news coverage, the LRP personnel take the opportunity to explain the activities and importance of the LRP's AML Program by participating in press interviews. The LRP also provides landowners and the public in general the full extent of public participation in its permitting and bond release processes as provided by the state regulations.

The OSMRE conducts annual outreach efforts and public participation. The AFD accomplished this during EY 2019 by e-mails soliciting comments from the public and interested groups regarding the oversight process, suggestions on additional topics the AFD should consider for review, and suggestions for improvements on future annual evaluations reports. All comments received meeting criteria that falls within the authority of Missouri's coal Regulatory and/or AML approved programs are considered for inclusion in the current or future EY oversight reviews.

#### **IV. MAJOR ACCOMPLISHMENTS AND INNOVATIONS**

This year marks the 39th anniversary of the Regulatory Program and the 37th anniversary of the AML Program in the State of Missouri. The LRP continues to protect the public and minimize environmental impacts within its coalfields.

The AFD monitored the LRP's performance in meeting the goals and objectives of the approved state programs over the last year. The AFD finds that the LRP is successfully implementing both its Regulatory and AML Programs. The oversight reviews used to reach this conclusion are included in Sections V and VI of this report.

Major accomplishments and innovations for this year include:

##### **Title V (Regulatory Program)**

### ***Environmental Compliance***

The LRP administers its program in a way that effectively protects citizens and the environment from adverse impacts resulting from surface coal mining activities. Environmental compliance by coal mining operators has continued to improve; the LRP did not issue any Notices of Violation this EY and 100 percent of Missouri's permitted mine sites were free from off-site impacts (OSIs).

### **Title IV (Abandoned Mine Land Program)**

The LRP continues to successfully implement its AML Program to meet the applicable purposes of SMCRA. During this EY, the LRP AML Program eliminated public health and safety hazards and environmental problems related to past mining.

Appendix 1 – Part B – Tables 2 and 3 provide additional data on the LRP accomplishments in eliminating coal related Priority 1 and Priority 2 health and safety hazards (Priority 1 includes emergencies), and Priority 3 environmental problems.

### ***Program Amendment Status***

During EY 2019, the OSMRE reviewed the proposed revisions to the LRP's program regulations regarding the Executive Order 17-03 (Red Tape Reduction Initiative). The amendment (MO-048-FOR) proposes to rescind multiple sections of its Missouri Coal Mining Regulations and continue to make Missouri's program no less effective than the Federal regulations. This proposed amendment was published in the Federal Register on May 1, 2019 and is anticipated to be finalized during EY 2020.

## **V. SUCCESS IN ACHIEVING THE PURPOSES OF SMCRA**

### **Title V (Regulatory Program)**

The OSMRE annually evaluates three aspects of all state regulatory programs to gain a national perspective of SMCRA, including: the number of observed OSIs, the number of mined and reclaimed acres that meet the performance release requirements for the various phases of reclamation, and a component of customer service provided by the state. Detailed topic-specific reports for each of these national topics provide additional information on how the AFD conducted the following evaluations, and they are available online at [ODOCs](#) or at the AFD Office.

#### **A. Off-Site Impacts**

A primary focus of the SMCRA is the protection of the public, property, and the environment from adverse effects of active coal mining operations. The goal, therefore, is that there are no impacts outside the areas authorized for disturbance by a coal mining permit (off-site impacts). To accomplish this goal, State programs are continually striving to prevent OSIs from occurring. The AFD and the LRP conducted a joint evaluation in EY 2019 to determine the effectiveness of

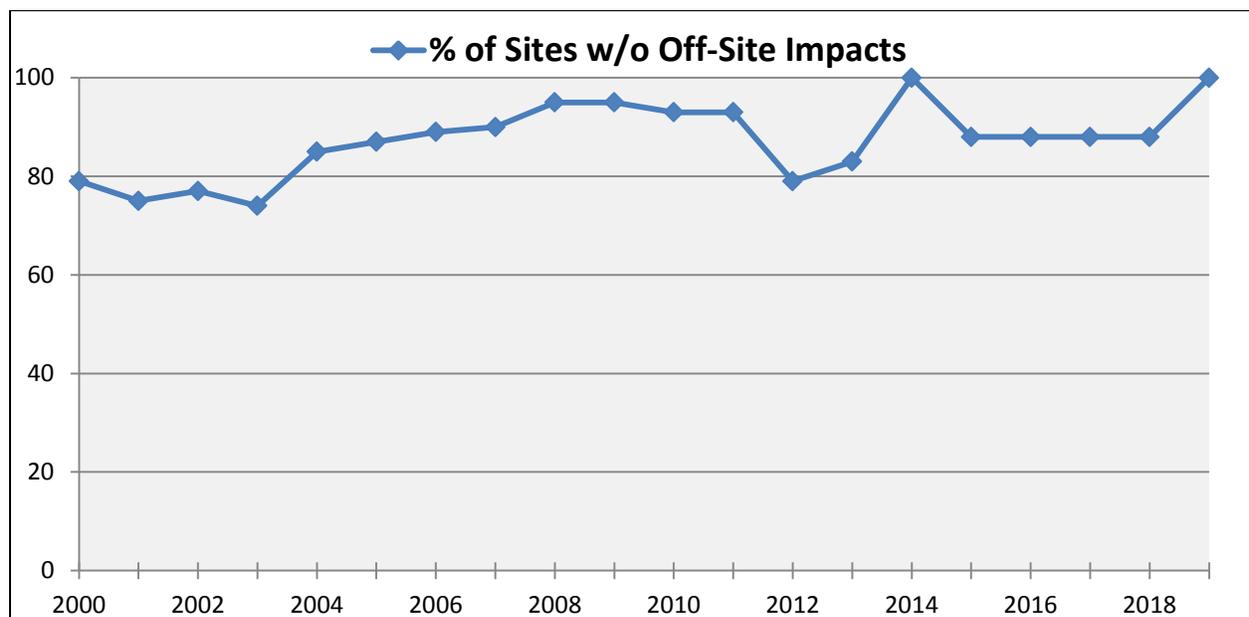
the LRP’s Program in protecting the public and the environment from OSIs caused by surface mining and reclamation operations. Conclusions are based on data collected from the AFD’s federal oversight inspections along with data reported by the LRP.

An OSI is defined as anything resulting from a surface coal mining and reclamation activity or operation that causes a negative effect on resources (people, land, water, structures) where that impact is intended to be minimized or prevented by the SMCRA or the applicable State program. The applicable State program must regulate or control the mining or reclamation activity or result of the activity causing an OSI. In addition, the impact on the resource must be substantiated as being related to a mining and reclamation activity and must be outside the area authorized by the permit for conducting mining and reclamation activities. OSIs may be identified within the permit boundary if the impact is outside the bonded area authorized by the permit for mining and reclamation activities.

An Inspectable Unit (IU) is defined by the regulatory authority and may include multiple small and neighboring Permanent Program Permits that have been grouped together as one IU, which is the case in some instances in Missouri, for inspection efficiency.

There were no OSIs reported by the LRP in EY 2019.

The AFD conducted three inspections at Continental Coal, Inc. – Cottonwood Creek, Hume West, and Foster South mines. The inspector did not observe any OSIs during the inspections. The percentage of the LRP’s IUs free from OSIs during EY 2019 was 100 percent, the figure below shows IUs free of OSIs over time (Figure 3). Appendix 1 – Part A, Table 5 provides additional data on the type of resource affected and the degree of impact.



**Figure 3: Percent of Sites Free of Off-Site Impacts**

## **B. Reclamation Success**

The number of acres that meet State bond release standards that have had the performance bond released is a measure of the effectiveness of the LRP in ensuring reclamation success. The bond release phases (i.e., Phase I, Phase II, and Phase III) are as defined in 30 CFR 800.40(c). Phase I release is when, at a minimum, “the operator completes the backfilling, regrading ... and drainage control of a bonded area in accordance with the approved reclamation plan.” Phase II release is when, at a minimum, “revegetation has been established on the regraded mined lands in accordance with the approved reclamation plan.” Phase III release is when “the operator has completed successfully all surface coal mining and reclamation activities,” and “reclamation requirements of the Act and the permit are fully met.”

The AFD conducted a bond release inspection on the only bond release application received by the LRP during EY 2019. The AFD evaluated 73.0 phase III acres which the LRP recommended release of bond. The AFD agreed with the LRP that 100 percent of the acres the LRP recommended for bond release within the AFD sample were successfully reclaimed and eligible for bond release

The LRP continues to encourage operators to obtain bond release as quickly as regulations allow. A timely release results in a faster return of the land to property owners and helps to minimize cost of the LRP’s Regulatory Program.

## **Contemporaneous Reclamation**

The OSMRE Directive REG-8 defines contemporaneous reclamation to be the difference between the time when lands are disturbed and when they achieve phased bond release. Contemporaneous reclamation was not evaluated as a separate study during EY 2019. The LRP however, reports that there were no violations issued nor citizen complaints received pertaining to contemporaneous reclamation during the evaluation year.

