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SECRETARY OF THE INTERIOR
BEFORE THE
HOUSE COMMITTEE ON NATURAL RESOURCES
ON THE GOLD KING MINE INCIDENT
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Introduction

Chairman Bishop, Ranking Member Grijalva, and Members of the Committee, I am happy to appear before you today to discuss the Department of the Interior's response to the Gold King Mine incident and the Bureau of Reclamation's subsequent technical review and assessment of the incident, which was carried out at the request of the Environmental Protection Agency. The Department appreciated the opportunity to brief your staff on several recent occasions on its work related to the Gold King mine incident.

Reclamation's "Technical Evaluation of the Gold King Mine Incident" ("technical review"), made available in October, contains a brief summary of the mine's history and the events that led to the incident on August 5, 2015. While the Gold King Mine portal is not on federal land and is not under the Department's jurisdiction, several of the Department's bureaus do have management responsibilities downstream of the mine and took response actions, discussed in more detail below, as a result of the incident.

An important point, also discussed in more detail below, is the finding in Reclamation's technical review that the conditions and actions that led to the incident are not unique to this situation and are prevalent throughout the West where legacy hardrock mining activities have impacted the environment. As is so often the case, it is unfortunate that an incident like this has to happen to highlight an issue that land managers in both the state and federal governments have been grappling with for years – that addressing abandoned mine lands is a nationwide problem, and mitigating toxic substances released from many of them is a significant undertaking. Abandoned mine lands are located on private, state, federal, and tribal lands. There are tens of thousands of abandoned hardrock sites on federal lands alone. Many of these abandoned mine land sites were mined prior to the implementation of federal surface management environmental

laws that require reclamation and remediation to take place. For those mine sites where no viable potentially responsible party can be determined, the federal government, and ultimately the taxpayer, often bears the burden of addressing these threats to public safety, human health, the environment, and wildlife, rather than the entities that developed and profited from the operations.

Addressing the reclamation and remediation of abandoned hardrock mine lands is a costly problem and one that requires a long-term funding source. To better address the hardrock abandoned mine land problem and to ensure that an equitable share of the costs of reclamation of these abandoned mine lands (AML) sites are not solely borne by the taxpayer, the Administration has proposed legislation that would hold the hardrock mining industry responsible for the remediation of abandoned hardrock mines, just as the coal industry is responsible for remediating abandoned coal sites. The proposal would levy an AML fee on uranium and metallic mines on both public and private lands, and the receipts would be split between federal and non-federal lands. The proposed hardrock AML fee and reclamation program will operate in parallel with the existing coal AML reclamation program as part of a larger effort to ensure the most dangerous abandoned coal and hardrock AML sites are addressed by the responsible industries. We welcome the opportunity to work with the Committee and Congress to address this significant challenge.

This statement will briefly discuss the Department's response in the days immediately following the Gold King Mine incident. Reclamation's technical evaluation of the incident, and will conclude with a discussion of abandoned mine lands managed by the Department and the Department's priorities moving forward.

Gold King Mine Discussion

The Department's, and its bureaus', involvement in the August 5, 2015, incident began when it was notified of the release. At that time, the Department's Regional Environmental Officers in Denver, Albuquerque, and San Francisco began monitoring the situation and sharing information with each other and with regional contacts in the bureaus.

Our bureaus with management responsibilities in the impacted region – the Bureau of Reclamation, the Bureau of Indian Affairs, the U.S. Fish and Wildlife Service, the National Park Service, and the Bureau of Land Management – as well as the U.S. Geological Survey, began carrying out coordinated response activities in support of EPA's On-Scene Coordinator. A survey of those activities is detailed below.

At the request of, and in collaboration with, staff from the San Juan River Basin Recovery Implementation Program in the FWS's New Mexico Ecological Services Field Office, Reclamation increased the release of water from Navajo Reservoir from 650 to 1,300 cubic feet per second in order to maintain a target base flow through the endangered fish habitat of the San Juan River. The increase helped dilute mine contaminants moving through the San Juan River and helped alleviate concerns that the river and endangered fish and wildlife might be impacted. This increase did not result in any lost hydropower at Navajo Dam.

