



March 2018

COAL MINE RECLAMATION

Federal and State Agencies Face Challenges in Managing Billions in Financial Assurances

Highlights of GAO-18-305, a report to congressional requesters

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Why GAO Did This Study

Coal accounts for 17 percent of domestic energy production. SMCRA requires coal mine operators to reclaim lands that were disturbed during mining and to submit a financial assurance in an amount sufficient to ensure that adequate funds will be available to complete reclamation if the operator does not do so. Recent coal company bankruptcies have drawn attention to whether financial assurances obtained by OSMRE and state agencies will be adequate to reclaim land once coal mining operations have ceased.

GAO was asked to review management of financial assurances for coal mine reclamation. This report describes, among other things, the amounts and types of financial assurances held for coal mine reclamation in 2017 and the challenges that OSMRE and state agencies face in managing these financial assurances. GAO collected and analyzed data from OSMRE and 23 state agencies; reviewed federal laws, regulations, and directives; and interviewed OSMRE and state agency officials and representatives from organizations associated with the mining and financial assurance industries and environmental organizations.

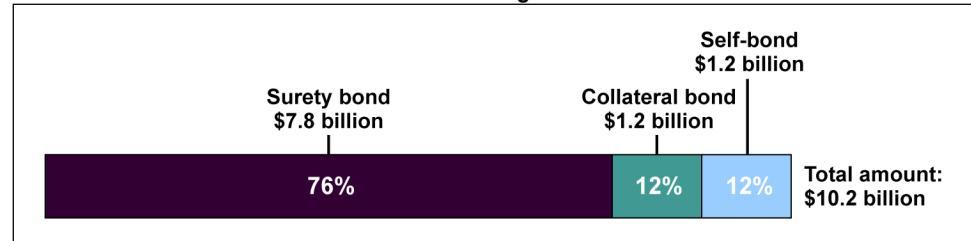
What GAO Recommends

GAO recommends that Congress consider amending SMCRA to eliminate self-bonding. Interior neither agreed nor disagreed with GAO's recommendation.

What GAO Found

State agencies and the Department of the Interior's Office of Surface Mining Reclamation and Enforcement (OSMRE) reported holding approximately \$10.2 billion in surety bonds (guaranteed by a third party), collateral bonds (guaranteed by a tangible asset, such as a certificate of deposit), and self-bonds (guaranteed on the basis of a coal operator's own finances) as financial assurances for coal mine reclamation.

Amount of Financial Assurances Held in 2017, by Type, for Reclaiming Coal Mines in States and on Indian Tribal Lands with Active Coal Mining



Sources: GAO analysis of information provided by state regulatory authorities and the Office of Surface Mining Reclamation and Enforcement. | GAO-18-305

OSMRE and state agencies face several challenges in managing financial assurances, according to the stakeholders GAO interviewed. Specifically,

- Obtaining additional financial assurances from operators for unanticipated reclamation costs, such as long-term treatment for water pollution, can be difficult.
- Determining the financial stability of surety companies has been challenging in certain instances.
- Self-bonding presents a risk to the government because it is difficult to (1) ascertain the financial health of an operator, (2) determine whether the operator qualifies for self-bonding, and (3) obtain a replacement for existing self-bonds when an operator no longer qualifies. In addition, some stakeholders said that the risk from self-bonding is greater now than when the practice was first authorized under the Surface Mining Control and Reclamation Act (SMCRA).

GAO's previous work examining environmental cleanup found that the financial risk to government and the amount of oversight needed for self-bonds are relatively high compared to other forms of financial assurances. GAO also previously reviewed federal financial assurance requirements for various energy and mineral extraction sectors and found that coal mining is the only one where self-bonding was allowed. However, because SMCRA explicitly allows states to decide whether to accept self-bonds, eliminating the risk that self-bonds pose to the federal government and states would require SMCRA be amended.

View GAO-18-305. For more information, contact Anne-Marie Fennell at (202) 512-3841 or fennella@gao.gov.

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Abbreviations

OSMRE	Office of Surface Mining Reclamation and Enforcement
SMCRA	Surface Mining Control and Reclamation Act

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U.S. GOVERNMENT ACCOUNTABILITY OFFICE

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Congressional Requesters

Coal accounted for approximately 17 percent of domestic energy production in 2016, and extracting this resource requires disturbing the land, potentially affecting vegetation, wildlife, and water quality, among other things.¹ Under the Surface Mining Control and Reclamation Act (SMCRA), operators of coal mines on federal and nonfederal lands in the United States are required to reclaim mined lands—for example, by regrading and replanting the area.² To help ensure that reclamation occurs, SMCRA requires an operator to submit a financial assurance (e.g., a bond) in an amount sufficient to ensure that adequate funds will be available for the regulatory authority—either the Department of the Interior’s Office of Surface Mining Reclamation and Enforcement (OSMRE) or an approved state regulatory authority—to complete required reclamation if the operator does not do so.³ If specific conditions are met, SMCRA allows states to let an operator guarantee the cost for reclaiming a mine on the basis of its own finances, a practice known as self-bonding, rather than by securing a bond through another company or providing collateral, such as cash, letters of credit, or real property.

Three of the largest coal mining companies in the United States filed for bankruptcy in 2015 and 2016. This drew attention to whether financial assurances obtained by OSMRE and approved state regulatory authorities will be adequate to reclaim land once coal mining operations have ceased, particularly in cases where operators had used self-bonds

¹Coal was the energy source for approximately 30 percent of electricity production in the United States in 2016.

²Surface Mining Control and Reclamation Act of 1977, Pub. L. No. 95-87, 91 Stat. 445 (codified as amended at 30 U.S.C. §§ 1201-1328 (2017)). SMCRA’s reclamation requirements apply to surface coal mines, surface effects of underground coal mines, and other coal mining related structures (e.g., roads). For simplicity, we refer to these as surface effects of coal mining. Also, in this report, “reclaim” and “reclamation” refer to any activity required to return a site to the state it was in before mining occurred.

³States and Indian tribes can submit a program to implement SMCRA to OSMRE for approval. A state or Indian tribe with an approved program is said to have “primacy” for that program. In 2017, 24 states had primacy, 23 of which had active coal mining. OSMRE directly implements SMCRA in states and for Indian tribes that do not have primacy. Two non-primacy states (Tennessee and Washington) and four Indian tribes had active coal mining that OSMRE manages.

as their financial assurance. In August 2016, citing the recent bankruptcies, lower market demand for coal, and the potential for more market downturn, OSMRE issued a policy advisory to states suggesting, among other things, that states take steps to assess whether operators currently using self-bonds continue to qualify to do so and that states not accept new self-bonds.⁴ Moreover, in September 2016, in response to a petition seeking revisions to its self-bonding regulations, OSMRE stated that it planned to examine changes to its bonding regulations that would, among other things, help ensure the completion of the reclamation plan if the regulatory authority has to perform the work in the event the operator does not do so.⁵

You asked us to review OSMRE's oversight of financial assurances for coal mine reclamation. This report examines (1) the amounts and types of financial assurances held for coal mine reclamation, (2) the extent to which financial assurances to reclaim coal mines were forfeited from July 2007 through June 2016, (3) how OSMRE oversees financial assurances for coal mine reclamation, and (4) any challenges that OSMRE and approved state regulatory authorities face in managing financial assurances for coal mine reclamation.