## **C. Customer Service**

Effective customer service is an essential component of the Regulatory Program, and a responsibility that State regulatory authorities assume in carrying out the purposes of the SMCRA.

The Customer Service study oversight review was to evaluate the effectiveness of the LRP cultural, historic, and archaeological resources permit processes and procedures in accordance with applicable regulations. Specifically, this review was to document the LRP’s implementation of the approved State program as it relates to identification and preservation of cultural, historic, and archaeological resources that may be affected and such information and documentation is available to the public for review. The AFD did not complete this oversight review during this evaluation year due to lack of staffing resources. The review may be continued and finalized in EY 2020 or a future evaluation year.

**Title IV (Abandoned Mine Land Program)**

***Non-Emergency Construction Activities***

To date, Missouri has expended over \$61 million on the ground to reclaim priority AML features (i.e. vertical openings, dangerous highwalls, etc.). This does not include program administration or project design costs.

The AFD issues the LRP an Authorization to Proceed (ATP), allowing construction activities at non-emergency project sites to begin. The LRP’s AML Program requests this authorization after conceptual design and environmental reviews are finished for a site.

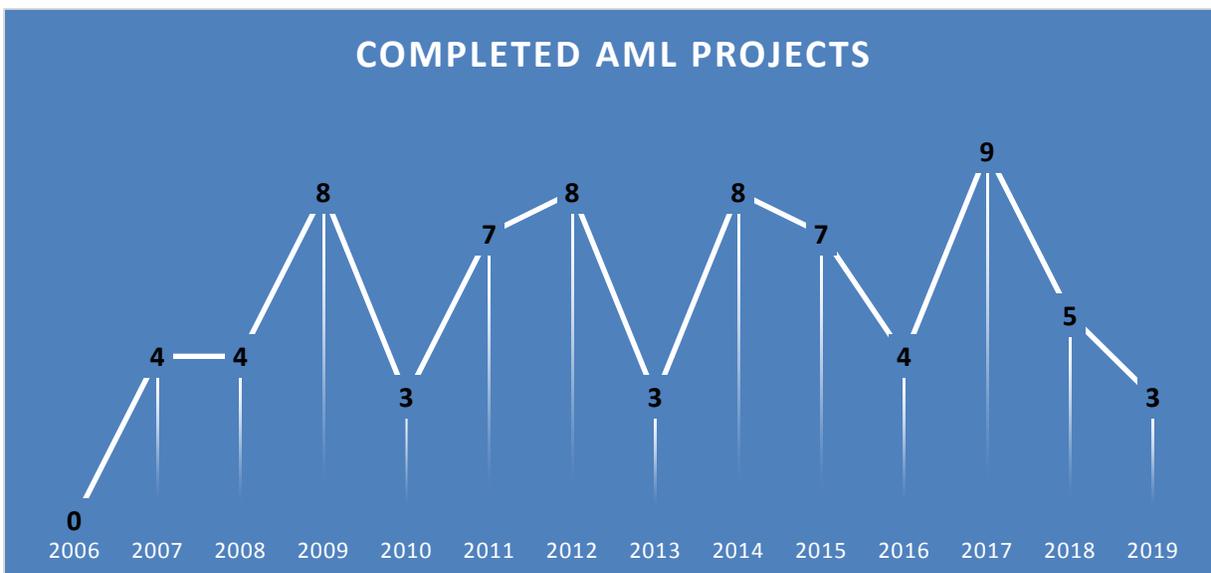
The LRP’s AML Program completed two non-emergency coal projects this EY (Figure 4 on page 15, Table 6 Appendix 1 – Part B).

***Coal Projects:***

**Cooper Creek Reclamation Project** – This project, located near Deepwater, MO in rural Henry County, reclaimed 30 acres of barren and eroding mine spoils, two areas of dangerous highwalls totaling approximately 1,400 feet and one hazardous waterbodies. The end use of this former AML will be wildlife habitat with the possibilities of becoming hayland once again when the soil and vegetation stabilize.

***Non-Coal Projects:***

The LRP reclaimed two non-coal high priority projects this EY. Expenditure of AML funds for reclamation of non-coal high priority hazards are authorized pursuant to SMCRA following request from the Governor and approval by OSMRE.



**Figure 4: Number of Completed Emergency and Non-Emergency Reclamation Projects**

***Emergency Projects:***

The LRP has authority for the administration of an AML Emergency Program. Emergency projects are authorized by a blanket ATP, or by an individual ATP similar to non-emergency projects. During EY 2019, the LRP did not respond to any coal related AML emergencies. The LRP mitigated the dangers of two non-coal sites known as Bramar Drive and Cherry Street.

**VI. NATIONAL PRIORITY AND GENERAL OVERSIGHT TOPIC REVIEWS**

National Priority Reviews and General Oversight Topic Reports are located on the OSMRE's website listed on the Introduction (page 5) of this report. Individual reports prepared by the AFD are part of the oversight process for each state and contain findings and details regarding the evaluation of state specific elements.

**A. National Priority Reviews**

National Priority Reviews are oversight topic reviews selected by the OSMRE to review nationwide. There were no National Priority Reviews during this EY.

**B. General Oversight Topic Reviews**

General Oversight Topic Reviews conducted as specified in the LRP's Performance Agreement/Evaluation Plan.

**Title V (Regulatory)**

**Oversight Inspection Activity**

During EY 2019, the AFD conducted oversight inspections in Missouri to evaluate the effectiveness of the LRP's Program in implementing its rules and regulations that specifically target mining operation performance standards. Information gathered from these inspections indicates how well the LRP's Program is ensuring environmental protection, reclamation success, and preventing OSIs. The number of inspections conducted in Missouri was based on the requirements of the Directive REG-8. The number of IUs varies greatly in each state with Missouri falling within the five to 1000 IU category. The AFD's required inspection target for Missouri was set at two IUs this EY and the AFD completed three inspections. The AFD conducts a variety of inspection types each year. All inspections are focused and will be either complete or partial and joint or non-joint. The total for each of the two groupings will equal the total three inspections performed. The AFD also conducts independent inspections which are unannounced oversight inspections. The state receives short notice (generally less than 24 hours) and may choose to accompany the AFD on these inspections. Independent inspections validate and enhance the credibility of both State regulatory programs and the AFD's oversight. Table 1 shows the number of each inspection type conducted in Missouri this EY.

EY 2019 Inspections Conducted	EY 2019 Inspection Target	Percent Target Inspections Completed
3	2	100%

Inspection Types

Complete	Partial	Joint	Non-Joint	Independent
1	2	3	0	1

**Table 1: Federal Oversight Inspections**

**State Inspection Activity**

The LRP’s regulations at 10 CSR 40-8.030 defines the inspection frequencies required for active, inactive, and abandoned operations. An active operation is required to be inspected an average of at least one partial inspection per month and an average of at least one complete inspection per calendar quarter. A complete inspection also counts as one partial inspection; thus, the minimum number of inspections required annually would be four complete inspections and eight partial inspections.

An inactive operation is required to be inspected an average of at least one complete inspection per calendar quarter. Thus, the minimum number of inspections required annually for inactive operations would be four complete inspections and zero partial inspections.

In Missouri, an abandoned/forfeited site is inspected on a set frequency commensurate with the public health and safety and environmental considerations present at each specific site, but in no case less than one complete inspection per calendar year. There are no abandoned/bond forfeiture sites in Missouri.

The LRP maintains a database that identifies coal mining and reclamation operations by IU, permittee name, mine name, permit number, mine type, mine status, and inspection frequency. The LRP updates the database as needed, but not less than once per quarter. The AFD checks the database to ensure mandatory inspection frequencies are being met.

During EY 2019, the LRP met its mandatory inspection frequency on 100 percent of the IUs (Appendix 1 – Part A, Table 10). In addition, there were no Notices of Violation issued by the LRP during the EY.

**Title IV (Abandoned Mine Land)**

### **Field Assessment of Abandoned Mine Land Reclamation Projects**

The AFD conducted a field assessment on three funded and completed AML Projects to determine if the LRP is ensuring that the project and program goals are satisfied. Of the three AML projects assessed for this oversight review, one was undergoing active construction reclamation, one was post-construction, and one was in the pre-construction stage of reclamation.

The AFD concluded that the LRP is:

- 1) Accurately describing pre-construction conditions on AML sites,
- 2) Effectively managing active AML site reclamation construction contracts during construction,
- 3) Vigilantly complying with permit and mitigation conditions, and
- 4) Ultimately ensuring that project and program goals are satisfied.