The BIA conducted drinking water sampling as a precautionary measure at five Bureau of Indian Education schools along the San Juan River. BIE and the schools were advised that none of the potable water at the facilities was impacted by the incident, but the testing schedule was implemented to provide further assurance to the communities. BIA has continued to monitor water used by tribes for drinking, irrigation, and agriculture. BIA's Navajo Region also activated an Incident Management Team, which provided emergency livestock drinking water to impacted users along the San Juan River within the Navajo Nation following its closure for agricultural and livestock water uses. The Incident Management Team provided and managed water tanks in various community locations for this effort. Incident management assistance was also provided to EPA through the BIA's Southwest Regional Office.

The FWS worked with the Navajo Dam operators on the increased water releases into the San Juan River. With the New Mexico Fish and Wildlife Coordination Office, FWS also conducted on the ground surveillance of the fish community in the Animas and San Juan Rivers, as well as field sampling of fish communities and surface water, to monitor impacts from the incident. The San Juan River was determined to be at pre-incident levels, and the Animas River was re-opened to recreation on August 14. FWS is continuing to provide support on wildlife issues related to the incident.

The NPS staff at Glen Canyon National Recreation Area provided logistics and coordination support to EPA for water sample collections both on the San Juan River and in the San Juan Arm of Lake Powell, including a boat, a boat operator, housing, and equipment. NPS staff at Aztec Ruins National Monument, where an irrigation canal off the river extends into the park, independently collected and analyzed sediment samples.

The BLM sent a team to assess the situation on the BLM land downstream from the mine to determine if any mitigation efforts were necessary, and worked with the EPA to provide access across BLM lands to pipe water from the Gold King Mine to EPA's treatment plant. The BLM also coordinated with San Juan and La Plata counties in Colorado to verify safe access to BLM recreation areas and to notify the public about the spill. In Utah, the BLM kept river permit holders and other recreationists along the San Juan River abreast of the incident as it evolved.

Finally, the USGS, in cooperation with the EPA, gathered streamgage data in order to confirm the origin of the stream flow spike at Cement Creek and the volume of the spike estimated at three million gallons. USGS also took water and sediment samples and provided both current and historical water quality data to EPA. Just last week USGS launched a new website that will make available to the public data, images, interactive maps, and reports related to the Gold King Mine incident.

Bureau of Reclamation's Technical Assessment

Shortly after the incident, EPA asked the Department to conduct the independent technical review of the incident. That review, led by Reclamation, was designed to be an independent assessment of the factors that contributed to the incident, including the cause of the incident, and it was to provide recommendations to prevent such incidents from occurring in the future. The review was carried out in accordance with the Department's scientific integrity policy by career staff at Reclamation's Technical Service Center in Lakewood, Colorado, with expertise in abandoned mine remediation. The U.S. Army Corps of Engineers and the USGS peer-reviewed Reclamation's research and findings and in October the final report was made available online.

In conducting the technical review, Reclamation examiners adhered to the areas of review that were delineated in the work authorization between the two agencies. Reclamation defined the

scope of that authorization to include a review of the history of mining operations and remediation activities in and around the Gold King Mine; site conditions prior to and after the incident; the activities that led up to the incident; the remediation work plan; and industry standards and practices for abandoned mine remediation.

As discussed in the report of its technical review, Reclamation concluded that the uncontrolled release at Gold King Mine was due to a series of events spanning several decades. Groundwater conditions in the upper reaches of Cement Creek have been significantly altered by the establishment of extensive underground mine workings, the extension of the American Tunnel to the Sunnyside Mine, and the subsequent plugging of the American Tunnel. The final events leading to the blowout and uncontrolled release of water occurred due to a combination of an inadequately designed closure of the mine portal in 2009 combined with a misinterpretation of the groundwater conditions when reopening the mine portal in 2014 and 2015.

The report also made broader findings, including that the conditions and actions that led to the incident are not isolated or unique, but are quite prevalent. As specifically noted in the report:

> The standards of practice for reopening and remediating flooded inactive and abandoned mines are inconsistent from one agency to another. There are various guidelines for this type of work but there is little in actual written requirements that government agencies are required to follow when reopening an abandoned mine.

In effect, this incident highlights a significant and costly problem, nationwide. Abandoned mines pose a serious threat on private lands, on state lands, and on lands managed by the Department and there is little standardized guidance, standards, or resources to address it.

Abandoned Mine Lands

The issue of abandoned mine lands on federal lands was last highlighted by the Department in its Statement for the Record submitted for the Committee's September 17 joint hearing with the Oversight and Government Reform Committee on the incident. This is not a new problem, but instead one that governments at the state and federal level have been grappling with for long time.