To determine (1) the amounts and types of financial assurances held for coal mine reclamation and (2) the extent to which financial assurances to reclaim coal mines have been forfeited, we developed a data collection instrument and sent it to the relevant state regulatory authority for the 23 primacy states that OSMRE identified as having active coal mining in 2017. We also sent it to OSMRE to request data for the 2 states and four Indian tribes with active coal mining where it directly manages the coal program. In developing the instrument, we discussed available data with OSMRE and state regulatory authority officials and with a representative of the Interstate Mining Compact Commission, a multistate governmental agency representing state mining regulatory authorities. All 23 states we contacted and OSMRE responded to our data collection instrument. For financial assurances forfeited, the data reported includes forfeitures that

⁴Office of Surface Mining Reclamation and Enforcement, *Policy Advisory: Self-Bonding* (Washington, D.C.: Aug. 5, 2016).

⁵Petition to Initiate Rulemaking; Ensuring That Companies With a History of Financial Insolvency, and Their Subsidiary Companies, Are Not Allowed To Self-Bond Coal Mining Operations, 81 Fed. Reg. 61,612 (Sept. 7, 2016).

occurred from July 2007 through June 2016.⁶ We discussed with state and OSMRE officials how the data were collected and maintained and determined that the data were sufficiently reliable for our purposes.

To determine how OSMRE oversees financial assurances for coal mine reclamation, we analyzed SMCRA, federal regulations, and OSMRE directives. Specifically, we reviewed directives pertaining to OSMRE's oversight of state and tribal programs, its inspections of mines in both primacy and nonprimacy states, and a handbook on the calculation of the amount of financial assurance that OSMRE and primacy states obtain.⁷ We also reviewed agency documents, including the *2010 National Priority Review* that examined how financial assurance amounts were calculated, and interviewed OSMRE officials from its headquarters and its three regional offices.⁸ We selected a nonprobability sample of 7 states—Illinois, Kentucky, Montana, Pennsylvania, Tennessee, West Virginia, and Wyoming—to examine OSMRE's oversight activities in more detail. We generally selected states that produced the most coal in 2015 (the most recent data at the time we began our review), according to the U.S. Energy Information Administration. We also selected states to achieve some variation in factors such as geographic location, the dominant type of coal mining conducted (e.g., surface or underground mining), whether the state had primacy, and whether the state allowed self-bonding (see app. I). Because this is a nonprobability sample, the oversight activities in the 7 states are not generalizable to all 25 primacy and nonprimacy states with active coal mining but provide illustrative examples. For each of the 7 states, we reviewed agency documents, including OSMRE's annual evaluation of the state's program, agreements between OSMRE and the state regulatory authority specifying oversight steps OSMRE would take, and in some cases OSMRE and state documents related to OSMRE's determination that a state was not implementing its primacy program as required. We also interviewed OSMRE field office officials responsible for

⁶States and OSMRE generally report coal mining data according to the evaluation year, which runs from July 1 to June 30 of the following year.

⁷Office of Surface Mining Reclamation and Enforcement, *Oversight of State and Tribal Regulatory Programs*, REG-8 (Washington, D.C.: Jan. 31, 2011); *Completion and Processing of Mine Site Inspection Federal Program and Mine Site Evaluation State Program Report Forms*, INE-23 (Washington, D.C.: Dec. 28, 1998); and *Handbook for Calculation of Reclamation Bond Amounts*, TSR-1 (Washington, D.C.: Apr. 5, 2000).

⁸Office of Surface Mining Reclamation and Enforcement, *2010 National Priority Review: State Calculation of Required Bond Amounts* (Washington, D.C.: Feb. 11, 2011).

these 7 states and, for primacy states, officials from the state regulatory authority.

To obtain additional perspectives on OSMRE's oversight of financial assurances, we interviewed the following parties: officials from the Interstate Mining Compact Commission, officials from the National Association of Insurance Commissioners, and representatives from two organizations associated with the mining and financial assurances industries (the National Mining Association and The Surety and Fidelity Association of America) and from two environmental nongovernmental organizations (the Natural Resources Defense Council and the Western Organization of Resource Councils) actively involved with these issues. These organizations were identified through our research as well as by other stakeholders as potentially having relevant perspectives and information to share with regard to financial assurances for coal mine reclamation.

To identify any challenges that OSMRE and approved state regulatory authorities face in managing financial assurances for coal mine reclamation, we interviewed the federal and state officials and industry and environmental nongovernmental organization representatives identified above. Interview questions were designed to elicit officials' and representatives' views on any challenges facing OSMRE and state regulatory authorities and potential actions to address those challenges. We also asked about any actions OSMRE has taken or could take to address the challenges identified. We included those challenges that were identified by at least 4 of the 13 parties we interviewed.⁹ Not all parties we interviewed commented on every challenge identified.

We conducted this performance audit from January 2017 to March 2018 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

⁹The 13 parties are OSMRE; the state regulatory authorities of Illinois, Kentucky, Montana, Pennsylvania, West Virginia, and Wyoming; the Interstate Mining Compact Commission; the National Association of Insurance Commissioners; the National Mining Association; the Natural Resources Defense Council; The Surety and Fidelity Association of America; and the Western Organization of Resource Councils.

Background

Coal accounted for 17 percent of energy production (30 percent of electricity production) in the United States in 2016.¹⁰ To generate this energy, approximately 730 million tons of coal were mined domestically in 2016, according to the U.S. Energy Information Administration, approximately 40 percent of which was produced on federal lands. As of 2016, state regulatory authorities and OSMRE had received financial assurances associated with coal mines that had been permitted to disturb approximately 2.3 million acres, according to OSMRE data.

Coal is mined in two different ways: surface mining and underground mining. In surface coal mining, before the underlying coal can be extracted, the land is cleared of forests and other vegetation and topsoil is removed and stored for later use. Explosives or other techniques are then used to break up the overlying solid rock, creating dislodged earth, rock, and other materials known as spoil. Surface coal mines can cover an area of many square miles. In underground coal mining, tunnels are dug to access coal that is too deep for surface mining methods. In some cases, underground coal mines are designed to leave sufficient coal in the mine to support the overlying surface, and in other cases, they are designed to extract higher quantities of coal that results in subsidence of the overlying surface as mining progresses.

In addition to disturbing the land surface, coal mining can affect water quality, according to the Environmental Protection Agency, the National Academies, and others. For example, mining can increase sediments in rivers or streams, which may negatively affect aquatic species. Moreover, mining can expose minerals and heavy metals to air and water, leading to a condition known as acid mine drainage, which can lead to long-term water pollution and harm some fish and wildlife species. Mining can also lower the water table or change surface drainage patterns.

Regulation of Coal Mining

The surface effects of coal mining in the United States are regulated under SMCRA, which also created OSMRE to administer the act. SMCRA allows an individual state or Indian tribe to develop its own program to implement the act if the Secretary of the Interior finds that the program is

¹⁰U.S. Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(2017/11) (Washington, D.C.: Nov. 21, 2017).

in accordance with federal law.¹¹ A state with an approved program is said to have “primacy” for that program. To obtain primacy, a state or Indian tribe submits to the Secretary of the Interior for approval a program that demonstrates that the state or tribe has the capability of carrying out the requirements of SMCRA. The program must demonstrate that the state or Indian tribe has, among other things, a law that provides for the regulation of the surface effects of coal mining and reclamation in accordance with the requirements of SMCRA, and a regulatory authority with sufficient personnel and funding to do so. Of the 25 states and four Indian tribes that OSMRE identified as having active coal mining in 2017, 23 states had primacy, and OSMRE manages the coal program in 2 states and for the four Indian tribes.¹²

SMCRA requires a mine operator to obtain a permit before starting to mine.¹³ The permit process requires operators to submit plans describing the extent of proposed mining operations and how and on what timeline the mine sites will be reclaimed. In general, an operator must reclaim the land to a use it was capable of supporting before mining or to an alternative postmining land use that OSMRE or the state regulatory authority deems higher or better than the premining land use. In reclaiming the mine site, operators must comply with regulatory standards that govern, among other things, how the reclaimed area is regraded, replanting of the site, and the quality of water flowing from the site. Specifically:

- Operators are generally required to return mine sites to their approximate original contour unless the operator receives a variance from the regulatory authority. To return to this contour, the surface configuration achieved by backfilling and grading of the mined area must closely resemble the general surface configuration of the land

¹¹SMCRA states that “because of the diversity in terrain, climate, biologic, chemical, and other physical conditions in areas subject to mining operations, the primary governmental responsibility for developing, authorizing, issuing, and enforcing regulations for surface mining and reclamation operations subject to this act should rest with the States.” 30 U.S.C. § 1201(f) (2017).