### **Abandoned Mine Land Inventory System (e-AMLIS)**

The AFD and the LRP AML Program utilize an “Enhanced Abandoned Mine Land Inventory System e-AMLIS Procedures Plan” which clarifies procedures for implementing e-AMLIS unique to the LRP’s AML Program. The plan includes various requirements for implementing the OSMRE Directive AML-1, signed December 12, 2012, and its accompanying AML Inventory Manual. Required information, including but not limited to problem type, priority, costs, location, etc., need entered into the e-AMLIS before the ATP can be issued. The AFD reviews the problem types, priority, and costs entered into e-AMLIS and either approves each problem and priority or requests further information. The AFD must approve additions or amendments to the e-AMLIS before an ATP is issued and reclamation begins.

During EY 2019, the AFD processed six e-AMLIS approvals/amendments and verified that all supporting documentation was uploaded to reflect priorities, funding status, etc., in accordance with Directive AML-1. The LRP’s AML program is effectively implementing procedures consistent with established policy for e-AMLIS.

Information can be viewed at the OSMRE’s website at [e-AMLIS](#). Additionally, Tables 1-5 in Appendix 1 – Part B provide a status of the AML inventory of coal related hazards.

## **VII. PROGRAM PROBLEMS AND ISSUES**

The OSMRE has initiated a corrective action process implemented if there are problems identified with a state’s approved Regulatory or AML program, or with the state’s actions under those programs. There were no program-wide problems or issues identified during this EY.

**VIII. OSMRE ASSISTANCE**

The OSMRE provides technical assistance and technology support to state Regulatory and AML programs at the individual state level on project specific efforts, and at the national level in the form of national meetings, forums, and initiatives. The OSMRE provides direct technical assistance in project and problem investigation, design and analysis, permitting, technical guideline development, training, and support.

During EY 2019, the OSMRE provided the LRP with the following assistance:

**Funding**

The primary mode of OSMRE assistance to LRP is through grant funding. The LRP received \$202,855 for the operation of the Regulatory Program in EY 2019. The OSMRE provided 50 percent of the total funding necessary for the Regulatory Program operation and 100 percent funding for the AML Program, which totaled \$2,802,000 in EY 2019. The AML Program grant cycle stays within the EY. Table 2 below contains the grant amounts for the last five years.

Grants Awarded in Missouri		
Year	Regulatory Grant Amount	AML Grant Amount
2019	\$202,855	\$2,802,000
2018	\$204,899	\$2,793,000
2017	\$201,946	\$2,796,000
2016	\$193,159	\$2,781,000
2015	\$182,568	\$2,784,000
Regulatory and AML Grant Years are July 1 – June 30		

**Table 2: Regulatory and AML Grants Awarded Since 2015**

**Technical Assistance*****Acid Mine Drainage Remediation***

The SMCRA includes provisions to clean up AML-related pollution discharges and prevent the creation of future discharges of Acid Mine Drainage (AMD). The term acid mine drainage, is used, in this context, to refer to any pollution discharge emanating from past mining operations. Many of these discharges are, in fact, alkaline with high levels of metals.

The OSMRE provides assistance to the LRP AML Program for continuing clean-up of acid mine drainage discharges. In EY 2019, the OSMRE's Mid-Continent Region provided technical assistance in three AML Project Areas known as Old Bevier, Germantown and Huntsville.

***Old Bevier***

The LRP is overhauling the Old Bevier Passive Treatment System (PTS) south of Bevier in Macon County, MO. The Old Bevier PTS was initially constructed in 1990 and

reconstructed in 2000 with MCR assistance. After 19 years of operation, the depleted treatment media necessary to chemically react for AMD removal will be replaced. Technical assistance included an assessment of the geochemistry of the PTS inlet AMD, which significantly improved since the 1980's, the development of a rehabilitation plan, and an evaluation of the toxicity of the metal precipitated that have been excavated from the 2 vertical flow pond treatment cells. Due to the low toxicity encountered, the LRP plans to haul this material to a local landfill once the excavated material has dried. Of special note is that large concentrations of rare earth elements were found in these precipitates during the EY 2019 study, but recovery is not deemed economic at this time. A paper was presented at the 2019 conference of the American Society of Mining and Reclamation discussing this rehabilitation effort.

The MCR also assisted the LRP at the heavily mined area known as the Germantown site in rural Henry County. Post-construction evaluations were conducted on five small PTS systems constructed in 2015 and 2016 to see how well they were removing AMD. Several operational improvements have been conducted following the MCR scientist's suggestions to make the systems more efficient and effective. Additional AMD site investigations and assistance are planned in the 2020 EY. A scientific paper was presented at the 2019 American Society of Mining and Reclamation conference discussing the technology and efforts put forth to combat AMD on this site.

The scientists and hydrologists of the MCR assisted the LRP with site investigations near Huntsville, Missouri in Macon County. Three AML sites known as Calfee Slope, the Mitchell Mine and the Huntsville Gob discharge toxic amounts of AMD in this area and these were the focus of a joint water sampling effort to estimate remediation costs and also to see if Rare Earth Elements could also be obtained from the AMD. A scientific paper was also produced by the MCR and the LRP on the study of this area and presented at the 2019 American Society of Mining and Reclamation conference.

### ***Blasting Plan***

The LRP requested technical assistance from the MCR with evaluating the proposed blasting plan for an active coal mine near Foster, Missouri. With assistance from the OSMRE-Appalachian Region Mining/Explosives Engineer, a strategy for coal mine blast monitoring and compliance was submitted to the LRP.

### ***Seismographs***

Through the AFD, the LRP requested technical assistance for use of a seismograph for evaluating blasting operations at an active coal mine near Foster, Missouri. The AFD staff coordinated with the MCR's Mining Engineer to provide the LRP with a seismograph for use in the field. Data received from the seismographs is being evaluated to ensure compliance with air blast and ground vibration.

### ***Small Unmanned Aerial Vehicles***

In partnership with the LRP, the MCR utilized its advanced drone system, known as the 3DR SitedScan, to fly the Cooper AML site. The pilot was able to provide real time aerial imagery and video of the site. The pilot provided this data to the State to access the condition of the newly reclaimed site. The LRP specialists and pilot were able to use this imagery to spot hot spots or gaps in the vegetative reestablishment for monitoring. Flying an AML site before reclamation, during reclamation and after reclamation is an incredibly cost effective way to monitor and survey the vast acreages on AML sites.

### ***Interagency Coordination***

There were no specific requests during EY 2019 for interagency coordination.

### ***Training***

The OSMRE offers National Technical Training Program courses throughout the year which serves to build and update technical expertise and fosters consistent application of standards. Training provided in each of the disciplines involved in implementation of SMCRA, which include aquatic biology, geology, engineering, hydrology, blasting, agronomy, and botany. The other training services that OSMRE offers is Technical Innovation and Professional Services which educates students in the use of state-of-the-art scientific and engineering tools. It also provides specialized training for off-the shelf applications tailored to SMCRA responsibilities. The training provided can be found nowhere else and is considered a “one of a kind” opportunity. SMCRA application of those tools represents the most requested and widely supported component of the Technical Innovation and Professional Services program.

Eight LRP staff attended six National Technical Training Program courses. Two LRP staff members attended two Technical Innovation and Professional Services classes.

## **IX. TABLE FOOTNOTES**

### **Regulatory Program**

The following footnotes are in reference to table data located in *Title V: Summary of Core Data to Characterize the Regulatory Program, Appendix 1 – Part A*.

Table 1 – None

Table 2 – None

Table 3 – Permits Allowing Special Categories of Mining: The total number of active and inactive permits is the total number of active and inactive permits that allow the practice at the end of the Evaluation Year. A single permit may encompass several of the special categories of mining so no attempt should be made to use this data as a cumulative total of permits with special categories of mining.

Table 4 – None

Table 5 – None

Table 6 – Surface Coal Mining and Reclamation Activity: Data regarding bond releases not collected according to the specific methods outlined by OSMRE and REG-8. Data reported by the state accurately reflects phase I, II, and III acreage released during the Evaluation Year.

Table 7 – None

Table 8 – None

Table 9 – None

Table 10 – None

Table 11 – None

Table 12 – None

Table 13 – None

Table 14 – None

Table 15 – None

**AML Program**

The following footnotes are in reference to table data located in *Title IV: Summary of Core Data to Characterize the AML Program, Appendix 1 – Part B*.

Note: Tables 1-5 are e-AMLIS data driven and capture Coal related reclamation activities only. Table 6 data are reported by the Missouri Program. Table 7 data are reported by the MCR-Grants Team.

Table 1–3 – Comparisons between the Tables should be limited. Each table is stand-alone and does not necessarily represent comparable totals based on how the Priority 3 environmental problem features are being reported. Additionally, the data is provided as a snap-shot in time, updates to data may reflect discrepancies in previous EY reporting.