On Public Lands

In total, the Department manages over 500 million acres of land, together with associated waterways and plant and animal species. Given the amount of land managed by the Department, addressing hazards created by abandoned mines on federal lands is an important objective. The significant concentration of known abandoned hardrock mines and related features on lands under the Department's jurisdiction occur primarily on BLM and NPS-managed lands and are associated with both public safety hazards and human health, environmental, and natural resource impacts resulting from exposure to heavy metals released from mines and present in mine and mill tailings.

Over the last 150 years, much of the public land managed by the BLM has experienced some form of hardrock mining activity, which has ranged from exploration to full development. In many cases, this activity has resulted in disturbed and sometimes contaminated land across parts of the West. Mining activities conducted prior to January 1, 1981, the effective date of the BLM's Surface Management regulations, were often not properly reclaimed, and in many cases no financially responsible party exists to help pay for the cleanup. The BLM's abandoned mine land program, which is aimed at enhancing public safety and improving water quality by reducing or eliminating the effects of past hardrock mining, has identified over 50,000 AML sites on BLM administered public lands.

Each year an average of 5,400 new AML sites are discovered on public lands, with many millions of acres of BLM lands remaining to be inventoried. The BLM continues to develop new processes to more effectively inventory priority AML sites on the nearly 250 million acres of surface estate and 700 million acres of mineral estate that it manages. This inventory work focuses on high-priority areas, as established by physical safety, human health, and environmental risk criteria. Over the last six years the BLM has mitigated physical safety issues at 6,321 AML sites, restored the water quality on 8,435 acres of BLM managed land, and conducted monitoring on 5,138 AML sites.

The BLM prioritizes abandoned mine reclamation work based on public safety, human health, and environmental risk. The highest priority is given to mines that present the greatest safety risk to the public, such as those located closest to population centers, schools, or recreation areas,

and those with the greatest potential environmental concern. Criteria for the ranking of environmental sites includes human presence, threat to the environment, relative toxicity of contaminants, impacted media and location of the site relative to surface water and/or groundwater, aquifer characteristics, and soil or sediment characteristics.

In Colorado, the BLM has prioritized site reclamation in the Gold King Mine area and is coordinating with the local community and other agencies to develop a comprehensive solution for the large number of abandoned mine sites in the area, which are both on federal and nonfederal lands.

AML sites are also present on NPS lands throughout the country. The NPS began to collect data on AML sites on park lands in 1983, and in September 2014 completed the first comprehensive inventory and assessment of AML sites in the park system. Extraction activities left behind 37,050 AML features in 133 units of the park system. The vast majority – 81% – of features are located in the NPS Pacific West Region, especially in Death Valley National Park, Mojave National Preserve, and Lake Mead National Recreation Area. However, AML features are distributed throughout the park system and are a significant management issue in all regions.

The majority of AML features on NPS lands – 31,437, or almost 85% – do not require remedial action either because they do not constitute a threat to human health and safety or generally do not pose a natural resource problem. Almost 1,800 features on NPS lands (about 5%) have already been remediated. However, over 3,800 of these features (over 10%) in 76 park units do require remedial action to mitigate public safety threats and natural resource impacts. The NPS's 2016 budget request includes $5 million in Line Item Construction funding to initiate AML remediation efforts; however, NPS is continuing efforts to fund a comprehensive program that will fully and efficiently mitigate safety hazards and resource impacts at AML sites through the national park system.

According to the NPS, the principal cause of death at AML sites nationwide is drowning in water-filled quarries and pits. Other risks include vertical drop-offs; unstable structures and rock falls; deep and unstable pit walls; deadly gases and radioactive air; abandoned explosives; hazardous chemicals; and high concentrations of contaminants inherent to the mineral deposit.

Mine contaminant releases can affect natural resources such as air, soil, and water quality as well as plant and animal health.

The responsibility to reclaim dangerous AML sites is resource intensive and requires cooperation with local, state, and federal partners. Even dangerous mines that have been properly sealed off are sometimes vandalized, entered, and left open. AML sites are also prone to erosion and de-stabilization of natural topography due to the interruption of natural drainages by mining-related excavation and tailing and waste rock placement. Impacts to scenic qualities of natural areas also occur at AML sites. There are also other factors that merit management attention in AML site assessment and treatment, including the historic value of mines, some of which are listed in the National Register of Historic Places, and the wildlife habitat value of AML sites for species such as bats.