¹²OSMRE implements SMCRA in Tennessee and Washington and for the Crow, Hopi, Navajo, and Ute Mountain Ute Indian tribes.

¹³In this report, we refer to permittees and operators as operators. The permittee is the person or entity that holds the permit and is legally responsible for the permit, whereas the operator is the person or entity that conducts coal removal operations. The permittee and the operator may or may not be the same person or entity.

before mining and blend into and complement the drainage pattern of the surrounding terrain, with all highwalls and spoil piles eliminated.¹⁴

- Operators are required to demonstrate successful revegetation of the mine site for 5 years (in locations that receive more than 26 inches of rain annually) or 10 years (in drier areas). States have requirements for what vegetation may be planted depending on the approved postmining land use. For example, West Virginia's regulations call for sites with a postmining land use of forest land to be planted with at least 500 woody plants per acre. The state specifies that at least five species of trees be used, including at least three of the species being higher value hardwoods, such as oak, ash, or maple.
- SMCRA requires that financial assurances be sufficient to ensure reclamation compliant with water quality standards, including those established by the Environmental Protection Agency or the states under the Clean Water Act.¹⁵ SMCRA's implementing regulations also contain additional water protection requirements. For example, the regulations require that all surface mining and reclamation activities be conducted to minimize disturbance of the hydrologic balance within the permit and adjacent areas and to prevent material damage to the hydrologic balance outside the permit area.¹⁶

The federal government also enacted SMCRA, in part, to implement an abandoned mine land program to promote the reclamation of mined areas left without adequate reclamation prior to 1977, when SMCRA was enacted, and that continue to substantially degrade the quality of the environment, prevent or damage the beneficial use of land or water resources, or endanger the health or safety of the public.¹⁷ Specifically,

¹⁴A highwall is a cliff of exposed rock left after a surface mining operation has cut into the landscape. A spoil pile consists of rock and other excavated material that is produced by mining.

¹⁵The Clean Water Act is codified at 33 U.S.C. 1251-1388 (2017). For more information on the role the Clean Water Act plays in the regulation of the surface effects of coal mining, see GAO, *Surface Coal Mining: Financial Assurances for, and Long-Term Oversight of, Mines with Valley Fills in Four Appalachian States*, GAO-10-206 (Washington, D.C.: Jan. 14, 2010).

¹⁶Hydrologic balance means the relationship between the quality and quantity of water inflow to, water outflow from, and water storage in a hydrologic unit, such as a drainage basin, aquifer, soil zone, lake, or reservoir. 30 C.F.R. §701.5 (2017).

¹⁷To finance reclamation of abandoned mine sites, the legislation established an Abandoned Mine Reclamation Fund, funded in part by fees on coal production. Abandoned mine reclamation funds are distributed annually to states with approved reclamation programs.

Congress found that a substantial number of acres of land throughout the United States had been disturbed by surface and underground coal mining on which little or no reclamation was conducted. Further, it found that the impacts from these unclaimed lands imposed social and economic costs on residents in nearby areas as well as impaired environmental quality. Since the abandoned mine land program was created, approximately \$3.9 billion has been spent to reclaim abandoned mine lands, and there is at least \$10.2 billion in remaining reclamation costs for coal mines abandoned prior to 1977, as of September 30, 2017, according to OSMRE.

Financial Assurances for Reclamation

SMCRA generally requires operators to submit a financial assurance in an amount sufficient to ensure that adequate funds will be available for OSMRE or the state regulatory authority to complete the reclamation if the operator does not do so. The amount of financial assurance required is determined by the regulatory authority—OSMRE or the state—and is based on its calculation of the estimated cost to complete the reclamation plan it approved as part of the mining permit.¹⁸ Financial assurance amounts can be adjusted as the size of the permit area or the projected cost of reclamation changes.

SMCRA also authorizes states to enact an OSMRE-approved alternative bonding system as long as the alternative achieves the same objectives. One kind of alternative bonding system is known as a bond pool. Under this type of system, the operator may post a financial assurance for an amount determined by multiplying the number of acres in the permit area by a per-acre assessment. The per-acre assessment may vary depending on the site-specific characteristics of the planned mining operation and the operator's history of compliance with state regulations. However, the per-acre bond amount may be less than the estimated cost of reclamation. To supplement the per-acre bond, the operator generally must pay a fee for each ton of mined coal and may also be required to pay other types of fees. These funds are pooled and can be used to reclaim sites that participants in the alternative bonding system do not reclaim. Under OSMRE regulations, all alternative bonding systems must

¹⁸When OSMRE is the regulatory authority, agency officials said they use a handbook for calculating financial assurance amounts. See Office of Surface Mining Reclamation and Enforcement, *Handbook for Calculation of Reclamation Bond Amounts*. Primacy states can choose to use the handbook but are not required to do so and can also develop their own approaches to calculating the amount required.

provide a substantial economic incentive for the operator to comply with reclamation requirements and must ensure that the regulatory authority has adequate resources to complete the reclamation plan for any sites that may be in default at any time.¹⁹

OSMRE regulations implementing SMCRA recognize three major types of financial assurances: surety bonds, collateral bonds, and self-bonds.

- A surety bond is a bond in which the operator pays a surety company to guarantee the operator's obligation to reclaim the mine site. If the operator does not reclaim the site, the surety company must pay the bond amount to the regulatory authority, or the regulatory authority may allow the surety company to perform the reclamation instead of paying the bond amount.
- Collateral bonds include cash; certificates of deposit; liens on real estate; letters of credit; federal, state, or municipal bonds; and investment-grade rated securities deposited directly with the regulatory authority.
- A self-bond is a bond in which the operator promises to pay reclamation costs itself. Self-bonds are available only to operators with a history of financial solvency and continuous operation. To remain qualified for self-bonding, operators must, among other requirements, do one of the following: have an "A" or higher bond rating, maintain a net worth of at least \$10 million, or possess fixed assets in the United States of at least \$20 million. In addition, the total amount of self-bonds any single operator can provide shall not exceed 25 percent of its tangible net worth in the United States. Primacy states have the discretion on whether to accept self-bonds.

¹⁹The regulations do not define "substantial economic incentive."

State Regulatory Authorities and OSMRE Reported Holding \$10.2 Billion in Various Types of Financial Assurances

State regulatory authorities and OSMRE reported holding a total of approximately \$10.2 billion in surety bonds, collateral bonds, and self-bonds as financial assurances for coal mine reclamation in 2017.²⁰ Of the total amount of financial assurances, approximately 76 percent (\$7.8 billion) were in the form of surety bonds, 12 percent (\$1.2 billion) in collateral bonds, and 12 percent (\$1.2 billion) in self-bonds (see fig. 1).