Table 1 – The amount in Unfunded totals of \$60,288,240 only reflects Priority 1, Priority 2 and Stand Alone Priority 3 problems. Any problems that are elevated due to adjacency are not included in this total. Missouri's complete coal related inventory costs are the sum of this unfunded total, \$60,288,240 and the Total on AML Table 3 \$71,216,965 less the Stand Alone Total of \$16,420,171. The result is an inventory of \$115,085,024.00 for coal related problems.

Table 2 – None

Table 3 – None

Table 4 – None

Table 5 – None

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Table 6 – Includes Non-Coal Projects

Table 7 – None

**APPENDIX 1, PART A**

**Title V: Summary of Core Data to Characterize the Regulatory Program**

The following tables present summary data pertinent to mining operations and regulatory activities under the LRP's regulatory program. Unless otherwise specified, the reporting period for the data contained in the tables is the EY. Other data and information used by the AFD in its evaluation of the LRP's performance are available for review in the evaluation file maintained by AFD.

Because of the enormous variations from state to state in the number, size, and type of coal mining operations and the differences between state programs, the summary data should not be used to compare one state to another.

**List of Tables**

- Table 1 Coal Produced for Sale, Transfer, or Use
- Table 2 Permanent Program Permits, Initial Program Sites, Inspectable Units, and Exploration
- Table 3 Permits Allowing Special Categories of Mining
- Table 4 Permitting Activity
- Table 5 Off-site Impacts
- Table 6 Surface Coal Mining and Reclamation Activity
- Table 7 Bond Forfeiture Activity
- Table 8 Regulatory and AML Programs Staffing
- Table 9 Funds Granted to State by OSMRE
- Table 10 State Inspection Activity
- Table 11 State Enforcement Activity
- Table 12 Lands Unsuitable Activity
- Table 13 OSMRE Oversight Activity
- Table 14 Status of Action Plans
- Table 15 Land Use Acreage (Optional)

Missouri

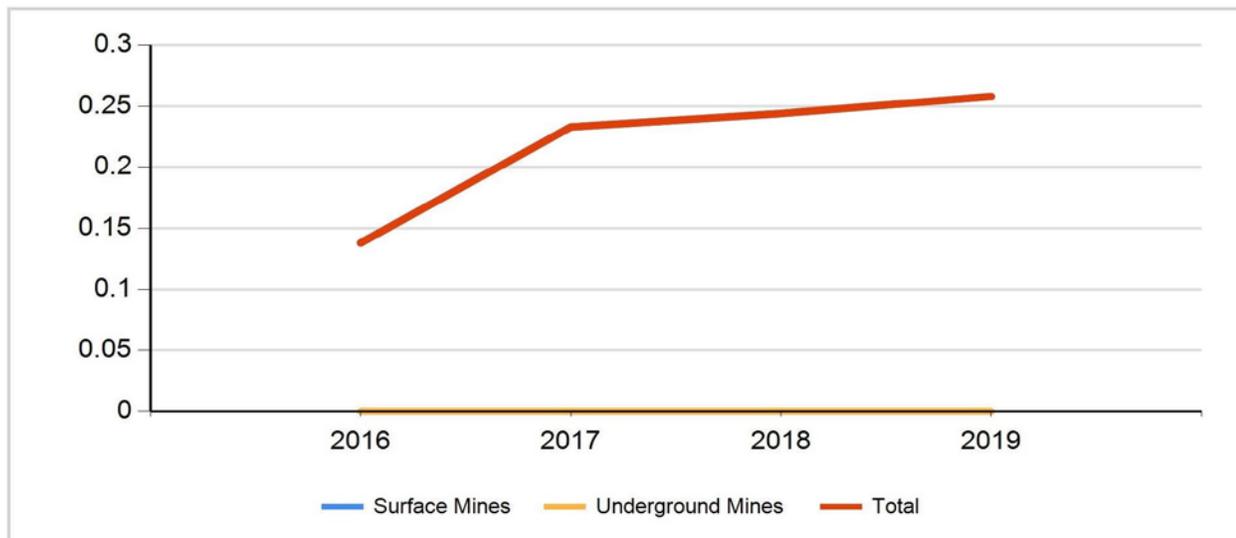
EY 2019, ending June 30, 2019

**TABLE 1**

<b>COAL PRODUCED FOR SALE , TRANSFER, OR USE<sup>A</sup></b> (Millions of short tons)			
<b>Calendar Year</b>	<b>Surface Mines</b>	<b>Underground Mines</b>	<b>Total</b>
2015	0.1	0.0	0.1
2016	0.2	0.0	0.2
2017	0.2	0.0	0.2
2018	0.3	0.0	0.3

<sup>A</sup> Coal production is the gross tonnage (short tons) and includes coal produced during the calendar year (CY) for sale, transfer or use. The coal produced in each CY quarter is reported by each mining company to OSM during the following quarter on line 8(a) of form OSM-1, "Coal Reclamation Fee Report." Gross tonnage does not provide for a moisture reduction. OSM verifies tonnage reported through routine auditing of mining companies. This production may vary from that reported by other sources due to varying methods of determining and reporting coal production.

**TABLE 1**  
**COAL PRODUCED FOR SALE, TRANSFER, OR USE**  
**DURING THE CALENDAR YEAR**  
(Millions of short tons)



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TABLE 2

PERMANENT PROGRAM PERMITS, INITIAL PROGRAM SITES, INSPECTABLE UNITS, AND EXPLORATION														
Mines and Other Facilities	Numbers of Permanent Program Permits and Initial Program Sites								Insp. Units <sup>1, 2</sup>	Area in Acres				Total Area
	Permanent Program Permits				Initial Program Sites					Permanent Program Permits (Permit Area)		Initial Program Sites		
	Active	Inactive	Abandoned	Total	Active	Inactive	Abandoned	Total		Federal Lands	State/Tribal and Private Lands	Federal Lands	State/Tribal and Private Lands	
Surface Mines	11	0	0	11	0	0	0	0	8	0	2,957	0	0	2,957
Underground Mines	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Facilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>2,957</b>	<b>0</b>	<b>0</b>	<b>2,957</b>
Permanent Program Permits and Initial Program Sites (Number on Federal Lands: 0)				Total Number:		11		Average Acres per Site:				268.82		
Average Number of Permanent Program Permits and Initial Program Sites per Inspectable Unit (IU):				Total Number:		1.38		Average Acres per IU:				369.63		
Permanent Program Permits in Temporary Cessation:				Total Number:		0		Number More than 3 Years:				0		
EXPLORATION SITES		Total Number of Sites			Sites on Federal Lands <sup>4</sup>			Exploration Inspectable Units						
Exploration Sites with Permits:		0			0			0						
Exploration Sites with Notices:		0			0			0						
<sup>1</sup> An Inspectable Unit may include multiple small and neighboring Permanent Program Permits or Initial Program Sites that have been grouped together as one Inspectable Unit, or conversely, an Inspectable Unit may be one of multiple Inspectable Units within a Permanent Program Permit. <sup>2</sup> Total Inspectable Units calculation includes Exploration Sites Inspectable Units <sup>3</sup> When a Permanent Program Permit or Initial Program Site contains both Federal and State and Private lands, the acreage for each type of land is in the applicable column. <sup>4</sup> The number of Exploration Sites on Federal lands includes sites with exploration permits or notices any part of which is regulated by the state under a cooperative agreement or by OSM pursuant to the Federal Lands Program, but excludes exploration sites that are regulated by the Bureau of Land Management														

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TABLE 3

<b>PERMITS ALLOWING SPECIAL CATEGORIES OF MINING</b>			
<b>Special Category of Mining</b>	<b>30 CFR Citation Defining Permits Allowing Special Mining Practices</b>	<b>Numbers of Permits</b>	
		<b>Issued During EY</b>	<b>Total Active and Inactive Permits</b>
Experimental Practice	785.13(d)	0	N/A
Mountaintop Removal Mining	785.14(c)(5)	0	N/A
Steep Slope Mining	785.15(c)	0	N/A
AOC Variances for Steep Slope Mining	785.16(b)(2)	0	N/A
Prime Farmlands Historically Used for Cropland	785.17(e)	1	11
Contemporaneous Reclamation Variances	785.18(c)(9)	0	4
Mining on or Adjacent to Alluvial Valley Floors	785.19(e)(2)	0	N/A
Auger Mining	785.20(c)	0	N/A
Coal Preparation Plants Not Located at a Mine Site	785.21(c)	0	N/A
In-Situ Processing	785.22(c)	0	N/A
Remining	773.15(m) and 785.25	0	N/A
Activities in or Within 100 Feet of a Perennial or Intermittent Stream	780.28(d) and/or (e) 784.28(d) and/or (e)	0	1