With this in mind, the goal of programs addressing AML issues in the Department is to work to remediate the physical safety hazards, such as shafts, adits, and entrances, and environmental threats associated with hardrock abandoned mine sites.

U.S. Geological Survey's Work

At a recent hearing before the Energy and Mineral Resources Subcommittee, the USGS testified about its role, since the early 1990s, in providing impartial earth and biological science input to the EPA and other agencies on Superfund sites and smaller sites appropriate for Good Samaritan cleanup and other work associated with abandoned mine lands. Related to this issue, it has worked with stakeholders to develop detailed watershed-based AML assessment methodologies in Colorado's Animas River and Montana's Boulder Creek.

The USGS has indicated that a continuing challenge to this process is accurately estimating the scope of the AML problem across the United States and the likelihood for individual mining sites to cause potential environmental contamination. The USGS is developing an enhanced geospatial database of the mines and mineral deposits of the United States known as USMIN, which will capture the locations and areal extent of mine features from current and historical USGS topographic maps and satellite imagery. When enhanced by the integration of information from other national databases on geology, mineral resources, hydrology, water

quality, soil quality, remote sensing, ecology, and climate, the result should help us better understand the national scope of AML issues and impacts.

The USGS has also developed methods to help reconstruct pre-mining environmental conditions in these watersheds, because it is neither cost effective nor technically feasible to remediate to environmental conditions cleaner than were present naturally prior to mining. Other work includes —

- Interdisciplinary methods to help prioritize which of many AML contamination sources in a watershed could be cleaned up to have the biggest positive impacts;
- Linked water quality sampling and flow measurements that have helped pinpoint locations and amounts of specific contaminant influxes into watershed streams;
- Field- and lab-based ecotoxicological measurements to help assess the impacts of AML contamination on food webs and aquatic insect populations. Potential human health concerns can be inferred based on the toxic metals and minerals geologically likely to be present in mine wastes, soils, and dusts;
- Computer-based models that help predict impacts that remediation of specific sites would have on downstream water quality and aquatic ecosystems, allowing more effective cleanup decisions. The economic and societal value of ecosystem services can be evaluated in AML watersheds, and extraction of valuable or useful metals in mine waste materials may help offset cleanup costs at some sites.

Addressing Priorities

Due to the abandoned nature of these sites, the public is often left with the bill for remediation of legacy abandoned mines, rather than the companies and individuals who originally developed the resources. The Administration has continued to request funds to address this significant problem; the Department prioritizes these activities and addresses those priorities within available resources.

AML sites that are identified by the bureaus as posing significant potential human health and environmental risks from exposure to toxic metals are addressed using the response authorities established by the Comprehensive Environmental Response, Compensation, and Liability Act,

which have been delegated to the Department by Executive Order. Funding for the investigation and cleanup of the Department's highest priority CERCLA AML sites is often provided from the Department's "Central Hazardous Materials Fund," a Department-wide account that provides funding to land-managing bureaus for CERCLA response actions, which receives an annual congressional appropriation of approximately $10 million. The Department uses these funds only for AML sites where the bureau has completed a CERCLA Preliminary Assessment and Site Inspection and where the responsible bureau is undertaking additional response actions using the Department's CERCLA authorities.

While there are a number of challenges to addressing AML sites on public lands, there is both a necessity and a desire to address those identified priority sites.

Since 2012, the Administration has included in its budget requests a legislative proposal intended to address the legacy of abandoned hardrock mines. The Administration's proposal would hold the hardrock mining industry responsible for the remediation of abandoned hardrock mines.

The proposal would levy an AML reclamation fee on uranium and metallic mines on both public and private lands, which would be assessed on the volume of material displaced after January 1, 2016. The receipts would be split between federal and non-federal lands, and the Secretary would disperse the share of non-federal funds to each state and tribe based on need. States and tribes would select their own priority projects using established national criteria.

The proposed hardrock AML reclamation fee and reclamation program would operate in parallel with the existing coal AML reclamation program as part of a larger effort to ensure that the most dangerous abandoned coal and hardrock AML sites are addressed by the responsible industries. With the number of identified sites increasing as inventories are improved, we recognize that there is a very large unmet need to address this problem.

Conclusion

It is unfortunate that the catalyst to address a problem is often an incident like this. The Department stands ready to work with the Committee and Congress to address the issue in a meaningful way. Thank you and I am happy to response to any questions that you might have.