Figure 1: Amount of Financial Assurances Held in 2017, by Type, for Reclaiming Coal Mines in States and on Indian Tribal Lands with Active Coal Mining



Sources: GAO analysis of information provided by state regulatory authorities and the Office of Surface Mining Reclamation and Enforcement. | GAO-18-305

Twenty-four states reported holding surety bonds, 20 states reported holding collateral bonds, and 8 states reported holding self-bonds (see table 1).²¹ In addition, OSMRE officials identified 6 states—Indiana, Kentucky, Maryland, Ohio, Virginia, and West Virginia—that have also established alternative bonding systems, such as bond pools. In a state with a bond pool, the operator may generally post a financial assurance for less than the full estimated cost of reclamation; in addition, the operator must pay into a bond pool.²² The pooled funds can be used to

²⁰The states and OSMRE provided the data to us from May to August 2017; however, because the states and OSMRE vary in how often they update their respective databases, the effective date the data reflect ranges from March to August 2017.

²¹We previously examined federal requirements for financial assurances for surface effects of coal mining, hardrock mining, onshore oil and gas extraction, and wind and solar energy development, and found that of these mining and energy development activities, coal mining was the only one where self-bonding was allowed under federal requirements. See GAO, *Financial Assurances for Reclamation: Federal Requirements and Policies for Selected Mining and Energy Development Activities*, GAO-17-207R (Washington, D.C.: Dec. 16, 2016).

²²In Maryland, operators must post a financial assurance for the full estimated cost of reclamation. The state's bond pool serves as a supplement to be used if bond funds are otherwise not sufficient for reclamation.

supplement forfeited financial assurances to reclaim sites that operators participating in the bond pool do not reclaim.

Table 1: Amount of Financial Assurances Held in 2017, by Type and State, for Reclaiming Coal Mines in States and on Indian Tribal Lands with Active Coal Mining

State or Indian tribe	Type of financial assurance (dollars)			Total (dollars)
	Surety bond	Collateral bond^a	Self-bond^b	
Alabama	221,323,000	18,602,000	0	239,925,000
Alaska	261,000	6,000,000	9,617,000	15,878,000
Arkansas	1,126,000	1,330,000	0	2,456,000
Colorado	94,890,000	5,196,000	91,318,000	191,404,000
Crow	39,613,000	1,703,000	0	41,316,000
Hopi	0	0	0	0
Illinois	386,522,000	10,244,000	0	396,765,000
Indiana ^c	215,444,000	2,351,000	0	217,795,000
Kansas	0	2,953,000	0	2,953,000
Kentucky ^c	885,992,000	39,414,000	0	925,406,000
Louisiana	156,834,000	0	0	156,834,000
Maryland ^c	18,659,000	4,027,000	0	22,685,000
Mississippi	53,824,000	0	0	53,824,000
Missouri	636,000	2,985,000	7,266,000	10,887,000
Montana	470,903,000	1,753,000	0	472,656,000
Navajo	643,562,000	0	0	643,562,000
New Mexico	287,066,000	0	0	287,066,000
North Dakota	100,322,000	21,247,000	211,230,000	332,799,000
Ohio ^c	58,465,000	3,874,000	0	62,339,000
Oklahoma	16,534,000	4,899,000	0	21,433,000
Pennsylvania	976,693,000	60,739,000	0	1,037,431,000
Tennessee	44,426,000	3,661,000	0	48,087,000
Texas	193,980,000	996,950,000	249,700,000	1,440,630,000
Utah	57,886,000	6,754,000	0	64,640,000
Ute Mountain Ute	16,704,000	10,000	0	16,714,000
Virginia ^c	235,312,000	3,531,000	24,964,000	263,807,000
Washington	139,295,000	6,200,000	0	145,495,000

State or Indian tribe	Type of financial assurance (dollars)			
	Surety bond	Collateral bond^a	Self-bond^b	Total (dollars)
West Virginia ^c	801,910,000	29,108,000	140,116,000	971,135,000
Wyoming	1,641,061,000	4,512,000	425,947,000	2,071,520,000
Total	7,759,244,000	1,238,041,000	1,160,158,000	10,157,443,000

Sources: GAO analysis of information provided by state regulatory authorities and the Office of Surface Mining Reclamation and Enforcement. | GAO-18-305

Notes: The effective date the data reflect ranges from March to August 2017 and varies by state and Indian tribe. Financial assurance amounts are rounded to the nearest \$1,000. Totals may not add due to rounding.

^aCollateral bonds include cash; certificates of deposit; liens on real estate; letters of credit; federal, state, or municipal bonds; and investment-grade rated securities deposited directly with the regulatory authority.

^bSelf-bonds are bonds for which the operator guarantees reclamation costs on the basis of its own finances rather than by securing a bond through another company or providing collateral.

^cState also has established an alternative bonding system, such as a bond pool. A bond pool supplements financial assurances that are posted for less than the full estimated cost of reclamation.

About Half of the States Reported at Least One Forfeited Financial Assurance

States and OSMRE reported that operators forfeited more than 450 financial assurances for reclaiming coal mines between July 2007 and June 2016,²³ with 13 of the 25 states reporting at least one forfeiture.²⁴ States and OSMRE reported that the amount of financial assurance forfeited was sufficient to cover the cost of required reclamation in about 52 percent of the cases and did not cover the cost of required reclamation in about 22 percent of the cases.²⁵ In the remainder of the cases (26 percent), the state or OSMRE reported that it had not yet determined if the financial assurance amount covered the reclamation costs that it was intended to cover. State and OSMRE officials said that it can take many years to fully reclaim a site and that it may take time for them to identify the extent of reclamation needed and to determine if the amount of financial assurance forfeited was sufficient to cover reclamation costs.

State and OSMRE officials said there were several reasons why the amount of financial assurance obtained might not be sufficient to cover reclamation costs. For example, officials said the amount of financial assurance might not be sufficient if an operator mined in a manner inconsistent with the approved mining plan upon which the amount of financial assurance was calculated or if mining activity resulted in water pollution that was not considered when the amount of financial assurance was calculated. In cases where the amount of financial assurance does not cover the cost of reclamation, the operator remains responsible for

²³Financial assurance forfeiture occurs when a mine operator does not fully reclaim an area disturbed by mining in accordance with its permit and the regulatory authority collects the financial assurance to pay for reclamation. In some cases, an operator provided more than one financial assurance for a single coal mine; therefore, the number of financial assurances forfeited is higher than the number of mines where a forfeiture occurred. States and OSMRE generally report coal mining data according to the evaluation year, which runs from July 1 to June 30 of the following year.

²⁴Most of the financial assurances forfeited come from mining operations in 3 states—Kentucky, Pennsylvania, and West Virginia. State officials cited several reasons why these states had the most forfeitures. For example, these states had a large number of mines, including smaller mines whose operators may have fewer financial resources. OSMRE did not report any forfeitures on Indian tribal lands for the four tribes with active coal mining programs.

²⁵These percentages exclude forfeitures involving alternative bonding systems, such as bond pools, where the amount of financial assurance an operator provides is not intended to cover the full estimated cost of reclamation. For cases in which the states and OSMRE reported that the financial assurance forfeited did not cover the cost of reclamation, we did not collect additional information.

reclaiming the mine site. However, OSMRE officials said that in those cases where the operator may be experiencing financial difficulties, it might be difficult for the states or OSMRE to compel the operator to complete the reclamation or provide additional funds to do so without having the operator go out of business or into bankruptcy. If the operator does not reclaim the site, the regulatory authority must use the forfeited financial assurance to do so. If the forfeited funds are not adequate, the site may not be fully reclaimed unless the regulatory authority either successfully sues the operator for more funds or provides any additional funds needed for reclamation. One other source of funds states can use to reclaim forfeited mines is civil penalties that the United States government collects from operators that violate conditions of their mining permits.²⁶ OSMRE obligated approximately \$2.8 million in civil penalties from fiscal years 2012 through 2017 for states to use to perform reclamation in cases where the financial assurance was not sufficient, according to agency officials.

