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Before the
United States House Committee
on Science, Space & Technology

Hearing on
Chemical Spill at the Gold King Mine in Colorado

Wednesday, September 9, 2015

Introduction

Yá'át'ééh (hello) Chairman Smith, Ranking Member Johnson, and Members of the Committee, my name is Dr. Donald Benn. I am the Executive Director of the Navajo Nation Environmental Protection Agency (NNEPA). The NNEPA is the Navajo entity charged with regulating, monitoring and enforcing performance with appropriate environmental standards throughout all of the Navajo Nation, including the exercise of our authority to limit or eliminate environmental contaminants emitted outside our current reservation boundaries into the Navajo Nation. We have separate and unique environmental standards that sometimes differ from federal standards and we have staff to perform much of our testing. My team has been on the ground monitoring the situation and taking samples of water and sediment since we were first notified of the spill. I am a chemist by trade. Thank you for this opportunity to testify before your Committee on the spill from the Gold King Mine in Colorado.

Our request of the Committee, Congress and the broader federal government is simple, that the USEPA and other parties responsible for the spill and response make us whole. Specifically, we request:

- Resources to address the immediate emergency;
- Resources to study and address the long-term environmental and health impacts of the spill;
- FEMA coordination;
- A critical, independent examination of the existing USEPA (defined below) organization with respect to coordination with the Navajo Nation, with serious consideration given to the creation of a Navajo USEPA Region or devolution of USEPA authority and funding directly to Navajo Nation's own Environmental Protection Agency to assume USEPA's responsibilities for the Navajo people; and
- A fair and independent assessment of the role USEPA played in the events leading up to the chemical spill from the Gold King Mine.

USEPA's Spill of Toxic Substances into a Key Water Supply for the Nation

On Wednesday August 5, 2015, the United States Environmental Protection Agency (USEPA), among others, caused a massive release of mustard-colored contaminants from the Gold King Mine (Mine) into Cement Creek. The toxic sludge—which includes contaminants such as aluminum, lead, zinc, arsenic, cadmium, manganese, iron, vanadium, and copper—flowed south from the Cement Creek into the Animas River, and eventually flowed into the San Juan River (River), a major surface water source for the Navajo Nation. The San Juan River flows through 215 miles of the Nation's territory, and provides much of the Nation's northern border. Eventually the San Juan spills into Lake Powell, which borders the Navajo Nation for an additional 65 miles south. We estimate it is 380 miles from the spill origin to Lake Powell. Counting Lake Powell, the Nation borders a total of 280 miles along the impacted River. The significant extent of exposure of spill contaminants to the Navajo Nation is compounded by the fact that much of this portion of the River is slower moving than upstream.

Upon learning of the incident the morning of Friday, August 7, the Nation's executive leadership team began an immediate response by placing the public on notice of a precautionary closure of the San Juan River to all uses. The Navajo Nation Division of Public Safety established an Incident Command Center, and the Nation's executive team monitored the movement of the plume of toxic sludge towards the Nation's waters. The afternoon of Friday, August 7, the Nation's executive team joined USEPA Region 8 officials for an update call, along with leadership from the other affected downstream jurisdictions. It was then that the Nation learned from USEPA Region 8 officials that we would be dealing with the effects of the spill "for decades" due to the nature of heavy metal contamination and its long-term health effects.[1]

It is estimated by USEPA that the toxic sludge reached the waters of the Navajo Nation on August 8, 2015. That same day the Nation learned that USEPA had miscalculated the volume of the spill. Rather than a 1 million gallon release, we were dealing with a 3 million gallon release. The chemical spill from the Gold King Mine continues to flow at a rate of 610 gallons per minute, as measured by the U.S. Geological Survey (USGS).[2] It is our understanding that the spill from the Mine remains ongoing. While there are treatment pools in place, we visually observed that the pools do not slow the aggregate flow of water from the point source. Using USEPA's more conservative estimate of 550 gallons per minute being released from the mine (provided at a public meeting at Nenahnezad Chapter House on August 15), and multiplying that by the number of minutes that have passed since the initial 3 million gallon release on August 5, we extrapolate that the total aggregate release is now well in excess of 20 million gallons.