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TABLE 4

PERMITTING ACTIVITY												
Type of Application	Surface Mines			Underground Mines			Other Facilities			Totals		
	App. Rec.	Issued/ Appvd	Acres	App. Rec.	Issued/ Appvd	Acres <sup>1</sup>	App. Rec.	Issued/ Appvd	Acres	App. Rec.	Issued/ Appvd	Acres
New Permits	0	0	0	0	0	0	0	0	0	0	0	0
Renewals	0	0		0	0		0	0		0	0	
Transfers, sales, and assignments of permit rights	0	0		0	0		0	0		0	0	
Small operator assistance	0	0		0	0		0	0		0	0	
Exploration permits										0	0	
Exploration notices <sup>2</sup>											0	
Revisions that do not add acreage to the permit area	2	2		0	0		0	0		2	2	
Revisions that add acreage to the permit area but are not incidental boundary revisions	1	1	114	0	0	0	0	0	0	1	1	114
Incidental boundary revisions	0	0	0	0	0	0	0	0	0	0	0	0
<b>Totals</b>	<b>3</b>	<b>3</b>	<b>114</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>3</b>	<b>114</b>
Permits terminated for failure to initiate operations:							Number:	0	Acres:		73.0	
Acres of Phase III bond releases (Areas no longer considered to be disturbed):									Acres:		73.0	
Permits in temporary cessation							Notices received:	0	Terminations:		0	
Midterm permit reviews completed							Number:	0				
<sup>1</sup> Includes only the number of acres of proposed surface disturbance												
<sup>2</sup> State approval not required. Involves removal of less than 250 tons of coal and does not affect lands designated unsuitable for mining.												

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TABLE 5

OFF-SITE IMPACTS EXCLUDING BOND FORFEITURE SITES													
RESOURCES AFFECTED		People			Land			Water			Structures		
DEGREE OF IMPACT		Minor	Moderate	Major	Minor	Moderate	Major	Minor	Moderate	Major	Minor	Moderate	Major
TYPE OF IMPACT EVENT	NUMBER OF EVENTS												
Blasting	0	0	0	0	0	0	0	0	0	0	0	0	0
Land Stability	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydrology	0	0	0	0	0	0	0	0	0	0	0	0	0
Encroachment	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

Total Number of Inspectable Units<sup>1</sup>: 9  
 Inspectable Units with one or more off-site impacts: 0  
 Exploration Inspectable Units with one or more off-site impacts<sup>2</sup>: 0  
 Inspectable Units free of off-site impacts: 9 % of Inspectable Units free of off-site impacts<sup>4</sup>: 100

<sup>1</sup> Total number of Inspectable Units is (1) the number of active and inactive inspectable units at the end of the Evaluation Year and (2) the number of Inspectable Units that were final bond released or removed during the Evaluation Year

<sup>2</sup> Exploration Inspectable Units with one or more off-site impacts is a subset of Inspectable Units with one or more off-site impacts

OFF-SITE IMPACTS AT BOND FORFEITURE SITES													
RESOURCES AFFECTED		People			Land			Water			Structures		
DEGREE OF IMPACT		Minor	Moderate	Major	Minor	Moderate	Major	Minor	Moderate	Major	Minor	Moderate	Major
TYPE OF IMPACT EVENT	NUMBER OF EVENTS												
Blasting	0	0	0	0	0	0	0	0	0	0	0	0	0
Land Stability	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydrology	0	0	0	0	0	0	0	0	0	0	0	0	0
Encroachment	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

Total Number of Inspectable Units<sup>3</sup>: 0  
 Inspectable Units with one or more off-site impacts: 0  
 Inspectable Units free of off-site impacts: 0 % of Inspectable Units free of off-site impacts<sup>4</sup>: 0

<sup>3</sup> Total number of Inspectable Units is (1) the number of bond forfeiture sites that were reclaimed during the Evaluation Year and (2) the number of bond forfeiture sites that were unreclaimed at the end of the Evaluation Year

TOTAL OFF-SITE IMPACTS INCLUDING BOND FORFEITURE SITES													
RESOURCES AFFECTED		People			Land			Water			Structures		
DEGREE OF IMPACT		Minor	Moderate	Major	Minor	Moderate	Major	Minor	Moderate	Major	Minor	Moderate	Major
TYPE OF IMPACT EVENT	NUMBER OF EVENTS												
Blasting	0	0	0	0	0	0	0	0	0	0	0	0	0
Land Stability	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydrology	0	0	0	0	0	0	0	0	0	0	0	0	0
Encroachment	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

Total Number of Inspectable Units<sup>5</sup>: 9  
 Inspectable Units with one or more off-site impacts: 0  
 Exploration Inspectable Units with one or more off-site impacts: 0  
 Inspectable Units free of off-site impacts: 9 % of Inspectable Units free of off-site impacts<sup>4</sup>: 100

<sup>4</sup> % of Inspectable Units free of off-site impacts is based on the number of Inspectable Units during the Evaluation Year. The number of Inspectable Units may vary during the Evaluation Year.

<sup>5</sup> Total number of Inspectable Units is (1) the number of active and inactive Inspectable Units at the end of the Evaluation Year and (2) the number of Inspectable Units that were final bond released or removed during the Evaluation Year and (3) the number bond forfeiture sites that were reclaimed during the Evaluation Year and (4) the number of bond forfeiture sites that were unreclaimed at the end of the Evaluation Year.

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TABLE 6

SURFACE COAL MINING AND RECLAMATION ACTIVITY							
Areas of Phase I, II, and III Bond Releases During the Evaluation Year (EY)							
Phase I Releases	Phase II Releases		Phase III Releases			Total Acres Released During the EY	
	Total Acres Released in Approved Phase II Releases	Acres not previously released under Phase I	Total Acres Released in Approved Phase III Releases	Acres not previously released under Phase II	Acres not previously released under Phase I or II		
0		0			0	Phase I	0
	0			0		Phase II	0
			73			Phase III	73
Number of Permanent Program Permits with Jurisdiction Terminated Under Phase III Bond Release During the Evaluation Year					1	Other Releases - Acres	
Initial Program Sites with Jurisdiction Terminated During the Evaluation Year					0	Administrative Adjustments	0
Number of Inspectable Units Removed					1	Bond Forfeiture	0
Areas of Permits Bonded for Disturbance by Surface Coal Mining and Reclamation Operations							

	Total Acres at Start of EY	Total Acres at End of EY	Change in Acres During EY
New Area Bonded for Disturbance			114
Total Area Bonded for Disturbance	2,915	2,956	41
Area Bonded for Disturbance without Phase I Bond Release	2,539	2,654	115
Area Bonded for Disturbance for which Phase I Bond Release Has Been Approved	1,142	0	(1,142)
Area Bonded for Disturbance for which Phase II Bond Release Has Been Approved	1,142	0	(1,142)
Area Bonded for Disturbance with Bonds Forfeited During Evaluation Year			0
Area Bonded for Remining	0	0	0
Areas of Permits Disturbed by Surface Coal Mining and Reclamation Operations			
Disturbed Area	2,728	2,757	29

TABLE 7

<b>BOND FORFEITURE ACTIVITY (Permanent Program Permits)</b>			
<b>Bond Forfeiture and Reclamation Activity</b>	<b>Number of Sites</b>	<b>Dollars</b>	<b>Acres</b>
Sites with bonds forfeited and collected that were un-reclaimed at the start of the current Evaluation Year (i.e, end of previous Evaluation Year) <sup>1</sup>	0		0
Sites with bonds forfeited and collected during the current Evaluation Year	0	0	0
Sites with bonds forfeited and collected that were re-permitted during the current Evaluation Year	0		0
Sites with bonds forfeited and collected that were reclaimed during the current Evaluation Year	0		0
Sites with bonds forfeited and collected that were un-reclaimed at the end of the current Evaluation Year <sup>1</sup>	0		0
Sites with bonds forfeited but un-collected at the end of the current Evaluation Year	0		0
<b>Forfeiture Sites with Long-Term Water Pollution</b>			
Bonds forfeited, lands reclaimed, but water pollution is still occurring	0		
Bonds forfeited, lands reclaimed, and water treatment is ongoing	0		
<b>Surety/Other Reclamation Activity In Lieu of Forfeiture</b>			
Sites being reclaimed by surety/other party at the start of the current Evaluation Year (i.e., the end of previous Evaluation Year) <sup>2</sup>	0		0
Sites where surety/other party agreed during the current Evaluation Year to do reclamation	0		0
Sites being reclaimed by surety/other party that were re-permitted during the current Evaluation Year	0		0
Sites with reclamation completed by surety/other party during the current Evaluation Year <sup>3</sup>	0		0
Sites being reclaimed by surety/other party at the end of the current Evaluation Year <sup>2</sup>	0		0
<sup>1</sup> Includes data only for those forfeiture sites not fully reclaimed. <sup>2</sup> Includes all sites where surety or other party has agreed to complete reclamation and the site is not fully reclaimed. <sup>3</sup> These sites are also reported in Table 6, Surface Coal Mining and Reclamation Activity, because Phase III bond release would be granted on these sites.			