OSMRE Has Taken a Variety of Steps Related to Oversight of Financial Assurances

OSMRE and State Regulators Periodically Review Financial Assurance Amounts

OSMRE has taken steps—including periodically reviewing financial assurance amounts, inspecting mine sites, and reviewing state programs that implement SMCRA—to oversee financial assurances and aspects of the mining and reclamation process that can affect whether the amount of financial assurances obtained will cover the cost of required reclamation.

SMCRA requires OSMRE or the primacy state regulatory authority to calculate the amount of financial assurance required for each mine and to adjust the amount when the area requiring bond coverage increases or decreases or when the cost of future reclamation changes. OSMRE officials and state regulatory authority officials from four of the six states we interviewed said they generally review the amount of financial assurance at least every 2 1/2 years or when the mining plan has been modified in a way that may affect the amount of financial assurance

²⁶Civil penalties are available to the extent authorized in the applicable annual appropriations act or other relevant statute. 30 C.F.R. § 845.21(a) (2017).

required.²⁷ Such periodic reviews are in part to help ensure that OSMRE and state regulatory authorities continue to hold an amount sufficient to complete required reclamation as conditions change. These reviews can lead to OSMRE or the state regulatory authority changing the amount of financial assurance required for a mine. For example:

- A state regulatory authority official in Utah said that the regulatory authority reviewed an existing mine permit in 2014, which led to it recalculating the estimated cost of reclamation on the basis of current costs. The state regulatory authority requested that the operator provide a financial assurance to cover the difference (approximately \$195,000), in addition to the \$445,000 financial assurance already in place. However, the official said that the operator—which had stopped mining the site in 2012 and filed for bankruptcy in 2013—did not provide the additional financial assurance amount. As a result, in 2017 the state regulatory authority collected the financial assurance that was in place (i.e., the operator forfeited its assurance). The official said in December 2017 that the state regulatory authority is determining the steps it will take to reclaim the site and expects that the forfeited amount will be sufficient to cover reclamation costs.
- OSMRE officials said that the agency reviewed a permit for a mine on Navajo tribal lands and determined that it needed to ask the operator to provide an additional financial assurance in the amount of \$5.7 million. The increase was due to inflation and to include certain costs, such as the cost of mobilizing equipment needed for reclamation, that had inadvertently been excluded from the earlier calculation of the financial assurance required.²⁸ The officials said that the operator provided the additional financial assurance amount.
- State regulatory authority officials in Wyoming said they review financial assurance amounts annually, and in 2017 they reduced the financial assurance for one mine by almost \$35 million because of a

²⁷According to OSMRE officials, financial assurance amounts are generally calculated at permit issuance and mid-point review, and most permits cover 5 years. Wyoming state regulatory authority officials said that they review financial assurance amounts annually. Pennsylvania state regulatory officials said that in their state, the review of the financial assurance calculation occurs at permit renewal, which happens after 5 years, and is optional during the mid-point review.

²⁸The operator did not include these costs in the calculation of estimated reclamation costs that it submitted to OSMRE and OSMRE did not initially identify the oversight, according to OSMRE officials.

substantial decline in fuel costs and the mine's ability to share the cost of needed reclamation equipment with a neighboring mine.

OSMRE Inspects Mine Sites

SMCRA requires OSMRE to make an average of at least one complete inspection per calendar quarter and one partial inspection per month for each active permit for which it is the regulatory authority to ensure that mines are in compliance with SMCRA and federal regulations.²⁹ Complete inspections cover all inspection elements in OSMRE's directive, while partial inspections may instead focus on issues that most frequently result in violations or a specific topic identified for oversight, according to OSMRE officials. In addition, OSMRE's directive instructs the agency to inspect a sample of mines annually in states that have primacy to monitor and evaluate approved state programs' compliance with SMCRA. The total number of inspections OSMRE is directed to conduct in primacy states is based on the number of inspectable units in each state.³⁰ Complete inspections are to be done on 33 percent of those sites selected for inspection.³¹ Overall, OSMRE completed more inspections in primacy states than directed each year for evaluation years 2013 through 2016, according to agency data.³² For example, in evaluation year 2016, OSMRE's directive called for it to conduct 1,225 inspections and OSMRE completed 1,388.

As part of a complete inspection, OSMRE confirms that the operator is following the mining and reclamation plans to assure that the amount of financial assurance in place is adequate, according to OSMRE officials. If

²⁹In primacy states, the state regulatory authority is also required to make an average of one complete inspection per calendar quarter and one partial inspection per month for all active permits.

³⁰OSMRE's directive instructs the agency to determine the number of oversight inspections OSMRE conducts in primacy states on the basis of the number of "inspectable units" in each state. For example, for states with fewer than 5 inspectable units, OSMRE is required to inspect at least 1 of them annually, whereas for states with between 5 and 1,000 units, OSMRE is required to inspect at least 25 percent of them annually. An inspectable unit is a surface coal mining and reclamation operation or a coal exploration operation for which an inspection obligation exists under 30 C.F.R. § 840.11(a)-(c) or under section 842.11(c). An inspectable unit may consist of an individual permit or a consolidation of several permits issued to the same permittee but which for all practical purposes constitutes the same surface coal mining and reclamation operation.

³¹For the remaining inspections, OSMRE can conduct a complete or partial inspection.

³²This refers to the total number of inspections OSMRE was directed to conduct nationwide. In some cases, OSMRE did not conduct the directed number of inspections in a particular state in a given year.

a violation is identified during an inspection, SMCRA requires OSMRE to issue a ten-day notice to the state regulatory authority or an immediate cessation order to the operator.³³ If the violation increases the estimated cost of reclamation (e.g., if the operator disturbed more land than it was approved for) or an adequate financial assurance had not been collected, OSMRE or the state regulatory authority can request that the operator provide an additional financial assurance. For example:

- OSMRE issued a ten-day notice to the Pennsylvania regulatory authority in 2015 because a water treatment system for a mine in that state did not have a financial assurance. According to OSMRE officials, the state regulatory authority took appropriate action to resolve the situation by issuing an order for the operator to post a financial assurance within 7 days.
- During an inspection of a mine in Tennessee, a nonprimacy state, OSMRE determined that the operator had not correctly reclaimed a portion of the mine because the slope of the regraded area was too steep, according to an OSMRE official. For the reclamation work that would be needed to regrade that area, OSMRE determined that the operator needed to provide an additional financial assurance of \$272,000.

OSMRE Reviews State Coal Programs

Under SMCRA, OSMRE is required to evaluate each primacy state's coal program annually to ensure that it complies with SMCRA. SMCRA includes a requirement that the regulatory authority secure necessary financial assurances to assure the reclamation of each permitted mine site. While OSMRE's directive on oversight of state and tribal regulatory programs does not instruct the agency to review state regulatory authority calculations of financial assurance amounts, it instructs OSMRE to focus on the state programs' success in achieving the overall purposes of SMCRA. For example, OSMRE, in conducting its oversight, is to evaluate the states' effectiveness in successfully reclaiming lands affected by mining and in avoiding negative effects outside of areas authorized for

³³OSMRE issues a ten-day notice to a state regulatory authority when, on the basis of an inspection, it determines that a violation exists or when it otherwise has reason to believe a violation exists (e.g., because it has received information regarding a violation from the public). Upon receiving such a notice, the state regulatory authority has 10 days to respond to OSMRE indicating whether, in its determination, a violation occurred and, if so, the state's intended response. OSMRE issues a cessation order to an operator if a condition creates an imminent danger to the health or safety of the public or is causing or can reasonably be expected to cause significant, imminent environmental harm.

mining activities.³⁴ If OSMRE's review of a state program identifies an issue that could result in the state not effectively implementing, administering, enforcing, or maintaining all or any portion of its approved coal program, OSMRE can work with the state regulatory authority to develop an action plan to correct the issue. If a state regulatory authority does not take the necessary corrective action, OSMRE may begin the process of withdrawing approval for a part or all of the state's primacy.³⁵

In addition to annually evaluating state programs, OSMRE can conduct national or regional reviews on specific topics. For example, OSMRE conducted a national review in 2010 that examined how state regulatory authorities calculated the required amount of financial assurances for coal mine reclamation.³⁶ The review examined financial assurance practices in 23 states and reported that on the basis of the sample of mining permits reviewed, OSMRE was unable to determine if the amount of financial assurances was adequate for at least one of the permits it reviewed in 10 of the 23 states. Among the potential issues OSMRE identified were errors in the methods state regulatory authorities used to calculate financial assurance amounts and insufficient information in the reclamation plan upon which to calculate reclamation costs.