Despite being assured by the USEPA on Friday, August 7 that "the water in Cement Creek and the Animas River near Silverton is clearing," I joined the Navajo Nation President Vice-President to view the Gold King Mine site of release in person.[3] We sought to coordinate our visit with USEPA Region 9, which covers the Navajo Nation in agreement with Region 6 (which

also straddles the Navajo Nation). Region 9 staff first indicated they would only take us to the confluence of Cement Creek with the Animas River in Silverton, Colorado, despite our request to visit the point of release. As we approached, we observed that the Animas River remained surprisingly orange. Upstream we observed that the river was a bright, opaque orange, that the river sediment was bright orange, and that rocks in the riverbed were stained bright orange.

After being rebuffed several times we were able to convince them to allow us to walk up to the mine adit. What we observed at the mouth of the adit was an unimpeded flow of what we later learned was 550 gallons per minute spilling freely and rapidly over the top of the one on-site treatment pond and cascading into the Cement Creek watershed. That rate of flow is now measured by USGS to be 610 gallons per minute. The water was an unusually bright, opaque orange, and the sediment at the mouth of the adit was an incredibly fine consistency. The contaminants flowing from the mine did not appear to be "clearing" as reported by USEPA on Friday. Based on reactions by our Region 9 tour guide, this appeared to be the first time USEPA Region 9 staff visited the point of release.

Shortly thereafter the USEPA began taking more aggressive response actions. On August 10 USEPA staff attended public meetings at Aneth Chapter and Oljato Chapter, provided information about the spill, and handed out Standard Form 95 to facilitate the filing of Federal Tort Claims Act (FTCA) claims for damages. On August 11 the USEPA finally apologized for their role in the release, and pledged to take responsibility for injuries caused by the release.[4] On August 12 the USEPA and the U.S. Bureau of Indian Affairs (BIA) deployed water tankers to affected Navajo communities. On August 13 USEPA Administrator Regina McCarthy came to the Navajo Nation to discuss the incident with Navajo leadership.

Immediately after the release, and in our subsequent conversations with USEPA, we have asked them for a full spectrum analysis of the contaminants being released from the Mine. To our knowledge, USEPA has never done this. Instead they tested for a limited list of contaminants, including iron, aluminum, calcium, magnesium, potassium, lead, manganese, zinc, copper, sodium, barium, arsenic, vanadium, molybdenum, silver, chromium, cobalt, antimony, nickel, mercury, cadmium, and beryllium. Their reasoning for testing for these limited contaminants is unclear. USEPA started daily sampling for these contaminants around August 8, 2015, at 11 locations within the Navajo Nation. As of last week, they dropped the sampling to 5 locations, twice per week. We are uncertain where they will be taking these samples. What we have experienced thus far is a USEPA focus on water upstream of the Navajo Nation. We hope USEPA will take our water quality into consideration as they undertake long-term monitoring.

When the plume of toxic sludge was released from the Gold King Mine, USEPA initially chose iron as its marker to track the movement of the sludge. The orange-mustard color of iron allowed easy visual aspect tracking, but USEPA lost the plume shortly after it entered Navajo waters in Nenahnezad because the plume lost its distinguishable color. USEPA then had to choose a

different marker, so it chose aluminum. It is not clear why USEPA chose aluminum, which is an unpredictable element. The Navajo Nation chose lead to track the plume. Lead is a predictable element that is consistent throughout the River. We thus believe it is a good marker to identify the presence of the plume released from Gold King Mine, which we suspect is now lying at the bottom of our River.