TABLE 8

REGULATORY AND AML PROGRAMS STAFFING	
Function	Number of FTEs
<b>Regulatory Program</b>	
Permit Review and Maintenance	0.88
Inspection	2.00
Other (supervisory, clerical, administrative, fiscal, personnel, etc.)	0.68
<b>Regulatory Program Total</b>	<b>3.56</b>
<b>AML Program Total</b>	<b>8.19</b>
<b>TOTAL</b>	<b>11.75</b>

CHART 8A HISTORICAL TRENDS  
REGULATORY AND AML PROGRAMS STAFFING

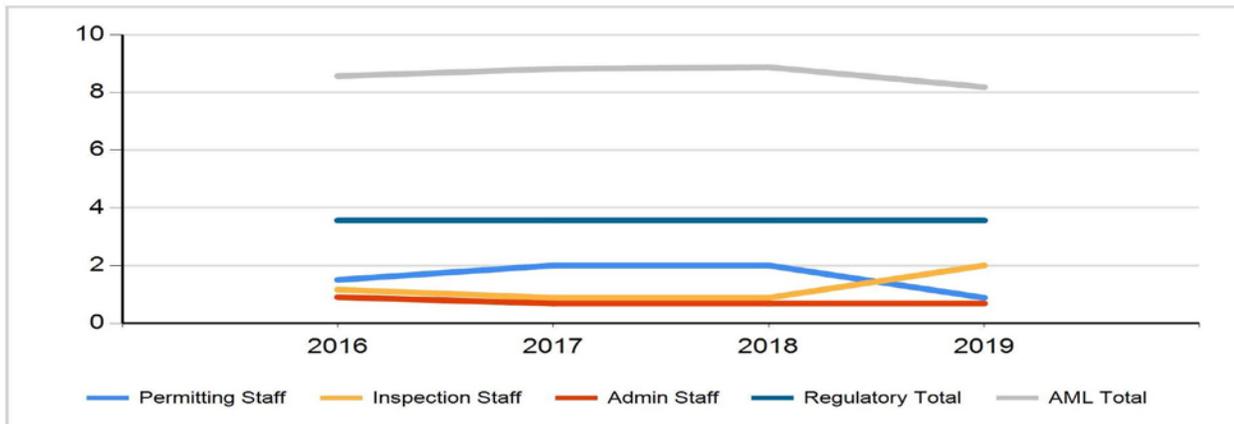


TABLE 8A

REGULATORY AND AML PROGRAMS STAFFING					
Year	Regulatory Program				AML Program
	Permitting	Inspection	Admin	Total	
2016	2	1	1	4	9
2017	2	1	1	4	9
2018	2	1	1	4	9
2019	1	2	1	4	8

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TABLE 9

FUNDS GRANTED TO STATE OR TRIBE BY OSM (Actual Dollars Rounded to the Nearest Dollar)			
Type of Funding	Federal Funds Awarded	Total Program Cost	Federal Funds Awarded as a Percentage of Total Program Costs
<b>Regulatory Funding</b>			
Administration and Enforcement Grant	202,855		
Other Regulatory Funding, if applicable	0		
<b>Subtotal (Regulatory Funding)</b>	202,855	405,710	50
<b>Small Operator Assistance Program Grant Funding</b>	0	0	
<b>Abandoned Mine Land Reclamation Funding</b>	2,802,000	2,802,000	100
<b>Watershed Cooperative Agreement Program</b>	0	0	
<b>TOTAL</b>	3,004,855		

CHART 9A HISTORICAL TRENDS  
FUNDS GRANTED TO STATE OR TRIBE BY OSM

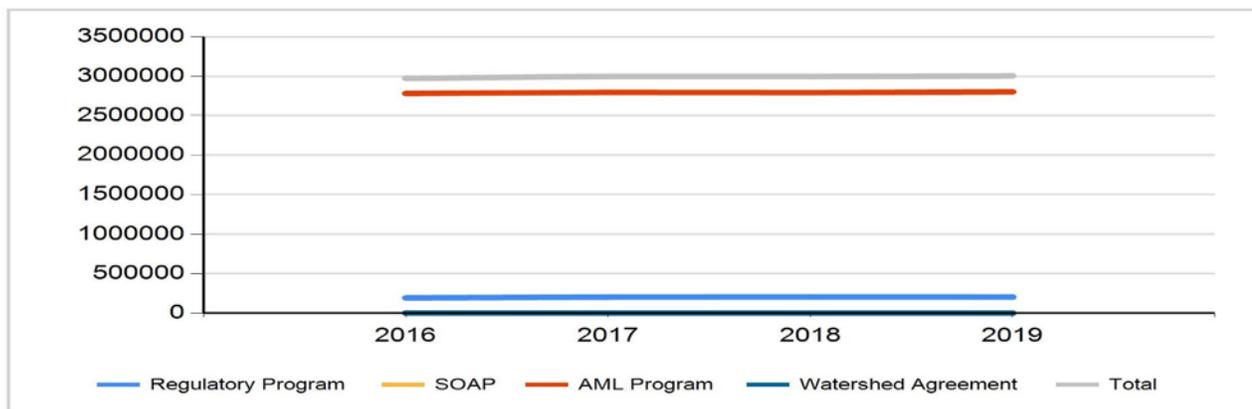


TABLE 9A

FUNDS GRANTED TO STATE OR TRIBE BY OSM				
Year	Regulatory Program	SOAP	AML Program	Total
2016	193,159	0	2,781,000	2,974,159
2017	201,946	0	2,796,000	2,997,946
2018	204,899	0	2,793,000	2,997,899
2019	202,855	0	2,802,000	3,004,855

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TABLE 10

**STATE INSPECTION ACTIVITY  
INSPECTABLE UNITS FOR WHICH STATE MET REQUIRED INSPECTION FREQUENCY ON AN  
INSPECTABLE UNIT-BY-INSPECTABLE UNIT BASIS<sup>1</sup>**

Inspectable Units (IUs)	Total number of inspectable units <sup>2</sup>	Number of inspections required annually		Number of inspections conducted		IUs Met Complete Inspection Frequency Requirement		IUs Met Partial Inspection Frequency Requirement		IUs Met Complete and Partial Inspection Frequency Requirements		
		Complete inspections	Partial inspections	Complete inspections	Partial inspections	Number	Percent	Number	Percent	Total number of IUs	Number that met inspection frequency	Percent
<b>COAL MINES AND FACILITIES</b>												
Active	8	32	64	31	58	8	100	8	100	8	8	100
Inactive	0	0	0	0	0	0	0	0	0	0	0	0
Abandoned	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTALS<sup>3</sup></b>	<b>8</b>	<b>32</b>	<b>64</b>	<b>31</b>	<b>58</b>	<b>8</b>	<b>100</b>	<b>8</b>	<b>100</b>	<b>8</b>	<b>8</b>	<b>100</b>
<b>Coal Exploration Activities<sup>4</sup></b>		<b>Complete Inspections</b>						<b>Partial Inspections</b>				
Exploration sites with permits		0						0				
Exploration sites with notices		0						0				

<sup>1</sup> Calculated on a site-specific basis.

<sup>2</sup> Total number includes both permanent program permits and initial program sites.

<sup>3</sup> OSM is assuming that all states have gone through the process described in 30 CFR 840.11(h) and 842.11(f) to reduce inspection frequency on abandoned/forfeited sites

<sup>4</sup> Includes all valid notices and permits. No inspection frequency data are provided since SMCRA does not establish a minimum numerical inspection frequency for coal exploration activities.

<sup>5</sup> NA - Not Available

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**TABLE 11**

**STATE OR TRIBAL ENFORCEMENT ACTIVITY**

<b>Type of Enforcement Action</b>	<b>Number of Actions<sup>1</sup></b>	<b>Number of Violations<sup>1</sup></b>
Notice of Violation	0	0
Failure-to-Abate Cessation Order	0	0
Imminent Harm Cessation Order	0	0
<sup>1</sup> Does not include actions and violations that were vacated.		