OSMRE has worked with the 10 state regulatory authorities to address the financial assurance issues identified in the 2010 review. For example, OSMRE's review found that the regulatory authority in Pennsylvania did not secure sufficient financial assurances to complete reclamation plans, in part because amounts were not calculated based on the actual sizes of the areas excavated for mining. In August 2014, OSMRE and Pennsylvania's regulatory authority agreed to an action plan to ensure that the financial assurances for all active and new permits would be calculated using the actual sizes of the excavated areas. According to an OSMRE official, as of February 2017, the state regulatory authority had

³⁴Office of Surface Mining Reclamation and Enforcement, *Oversight of State and Tribal Regulatory Programs*.

³⁵An OSMRE directive defines an action plan as a detailed schedule of specific measures to be taken to resolve an issue identified during OSMRE's oversight of a state coal program that could result in a failure by the state to effectively implement, administer, enforce, or maintain all or any portion of its approved program. Office of Surface Mining Reclamation and Enforcement, *Corrective Actions for Regulatory Program Problems and Action Plans*, REG-23 (Washington, D.C.: Jan. 31, 2011).

³⁶Office of Surface Mining Reclamation and Enforcement, *2010 National Priority Review*. OSMRE's Acting Director requested this review in 2009.

recalculated the financial assurance amount for all mines and had secured the additional financial assurances needed from operators of all but two of the mines. State officials said in October 2017 that they were continuing to work to obtain the assurances required for the two mines.

OSMRE's 2010 review also found that financial assurances in Kentucky were not always sufficient to cover required reclamation costs, in part because the method Kentucky's regulatory authority used to calculate financial assurance amounts did not factor in all costs, such as the cost of moving equipment to and from the reclamation site. In February 2011, OSMRE and Kentucky's regulatory authority signed an action plan identifying steps needed to address the issues OSMRE had identified. However, in May 2012, OSMRE determined that the state regulatory authority's proposed changes to its method for calculating financial assurance amounts was an improvement but would not result in the authority obtaining sufficient funds to cover required reclamation. As a result, OSMRE initiated the process of revoking Kentucky's primacy for this aspect of its program. In response, Kentucky implemented regulations to increase the minimum financial assurance required. The regulations also required the state regulatory authority to evaluate financial assurance amounts every 2 years to determine whether they need to be increased, among other things. The state regulatory authority sent a set of program amendments to OSMRE designed to address the identified deficiencies, some of which OSMRE is currently reviewing.

OSMRE and State Regulatory Authorities Face a Number of Challenges in Managing Financial Assurances

OSMRE and state regulatory authorities face a number of challenges in managing financial assurances for coal mine reclamation—including those related to self-bonding, unanticipated reclamation costs, and the financial stability of surety companies—according to federal and selected state regulatory authority officials, representatives from organizations associated with the mining and financial assurance industries, and representatives from environmental nongovernmental organizations whom we interviewed.³⁷

³⁷Challenges included were identified by at least four parties we interviewed. Not all parties we interviewed commented on every challenge identified.

Regulatory Authorities Face Several Challenges Associated with Self-Bonding

Challenges facing OSMRE and state regulatory authorities related to self-bonding include the following:

- **Not knowing the complete financial health of an operator.** The information federal regulations require operators to provide to regulatory authorities may provide an incomplete picture of the financial health of an operator, according to some parties we interviewed.³⁸ For example, the financial information that operators provide reflects their past financial health, which may not reflect the operators' current financial position, according to OSMRE's response to the 2016 petition seeking revisions to its self-bonding regulations.³⁹ In addition, if an operator applying for a self-bond is a subsidiary of another company, the operator is not required by regulation to submit information on the financial health of its parent company. While the operator applying may have sufficient financial assets to qualify for self-bonding, if its parent company experiences financial difficulties, the operator's assets may be drawn on to meet the parent's obligations, which could worsen the financial health of the self-bonded operator. In addition, according to OSMRE officials, even if OSMRE or a state regulatory authority were to become aware that an operator's parent company was at financial risk, it would be difficult for the agency to deny the operator's request for a self-bond because eligibility is specific to the entity applying for the self-bond, according to regulations.

OSMRE could change its self-bonding regulations to require more information, according to OSMRE officials. However, the financial relationships between parent and subsidiary companies have become increasingly complex, making it difficult to ascertain an operator's financial health on the basis of information reported in company financial and accounting documents, according to officials. When OSMRE first approved its self-bonding regulations in 1983, it noted that it was attempting to provide rules that would allow self-bonding without necessitating regulatory authorities to employ financial experts to determine which companies should be allowed to self-bond. However, according to OSMRE officials, financial expertise is now often needed to evaluate the current complex financial structures of

³⁸In this report, "some" refers to statements made by three or more parties.

³⁹81 Fed. Reg. 61,612 (Sept. 7, 2016). Following a review of department actions that could affect domestic energy production, Interior announced in October 2017 that it would reconsider the need for and scope of potential changes to its bonding regulations.

large coal companies, which was not envisioned when the regulations were developed.

- **Difficulty in determining whether an operator qualifies for self-bonding.** The regulatory authority in a given state may not be aware that an operator had self-bonded in other states, making it difficult for the agency to determine whether the operator qualifies for self-bonding, according to some parties we interviewed. Operators are only allowed to self-bond for up to 25 percent of their net worth in the United States, according to regulations. Regulatory authority decisions on accepting self-bonds generally focus on assessing activities occurring in a specific state, not nationwide, according to the Interstate Mining Compact Commission.⁴⁰ As a result, the state regulatory authority or OSMRE may know whether an operator has applied for self-bonds in other states that if approved would exceed 25 percent of its net worth in total.
- **Difficulty in replacing existing self-bonds with other assurances if needed.** OSMRE and state regulatory authorities may find it difficult to get operators to replace existing self-bonds with another type of financial assurance when needed, according to some parties we interviewed. If an operator no longer qualifies for self-bonding (e.g., if it has declared bankruptcy), federal regulations require it to either replace self-bonds with other types of financial assurances or stop mining and reclaim the site. In either case, however, some parties noted that such actions could lead to a worsening of the operator's financial condition, which could make it less likely that the operator will successfully reclaim the site.