The settling of heavy metals to the riverbed gives the illusion that contaminant levels have decreased, but settled heavy metal contaminants can be disturbed and entered back into solution after a storm or increased water flow event. Thus these events can once again increase the level of heavy metal contaminants in our River water. We observed this in the August 12 storm event, where USEPA data reflected water quality exceedances in the hours and days after the storm event. Indeed, that event allowed us to observe the presence of dissolved aluminum at levels higher than we have ever seen in the River, even during the usual storm event spikes. Our hypothesis based on this observation is that other contaminants like lead, mercury, beryllium, and chromium are also higher than usual, and that the release from the Gold King Mine has forever changed the concentrations of chemicals in the San Juan River. This requires additional study for which we need funding. This unknown is an additional basis for our reluctance to open our waters to all uses. We need to understand this new River. As part of that, we will seek to add a water quality standard for mercury. We are concerned that USEPA, which has to approve our water quality standards, may not approve the development of such a standard.

Surrounding jurisdictions have reopened the River to all uses, including livestock use and drinking water use, but those jurisdictions review a narrower list of contaminants than the Navajo Nation does when assessing the quality of its water. Our considerations are broader and different, and so our decision to open the water to various uses will be made independently once our standards are met and once we have sufficient comfort with respect to yet unknown risks of using the water. Navajo has two public irrigation canal points on the San Juan River that provide water for farmers. The Navajo Nation has opened one of those canal points for the limited use of irrigation (and not animal or human consumption), but the other canal remains closed due to the lack of trust local farmers have of USEPA and its data. With USEPA as the cause of this event, many farmers have lost their trust in the USEPA and in statements they make. The Navajo Environmental Protection Agency will continue to monitor River data derived from our own samples and USEPA's samples in order to make a determination as to whether the water is usable beyond limited irrigation. Plants and animals metabolize heavy metals differently, and we simply do not know enough about those processes to know the level of exposure we are subjecting ourselves to by irrigating our crops with water that carries both dissolved and undissolved heavy metals. Water sampling only detects the presence of dissolved metals, whereas we understand that the San Juan River carried a significant sediment load even before its sediments were contaminated by the Gold King Mine spill. We have sought assistance from USEPA in taking water and sediment samples ourselves, but they have wanted to first know the

full details of our methodologies and approach. In order to ensure fair and full analysis to capture the full scope of impact, we have taken measures ourselves to fund our own sampling program, but we need help continuing those efforts over the long term. Indeed, our sediment sampling activities are completely new, and thus are currently unfunded except through the generosity of our Tribal Council and private donors.

USEPA's Creation of a Culture of Distrust

The NNEPA works in close partnership with USEPA to facilitate the Nation's twelve environmental programs, which are largely if not completely funded by the USEPA. NNEPA has assumed Treatment as a State (TAS) authority under various sections of the Safe Drinking Water Act and the Clean Water Act, as well as primacy for various water regulatory authorities in 1995. In my role as NNEPA Executive Director, I oversee a staff of about 80 employees. A good and close working relationship with USEPA has always been critical to the success of the NNEPA. However, recent events relating to this spill have led to a complete shift in that relationship as USEPA has sought to quiet our legitimate concerns, and has made repeated missteps in their response efforts relating to the incident triggered by their own actions. From day one, USEPA has assumed a posture of mitigating losses even while taking the lead on the incident investigation and emergency response. We have grave concerns about the strong conflict of interest USEPA has with respect to this investigation and the emergency response. No other environmental bad actor would be given this same amount of leeway to investigate itself and determine to what extent it will be held accountable. We are encouraged that USEPA's Office of Inspector General will be reviewing this incident, but we believe another agency should be made lead on the response, and an independent body should conduct the investigation of the incident.

To the issue of distrust, our first point of concern with USEPA is with its delay in notifying the Nation of the spill. The spill occurred the morning of August 5, 2015, but the Navajo Nation was not informed of the release until August 6, a full day later, and the Nation was informed of the release not by the USEPA, but by the State of New Mexico's Technical, Construction and Operations Branch. The USEPA did not seek to notify the Navajo Nation of the release for almost two full days. This is a completely unacceptable delay in notifying a downstream jurisdiction. The Nation's waterways compose at least two-thirds of the area of river contaminant exposure, and this does not include the additional 65 miles of exposure we have along the shores of Lake Powell.