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**TABLE 12**

<b>LANDS UNSUITABLE ACTIVITY</b>		
<b>Activity</b>	<b>Number</b>	<b>Acres</b>
Petitions Received	0	
Petitions Rejected	0	
Petitions Accepted	0	
Decisions Denying Petition	0	
Decisions Declaring Lands Unsuitable	0	0
Decisions Terminating Unsuitable Designations	0	0

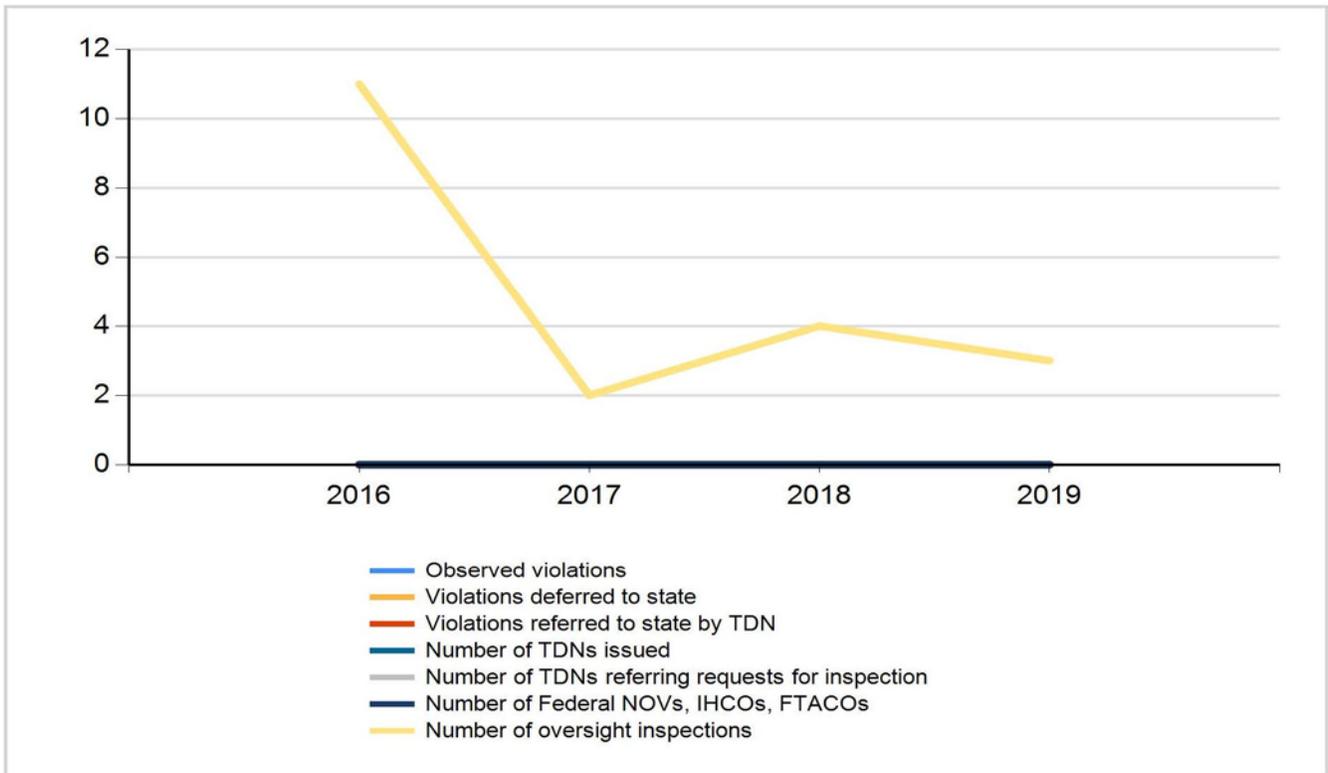
TABLE 13

<b>OSM OVERSIGHT ACTIVITY</b>					
<b>Oversight Inspections and Site Visits</b>					
	<b>Complete</b>		<b>Partial</b>		
	Joint	Non-Joint	Joint	Non-Joint	Total
Oversight Inspections	1	0	2	0	3
	Technical Assistance		Other		Total
Site Visits	0		0		0
<b>Violations Observed by OSM and Citizen Requests for Inspection<sup>1</sup></b>					
<b>Type of Action</b>					<b>Total number of each action</b>
How many violations were observed by OSM on oversight inspections?					0
Of the violations observed, how many did OSM defer to State action during inspections?					0
Of the violations observed, how many did OSM refer to the State through Ten-Day Notices? <sup>2</sup>					0
How many Ten-Day Notices did OSM Issue for observed violations? <sup>3</sup>					0
How many Ten-Day Notices did OSM issue to refer citizen requests for inspection?					0
How many Notices of Violation did OSM issue?					0
How many Failure-to-Abate Cessation Orders did OSM issue?					0
How many Imminent Harm Cessation Orders did OSM issue?					0
<b>OSM Action for Delinquent Reporting or Non-Payment of Federal AML Reclamation Fees</b>					
How many Ten-Day Notices for delinquent reporting or non-payment of Federal AML reclamation fees did OSM issue?					0
How many Notices of Violation for delinquent reporting or non-payment of Federal AML reclamation fees did OSM issue?					0
How many Federal Failure-to-Abate Cessation Orders for delinquent reporting or non-payment of Federal AML reclamation fees did OSM issue?					0
<sup>1</sup> This section does not include actions for delinquent reporting or non-payment of Federal AML fees that are reported in the last section of the table. <sup>2</sup> Number of violations contained in Ten-Day Notices not including those issued to refer citizen requests for inspection. <sup>3</sup> Number of Ten-Day Notices issued not including those to refer citizen requests for inspection.					

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**CHART 13A HISTORICAL TRENDS  
OSM OVERSIGHT ACTIVITY**



**TABLE 13A**

<b>OSM OVERSIGHT ACTIVITY</b>							
<b>Year</b>	<b>Number of violations observed on OSM oversight inspections</b>	<b>Number of violations deferred to state action</b>	<b>Number of violations referred to state by TDN</b>	<b>Number of TDN's issued</b>	<b>Number of TDN's issued to refer requests for inspection</b>	<b>Number of Federal NOVs, FTACOs, &amp; IHCOs issued</b>	<b>Number of oversight inspections</b>
2016	0	0	0	0	0	0	11
2017	0	0	0	0	0	0	2
2018	0	0	0	0	0	0	4
2019	0	0	0	0	0	0	3

TABLE 14

STATUS OF ACTION PLANS						
Action Plan ID	Problem Type <sup>1</sup>	Problem Title	Problem Description	Date Action Plan Initiated	Scheduled Completion Date	Actual Completion Date
None						
<sup>1</sup> Problem Type: "PA" indicates a required Program change under subchapter T or 732 "RP" indicates a Regulatory Program implementation or administrative problem						

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**TABLE 15  
(Optional)**

<b>POST-MINING LAND USE ACREAGE OF SITES FULLY RECLAIMED (Phase III bond release or termination of jurisdiction under the Initial Program)</b>	
<b>Land Use<sup>1</sup></b>	<b>Acres Released</b>
Cropland	0.00
Pasture/Hayland	0.00
Grazingland	0.00
Forestry	0.00
Residential	0.00
Industrial/Commercial	0.00
Recreation	0.00
Fish & Wildlife Habitat	73.00
Developed Water Resources	0.00
Undeveloped land or no current use or land management	0.00
Other - Public Utilities	0.00
Other -	0.00
<b>Sub-Total Other</b>	0.00
<b>Total</b>	<b>73.00</b>

<sup>1</sup> Land uses as defined in 30 CFR 701.5 or "Other" as defined under the state or tribal program

**APPENDIX 1, PART B**

**Title IV: Summary of Core Data to Characterize the AML Program**

The following tables' present summary data pertinent to abandoned mine land activities under the LRP's AML program. Unless otherwise specified, the reporting period for the data contained in the tables is the EY. Other data and information used by the AFD in its evaluation of the LRP's performance are available for review in the evaluation file maintained by the AFD.

Because of the enormous variations from state to state and the differences between state programs, the summary data should not be used to compare one state to another.

**List of Tables**

- Table 1 Status of AML Inventory All Priority 1, 2, and 3 Hazards
- Table 2 Accomplishments in Eliminating Health and Safety Hazards Related to Past Mining Priority 1 and 2 Hazards
- Table 3 Accomplishments in Eliminating Health and Safety Hazards Related to Past Mining Priority 3 and SMCRA Section 403(b) Hazards
- Table 4 Public Well-Being Enhancement
- Table 5 Partnership Financial Resources Dedicated to Protecting the Public from Adverse Effects of Past Mining
- Table 6 Reclamation Projects Started and/or Completed Coal and Non-Coal
- Table 7 AML Program Awards and Staffing

TABLE 1

STATUS OF AML INVENTORY ALL PRIORITY 1, 2, AND 3 HAZARDS

	High Priority		Elevated Priority 3	Stand-Alone Priority 3 (Not adjacent or in conjunction w/ P1&2)	Total
	Priority 1	Priority 2			
<b>Unfunded</b>					
<b>GPRA Acres</b>	5.00	1,617.11		2,529.00	4,151.11
<b>Dollars</b>	\$147,000.00	\$43,721,059.00		\$16,420,181.00	\$60,288,240.00
<b>Funded</b>					
<b>GPRA Acres</b>	0.00	34.90	0.00	0.00	34.90
<b>Dollars</b>	\$0.00	\$217,500.00	\$0.00	\$0.00	\$217,500.00
<b>Completed</b>					
<b>GPRA Acres</b>	291.86	4,819.00	1,697.90	635.86	7,444.62
<b>Dollars</b>	\$3,395,762.00	\$53,794,875.29	\$1,803,486.00	\$2,115,705.00	\$61,109,828.29