Some parties we interviewed have noted that regulatory authorities may be reluctant to direct the operator to replace a self-bond with another type of financial assurance and may instead allow the operator to keep mining so that any generated revenue could help the operator reclaim the site. For example, in 2015 the Wyoming regulatory authority determined that an operator no longer qualified for self-bonding and ordered it to replace a \$411 million self-bond. However, the operator entered into bankruptcy without having replaced the self-bond. In this case, the state regulatory authority determined that reclamation was more likely to occur if the operator continued mining and allowed the operator to do so without a valid

⁴⁰Gregory E. Conrad, Interstate Mining Compact Commission, "Mine Reclamation Bonding – from Dilemma to Crisis to Reinvention: What's a State Regulator to Do?" (paper presented at the Energy and Mineral Law Foundation Winter Workshop on Energy Law, February 2014).

financial assurance.⁴¹ The operator replaced its self-bond as a part of its bankruptcy settlement approximately 17 months after the state regulatory authority's order to replace the self-bond, according to OSMRE officials. However, if a self-bonded operator were to enter bankruptcy and did not secure a financial assurance to replace the self-bond or complete the required reclamation, the state regulatory authority would have to work through the bankruptcy proceedings to obtain funds for reclamation, according to OSMRE's preamble to its 1983 self-bonding regulations.⁴² As a result, the state may recover only some, or possibly none, of the funds promised through the self-bond, and the cost of reclamation could fall on taxpayers.

- **Difficulty in managing the risk associated with self-bonding.** The risk associated with self-bonding is greater now than when the practice was first authorized under SMCRA, according to some parties we interviewed. According to SMCRA, the purpose of financial assurances is to ensure that regulatory authorities have sufficient funds to complete required reclamation if the operator does not do so. While SMCRA allows self-bonding in certain circumstances, when OSMRE first approved its self-bonding regulations, the agency did so noting that at the time there were companies financially sound enough that the probability of bankruptcy was small. Furthermore, the regulations stated that the intent was to avoid, to the extent reasonably possible, the acceptance of a self-bond from a company that would enter bankruptcy.⁴³ However, as previously mentioned, three of the largest coal companies in the United States declared bankruptcy in 2015 and 2016, and these companies held approximately \$2 billion in self-bonds at the time, according to an

⁴¹Wyoming entered into a voluntary agreement with the operator under which the state would gain a \$61 million “superpriority” claim in case of liquidation in exchange for a promise to stay any enforcement action regarding self-bonding until the reorganization of the operator’s debts could be finalized. A superpriority claim gives a creditor a priority claim over other creditors in bankruptcy proceedings, increasing the likelihood that they would obtain the claim if the company is unable to emerge from bankruptcy.

⁴²Bond and Insurance Requirements for Surface Coal Mining and Reclamation Operations Under Regulatory Programs; Self Bonding, 48 Fed. Reg. 36,418 (Aug.10, 1983).

⁴³48 Fed. Reg. 36,418 (Aug.10, 1983).

OSMRE August 2016 policy advisory, making it a very different risk landscape than originally envisioned.⁴⁴

Following these bankruptcies—and recognizing that the coal industry was likely to continue to face economic challenges for several more years—OSMRE initiated steps in 2016 to reexamine the role of self-bonding for coal mine reclamation. Specifically, as previously mentioned, OSMRE issued a policy advisory in August 2016 noting that given these circumstances, state regulatory authorities should exercise their discretion under SMCRA and not accept new or additional self-bonds for any permit until coal production and consumption market conditions reach equilibrium. OSMRE has reported that it is not likely for that to occur until at least 2021.⁴⁵ OSMRE also announced in September 2016 that the agency planned to examine changes to its bonding regulations that would, among other things, help ensure that reclamation is completed if a self-bonded operator does not do so.⁴⁶ However, following a review of department actions that could affect domestic energy production, Interior announced in October 2017 that it was reconsidering the need for and scope of potential changes to its bonding regulations.⁴⁷ OSMRE officials said that they did not have a timeline for finalizing a decision on potential changes in its bonding regulations. In addition, OSMRE rescinded its August 2016 policy advisory that states take steps to assess whether operators currently using self-bonds can still qualify to do so and that states not accept any new self-bonds.⁴⁸

Similar issues involving bankruptcies of hardrock mining operators led the Bureau of Land Management to implement regulations in 2001

⁴⁴Office of Surface Mining Reclamation and Enforcement, *Policy Advisory: Self-Bonding*. According to an Interior October 2017 review, the three companies have completed their plans for Chapter 11 bankruptcy reorganization, and either have or are expected to replace all self-bonds with other forms of financial assurances. See Department of the Interior, *Review of the Department of the Interior Actions that Potentially Burden Domestic Energy* (Washington, D.C.: Oct. 24, 2017).

⁴⁵Office of Surface Mining Reclamation and Enforcement, *Policy Advisory: Self-Bonding*.

⁴⁶OSMRE announced this step in response to a petition from a nongovernmental organization asking the agency to revise its self-bonding regulations. 81 Fed. Reg. 61,612 (Sept. 7, 2016).

⁴⁷Department of the Interior, *Review of the Department of the Interior Actions that Potentially Burden Domestic Energy*. This review was directed by Executive Order 13783.

⁴⁸Interior rescinded this policy advisory in response to Executive Order 13783.

eliminating the use of self-bonding for hardrock mining.⁴⁹ In doing so, the Bureau of Land Management determined that a self-bond is less secure than other types of financial assurances, especially in cases where commodity prices fluctuate. The agency also noted that operators that would otherwise be eligible to self-bond should not have a significant problem obtaining another type of financial assurance. In our previous work examining other types of environmental cleanup, we found that the financial risk to the government and the amount of oversight needed for self-bonds are relatively high compared to other forms of financial assurances.⁵⁰ Furthermore, we also previously reviewed federal financial assurance requirements for coal mining, hardrock mining, onshore oil and gas extraction, and wind and solar energy production and found that of these activities coal mining is the only one where self-bonding was allowed.⁵¹ Because SMCRA explicitly allows states to decide whether to accept self-bonds, eliminating the risk that self-bonding poses to the federal government and states would require that SMCRA be amended.⁵²

Obtaining Additional Financial Assurances for Unanticipated Reclamation Can Be Difficult

Unanticipated reclamation costs, such as those related to long-term treatment for water pollution, may arise late in a mine's projected lifespan, and the operator may not have the financial means to cover the additional costs, according to OSMRE officials. Under SMCRA, OSMRE and state regulatory authorities are not to approve a permit for a coal mine if the regulatory authority expects the mine to result in long-term water pollution. As a result, since long-term water pollution is not anticipated to occur, the cost of addressing it would not be included in the initial financial assurance that the operator provides. If the regulatory authority

⁴⁹Under U.S. mining laws, minerals are classified as locatable, leasable, or saleable. Locatable minerals—often referred to as hardrock minerals—include, for example, copper, lead, magnesium, gold, silver, and uranium. For more information on financial assurances for hardrock mining, see GAO, *Hardrock Mining: BLM Needs to Better Manage Financial Assurances to Guarantee Coverage of Reclamation Costs*, GAO-05-377 (Washington, D.C.: June 20, 2005).

⁵⁰GAO, *Environmental Liabilities: EPA Should Do More to Ensure That Liable Parties Meet Their Cleanup Obligations*, GAO-05-658 (Washington, D.C.: Aug. 17, 2005).

⁵¹GAO-17-207R.

⁵²Some states have used their discretion under SMCRA to take steps to restrict self-bonding. For example, Virginia no longer accepts self-bonds because the practice created a risk that the cost of reclamation could pass onto the tax payers should an operator default. In addition, Wyoming is considering changing its regulations to make the criteria to qualify for self-bonding more stringent.

later determines that long-term water treatment is needed, the regulatory authority must adjust the amount of financial assurance that the operator is required to provide.