Our second point of concern is with the lack of transparency that USEPA provided with respect to the scope and nature of contaminants spilled. Our initial warning from USEPA was of an "acid mine drainage spill in the Animas River north of Durango" of "[a]pproximately 1 [million] gallons."[5] USEPA's initial fixation appeared to be with pH levels, and at around midnight on Friday, August 7 USEPA reported that contaminated releases were at a pH of approximately 4.8, and provided the pH of black coffee (4.5) as a point of reference.[6] This served to downplay the

magnitude of risk to human and animal health, and later reports by USEPA of released contaminants were incomplete. Indeed, the media was receiving faster and fuller information from USEPA than the Nation and other affected jurisdictions. For example, the New York Times reported the spill hours before USEPA provided the Nation with notice of the spill, and media sources reported USEPA confirmation of the presence of arsenic in the contaminants release from the mine on Friday, August 7 whereas USEPA still had not reported the presence of arsenic to the Nation by Sunday, August 9. Additionally, the graphs USEPA provided on Friday showing the presence of lead provided a misleading flat line depiction, suggesting lead levels did not change with the release. However, with the low baseline average concentration of lead in the river at 14.71 units for Cement Creek above Silverton, for example, and the first increment of measurement on the graph of 2000 units, the concentration of lead could quadruple or sextuple, and the graph provided by USEPA would not visually reflect this spike.

USEPA's subsequent actions further generated distrust and concern by the Nation due to a continued lack of transparency and forthrightness. For example, USEPA complained about treatment by a Shiprock Farm Board Member, whom their staff found threatening, but who we later discovered was trying to prevent the use of oil contaminated water on fields. To our great consternation, the President and Attorney General later indeed found petroleum residue on and inside the tank provided by USEPA and identified as contaminated by the Farm Board Member. This discovery came within days of the President and Attorney General receiving in-person and telephonic assurances from a USEPA on-scene representative that the tanks provided by USEPA were steam cleaned and filled with potable water from a municipal water source that does not draw from the San Juan River. Rather than investigating the complaint raised by the Farm Board Member (one of our elected tribal officials) USEPA responded by immediately withdrawing all of its staff and resources, including all sampling activities along the River, from the community the Farm Board Member represents. That community happened to be Shiprock, the most populous Navajo community along the San Juan River, and also the community with the greatest need for assistance from the USEPA in the face of the contamination of the River.

Additionally, within days of the President announcing that the Nation would be suing USEPA, they had staff on-site handing out Standard Form 95 and encouraging members of the Navajo Nation to fill out the forms to expedite settlement of their claims for damage, injury, or death pursuant to the FTCA. The Attorney General reviewed the form and identified plain and clear language on the form attesting that individuals submitting the forms would be filing the forms in pursuit of "FULL SATISFACTION AND FINAL SETTLEMENT" of their claims for damages and injuries that yet remain unknown. USEPA was embarrassed by the backlash in response to their handing out of the forms and has sought to tamp this down by explaining that people who submit the form are simply starting a process for settling their claim, and USEPA provided assurances that claimants can amend their claims later. They additionally pointed out that people have two years to file their claims. However, I have been informed by the Attorney General that

this opportunity to amend a claim or to file a claim within two years of the incident does not change the fact that once a claimant cashes a check received in final settlement of a claim submitted via Standard Form 95, that individual will be putting him or herself in the position of being unable to file for additional compensation for damages and injuries arising from the Gold King Mine release because the claimant will have fully and finally settled their claim with USEPA. There does not appear to be a way for individuals to amend an FTCA claim once final settlement is reached, and that is a significant concern because of the anticipated long-term effects and attendant damages and injuries that may come from long-term heavy metal contaminant exposure to our people.