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TABLE 2

ACCOMPLISHMENTS IN ELIMINATING HEALTH AND SAFETY HAZARDS RELATED TO PAST MINING PRIORITY 1 AND 2 HAZARDS

Problem Type (keyword)

	Clogged Stream (CS) (miles)	Clogged Stream Lands (CSL) (acres)	Dangerous Pile or Embankment (DPE)(acres)	Dangerous Highwall (DH) (feet)	Dangerous Impoundment (DI) (count)	Dangerous Slide (DS) (acres)	Gases: Hazardous /Explosive (GHE) (count)	Hazardous Equip./Facilities (HEF) (count)	Hazardous Water Body (HWB) (count)	Industrial/Residential Waste (IRW) (acres)	Portal (P) (count)	Polluted Water:Agri/Industrial (PWAI)(count)	Polluted Water: Human Consumption (PWHC)(count)	Subsidence (S) (acres)	Surface Burning (SB) (acres)	Underground Mine Fire (UMF) (acres)	Vertical Opening (VO) (count)	TOTAL
<b>Unreclaimed/Remaining Hazards (Unfunded)</b>																		
Units	2.00	15.70	155.40	34,908.00	2.00	0.00	0.00	9.00	26.00	29.90	15.00	14.00	5.00	630.90	1.00	0.00	31.00	
GPRA Acres	10.00	55.70	155.40	498.71	10.00	0.00	0.00	0.90	130.00	29.90	1.50	70.00	25.00	630.90	1.00	0.00	3.10	1,622.11
Dollars	\$104,204.00	\$144,932.00	\$4,588,372.00	\$5,764,042.00	\$12,000.00	\$0.00	\$0.00	\$44,680.00	\$1,544,600.00	\$74,200.00	\$78,000.00	\$613,720.00	\$2,436,209.00	\$28,320,000.00	\$3,000.00	\$0.00	\$140,100.00	\$43,868,059.00
<b>Annual Reclamation - EY2019 only (Completed)</b>																		
Units	0.00	0.00	0.00	1,553.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	15.70	0.00	0.00	0.00	
GPRA Acres	0.00	0.00	0.00	22.20	0.00	0.00	0.00	0.00	5.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	32.20
Dollars	\$0.00	\$0.00	\$0.00	\$263,814.48	\$0.00	\$0.00	\$0.00	\$0.00	\$60,000.00	\$0.00	\$0.00	\$25,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$348,814.48
<b>Historical Reclamation - EY1978 - 2019 (Completed)</b>																		
Units	10.80	1,566.80	893.10	104,664.00	6.00	0.00	0.00	28.00	44.00	73.80	36.00	66.00	15.00	6.10	19.00	7.00	138.00	
GPRA Acres	54.00	1,887.60	892.80	1,495.37	30.00	0.00	0.00	2.80	220.00	73.80	3.60	330.00	75.00	6.10	19.00	7.00	13.80	5,110.87
Dollars	\$595,997.00	\$9,045,455.78	\$12,330,717.50	\$9,763,110.04	\$1,051,615.00	\$0.00	\$0.00	\$443,211.00	\$2,612,489.51	\$295,160.00	\$45,188.00	\$15,670,779.50	\$3,999,409.00	\$760,530.00	\$58,501.00	\$104,831.00	\$413,642.96	\$57,190,637.29

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TABLE 3

ACCOMPLISHMENTS IN ELIMINATING ENVIRONMENTAL PROBLEMS RELATED TO PAST MINING  
PRIORITY 3 AND SMCRA SECTION 403(b) HAZARDS

Problem Type (keyword)

	Bench, Solid Bench, Fill Bench (BE) (acres)	Industrial/Residential Waste Dump (DP) (acres)	Equipment and Facilities (EF) (count)	Gob (GO) (acres)	Highwall (H) (feet)	Haul Road (HR) (acres)	Mine Opening (MO) (count)	Pit, Open Pit, Strip Pit (PI) (acres)	Spoil, Spoil Bank (SA) (acres)	Shurry (SL) (acres)	Slump (SP) (acres)	Water (WA) (gallons)	Other (specify)	Water Supplies (WS) - Section 403(b) (count)	TOTAL
<b>Unreclaimed/Remaining Hazards (Unfunded)</b>															
Units	0.00	7.40	21.00	89.70	183,731.00	73.30	17.00	447.80	8,615.30	19.30	416.10	374.00	19.10	0.00	
GPRA Acres	0.00	7.40	2.10	89.70	2,624.80	73.30	1.70	447.80	8,615.30	19.30	416.10	0.00	0.00	0.00	12,297.50
Dollars	\$0.00	\$34,561.00	\$186,102.00	\$2,368,448.00	\$20,767,305.00	\$278,978.00	\$34,000.00	\$4,053,686.00	\$22,557,223.00	\$181,501.00	\$19,736,200.00	\$689,501.00	\$329,460.00	\$0.00	\$71,216,965.00
<b>Annual Reclamation - EY2019 only (Completed)</b>															
Units	0.00	0.00	0.00	0.00	1,375.00	0.00	0.00	0.00	15.00	0.00	0.00	0.00	0.00	0.00	
GPRA Acres	0.00	0.00	0.00	0.00	19.60	0.00	0.00	0.00	15.00	0.00	0.00	0.00	0.00	0.00	34.60
Dollars	\$0.00	\$0.00	\$0.00	\$0.00	\$200,000.00	\$0.00	\$0.00	\$0.00	\$1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$200,001.00
<b>Historical Reclamation - EY1978 - 2019 (Completed)</b>															
Units	2.00	6.60	9.00	153.40	23,544.00	1.90	1.00	95.90	1,678.10	69.00	0.40	86.00	4.00	0.00	
GPRA Acres	2.00	6.60	0.90	153.40	336.26	1.90	0.10	95.90	1,678.30	69.00	0.40	0.00	0.00	0.00	2,344.76
Dollars	\$1.00	\$19,255.00	\$5,903.00	\$284,362.00	\$599,867.00	\$4,500.00	\$500.00	\$238,478.00	\$2,408,989.00	\$144,217.00	\$1,000.00	\$169,090.00	\$43,030.00	\$0.00	\$3,919,192.00

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**TABLE 4**

**PUBLIC WELL-BEING ENHANCEMENT**  
 (All Priority 1, 2 and 3 AML projects completed during EY 2019)

#	PAD Number	Project Name	Problem Type(s) Reclaimed	GPRA Acres	Cost	*Number of People with Reduced Exposure Potential (State Estimated /or/ Census Data)
1	MO000050	Webster Reclamation Project	PWAI	5	\$25,000.00	144
2	MO000096	Cooper Creek	DH, H, HWB, SA	61.8	\$523,815.48	52
<b>TOTAL</b>				66.8	\$548,815.48	98

\*Note: The total is an average.

**TABLE 5**

**PARTNERSHIP FINANCIAL RESOURCES DEDICATED TO PROTECTING THE PUBLIC FROM ADVERSE EFFECTS OF PAST MINING**

(AML projects completed during EY 2019)

#	PAD Number	Project Name	SMCRA Program Funding Source	Total SMCRA funding	Alternate Non-SMCRA Funding Source	Total non-SMCRA Funding	In-Kind Services	Total Project Funding	Comments
<p>The Missouri AML Program did not have any financial partnership projects during evaluation year 2019.</p>									
<b>TOTAL</b>				\$0.00		0	\$0.00	\$0.00	

**TABLE 6**

**RECLAMATION PROJECTS STARTED AND/OR COMPLETED**

Project Type	Projects Started	Projects Completed
State/Tribe (EY 2019):	5 (Bramar Dr-NC, Cherry St-NC, Old Walnut-Coal, Brock Farms-coal, Batschelett-Coal)	3 (Cooper-Coal, Bramar Dr-NC, Cherry St-NC)
Federal (EY 2019):	0	0
<b>Total (EY 2019):</b>	5	3

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**TABLE 7**

**AML PROGRAM GRANT AWARDS AND STAFFING**

**AML Program Costs**

Administration	\$242,532.00
Construction	\$2,559,468.00
Water Supply Construction	\$0.00
AMD Set-Aside	\$0.00
Other(s) (Specify)	\$0.00
<b>Total AML Funding</b>	<b>\$2,802,000.00</b>
<b>AML Program Staffing</b> (full-time equivalents on June 30, 2019):	<b>8.19</b>

**APPENDIX 2: COMMENTS OF STATE OF MISSOURI ON THE REPORT**

**Title V: Missouri Regulatory Program Comments**

Minor comments received from the LRP were incorporated into the Title V portion of the report.

**Title IV: Missouri AML Program Comments**

Minor comments received from the LRP were incorporated into the Title IV portion of the report.