Some parties we interviewed have also noted that the costs and duration of long-term water treatment are not well defined and that surety bonds are not well-suited to provide assurance for such indefinite long-term costs. For example, according to the Interstate Mining Compact Commission, surety bonds are designed for shorter-term, defined obligations that have a high certainty for bond release following the completion of reclamation. To help address this challenge, some states have established, or allowed operators to establish, trust funds to help cover such unanticipated reclamation costs. For example, West Virginia established a fund, primarily supported through a tax on the amount of coal mined, to operate water treatment systems on forfeited sites. West Virginia's regulatory authority is also working to evaluate permits for sites with water pollution to estimate water treatment costs within the state more precisely. Similarly, Pennsylvania allows operators to establish trust funds that are maintained by foundations and monitored by the state regulatory authority and are intended to ensure that there are sufficient funds to cover the costs of long-term water treatment, according to state regulatory authority officials. In addition, the OSMRE-run coal program in Tennessee allows trust funds for water treatment, in part because an assurance system that provides an income stream may be better suited to ensuring the treatment of long-term water pollution than conventional financial assurances, according to an OSMRE notice in the *Federal Register*.⁵³

⁵³Tennessee Federal Regulatory Program, 72 Fed. Reg. 9,616 (Mar. 2, 2007).

Determining the Financial Stability of Surety Companies Has Been Challenging in Certain Instances

The utility of surety bonds in providing a financial assurance depends on the surety company's ability to pay the amount pledged if the operator forfeits. OSMRE regulations require that a surety company be licensed to do business in the state where a mine is located.⁵⁴ Some parties we interviewed noted that surety companies have declared bankruptcy or experienced financial difficulties in the past and could experience similar difficulties in the future. In addition, two states reported recent issues related to surety companies. For example, state regulatory authority officials in Alabama said that a surety company that had provided surety bonds totaling \$760,000 for four mines in that state had gone bankrupt or was insolvent. As of May 2017, the state had collected only \$127,000. Similarly, state regulatory authority officials in Alaska said that as of August 2017, the state had not collected any part of a forfeited \$150,000 surety bond because the surety company had gone bankrupt. In our previous work examining other types of environmental cleanup, we have found that the financial risk to the government and the amount of oversight needed for surety bonds are relatively low to moderate compared to other forms of financial assurances.⁵⁵

Conclusions

Billions have been spent to reclaim mines abandoned prior to the financial assurance requirements SMCRA put in place, and billions more remain. Under SMCRA, self-bonding is allowed for coal mine operators with a history of financial solvency and continuous operation—the only type of energy production or mineral extraction activity we have reviewed for which this is allowed. Bankruptcies of coal mine operators in 2015 and 2016 have highlighted risks that OSMRE and state regulatory authorities face in managing self-bonding—a risk that may be greater today than when self-bonding was first authorized under SMCRA. If a self-bonded operator were to enter bankruptcy and does not provide a different type of financial assurance or complete the required reclamation, the regulatory authority and the taxpayer potentially assume the risk of paying for the reclamation. Although OSMRE said it would examine changes to its self-bonding regulations following recent bankruptcies, Interior recently said that it is reconsidering the need to do so. Because SMCRA explicitly allows states to decide whether to accept self-bonds, eliminating the risk

⁵⁴30 C.F.R. § 800.20 (2017). Acceptable surety companies include those that are listed in the Department of the Treasury's Listing of Certified Companies (Circular 570).

⁵⁵GAO-05-658.

that self-bonding poses would require amending SMCRA. Until such a change is made, the government will remain potentially at financial risk for future reclamation costs resulting from coal mines with unsecured financial assurances.

Matter for Congressional Consideration

Congress should consider amending SMCRA to eliminate the use of self-bonding as a type of financial assurance for coal mine reclamation.
(Matter for Consideration 1)

Agency Comments

We provided a draft of this report to the Department of the Interior for review and comment. Interior did not provide written comments on our findings and matter for congressional consideration. OSMRE provided technical comments in an e-mail, which we incorporated as appropriate.

As agreed with your offices, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies to the appropriate congressional committees, the Secretary of the Interior, the Acting Director of OSMRE, and other interested parties. In addition, the report will be available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staff have any questions, please contact Anne-Marie Fennell at (202) 512-3841 or fennella@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Major contributors to this report are listed in appendix II.



Anne-Marie Fennell
Director
Natural Resources and Environment

List of Requesters

The Honorable Maria Cantwell
Ranking Member
Committee on Energy and Natural Resources
United States Senate

The Honorable Raúl M. Grijalva
Ranking Member
Committee on Natural Resources
House of Representatives

The Honorable Alan S. Lowenthal
Ranking Member
Subcommittee on Energy and Mineral Resources
Committee on Natural Resources
House of Representatives

The Honorable Richard J. Durbin
United States Senate

The Honorable Matt Cartwright
House of Representatives

The Honorable Debbie Dingell
House of Representatives

Appendix I: Characteristics of States GAO Selected for Review to Obtain Additional Information regarding OSMRE Oversight

We selected a nonprobability sample of states to examine the Office of Surface Mining Reclamation and Enforcement's (OSMRE) oversight activities in more detail. We generally selected states that produced the most coal in 2015 but also selected states in order to achieve some variation in factors such as geographic location, the dominant type of coal mining conducted (e.g., surface or underground mining), whether the state had primacy, and whether the state allowed self-bonding (see table 2).

Table 2: Characteristics of States GAO Selected for Review to Obtain Additional Information regarding the Office of Surface Mining and Reclamation's (OSMRE) Oversight

State	Coal produced in 2015 (in thousands of tons) ^a	OSMRE region	Dominant type of coal mining conducted ^b	Primacy or nonprimacy ^c	Allows self- bonding
Illinois	56,101	Mid-Continent ^d	Underground	Primacy	Yes
Kentucky	61,425	Appalachian ^e	Underground	Primacy	No
Montana	41,864	Western ^f	Surface	Primacy	No
Pennsylvania	50,031	Appalachian	Underground	Primacy	Yes
Tennessee	897	Appalachian	Underground	Nonprimacy	Yes
West Virginia	95,633	Appalachian	Underground	Primacy	Yes
Wyoming	375,773	Western	Surface	Primacy	Yes

Source: GAO analysis of U.S. Energy Information Administration, OSMRE, and Interstate Mining Compact Commission data and state and federal regulations. | GAO-18-305

^aAs reported by the U.S. Energy Information Administration. Together, these states represent more than 75 percent of coal mined in the United States in 2015.

^bBased on the amount of coal produced in 2015.

^cStates and Indian tribes can submit a program to implement the Surface Mining Control and Reclamation Act to OSMRE for approval. A state or Indian tribe with an approved program is said to have "primacy" for that program.

^dThe Mid-Continent Region comprises Alabama, Arkansas, Illinois, Indiana, Iowa, Kansas, Louisiana, Mississippi, Missouri, Oklahoma, and Texas.

^eThe Appalachian Region comprises Georgia, Kentucky, Maryland, Massachusetts, Michigan, North Carolina, Ohio, Pennsylvania, Rhode Island, Tennessee, Virginia, and West Virginia.

^fThe Western Region comprises Alaska, Arizona, California, Colorado, Crow Tribe, Hopi Tribe, Idaho, Montana, Navajo Nation, New Mexico, North Dakota, Oregon, South Dakota, Utah, Ute Mountain Ute Tribe, Washington, and Wyoming.

Appendix II: GAO Contact and Staff Acknowledgments

GAO Contact

Anne-Marie Fennell, (202) 512-3841 or fennella@gao.gov

Staff Acknowledgments

In addition to the contact named above, Elizabeth Erdmann (Assistant Director), Antoinette Capaccio, Jonathan Dent, Cynthia Grant, Marya Link, Anne Rhodes-Kline, Sheryl Stein, Guiovany Venegas, and Jack Wang made key contributions to this report.

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