This is a vexing situation for our people because the economics of farming makes the timely cashing out of harvests time-urgent. Our farming families were expecting to sell their harvests along a relatively predictable timeline that was disrupted by the closing of the San Juan River to irrigation use. They relied on the predictability of this timeline to defer bills and expenses until harvest time, and now that time is passing and many of them need their anticipated harvest returns immediately to catch up on bills and buy school clothes, for example. Yet if they fill out Standard Form 95 and, assuming USEPA takes less than the six months they are allowed to process claims, they receive a settlement check quickly, they likely will not defer cashing that check while they wait for additional damages or injuries to accrue. Our President, Vice-President, and Attorney General have thus asked USEPA for an interim claims process that will allow for ongoing claims filings, and our Attorney General has asked for a U.S. Attorney General opinion confirming that the filing of Standard Form 95 and the settling of a claim filed under that form or process does not in fact fully satisfy and settle the claim as the plain language of the form and the FTCA itself indicates, but none of this has been forthcoming.

USEPA's failed response is also blocking other federal actors from assisting us in our time of great need in responding to the chemical spill from Gold King Mine. The Navajo Nation contacted the Federal Emergency Management Agency (FEMA) as a direct result of our declaration of emergency, but also because of our lack of confidence in the USEPA. However, two weeks ago a confirmed coordination call with FEMA was cancelled by the Agency. The stated reason for the cancellation was that USEPA was the lead federal agency for the response. Adding insult to injury, on Friday, September 4, FEMA denied the Nation's formal request for a Federal Disaster Recovery Coordinator. Given USEPA's blundering of the response effort, the Nation has a more than adequate basis for requesting that FEMA take over as lead responding agency. Meanwhile, it is our understanding that the BIA, which provided critical response assistance to the Nation, is withdrawing its support in part due to USEPA's resistance in reimbursing BIA for its efforts.

These many instances of failure by USEPA in responding to this incident in an honest and forthright manner suggestive of true regret for the occurrence of the incident and a basic ethic of taking responsibility for one's actions has led to a culture of distrust on Navajo Nation with

respect to USEPA, both among our farmers and our leadership. Yet the NNEPA continues to have the trust of our farmers and our leadership, and our farmers are seeking honest data assessments and technical answers from us. We can and will do this better than what we've observed by USEPA, and we care deeply about protecting the health and welfare of our people. I thus ask that you provide NNEPA with the local authority and resources to do the work that USEPA would otherwise do to assess the injury, study mitigation options, and undertake mitigation efforts with respect to the Gold King Mine chemical spill. This is done in other tribal program contexts like Indian Health Services where local tribal entities assume federal authority through 638 contracts. Alternatively, the NNEPA would be pleased to have our region recognized separately from Region 9 and Region 6. The carving up of our Nation into multiple USEPA regions stymies our ability to generate quick responses and solutions in the face of an environmental emergency, as here. We are already expanding our scope of work into the realm of sediment testing, but we do need additional funding to facilitate that work, and to provide our farmers and our leaders with the answers they deserve, and with answers they can trust.

Continued and Urgent Threat of Point Source

Further contributing to the culture of distrust towards USEPA is the fact that USEPA knew of the threats posed by the Gold King Mine and its surrounding mines for quite some time, yet it failed to take measures to protect those of us downstream. Even worse, in the wake of this incident and the horrible impacts it has visited upon the Navajo Nation, USEPA's words and actions suggest that they do not believe or acknowledge that the Gold King Mine and its surrounding mines are a legitimate threat to the Nation. But we are living through the very present and tangible reality of that threat, and the bookend on our scope of injury is not in sight. As USEPA stated early on, we will be dealing with the effects of USEPA's Gold King Mine chemical spill "for decades." Meanwhile, Gold King Mine is just one of over 300 abandoned hardrock mines in the heavily contaminated 140-mile-area known as the Upper Animas Mining District (District).[7] The District includes private, federal, and state lands, and the town of Silverton.[8] Gold King Mine was twice considered for inclusion on the National Priorities List (NPL), both as part of the District, and as a narrower carve-out from the District, and the recent spill was preceded by two devastating spills in the 1970s.

The Mine's first Superfund site assessment was conducted in the 1990s, and the assessment concluded, "that water quality standards were not achieved" in the District.[9] The assessment also identified "severe impacts [of the District] to aquatic life in the Upper Animas and its tributaries."[10] Despite the serious harm being caused by the District, USEPA postponed listing the District on the NPL in order to allow a "community-based collaborative effort" to clean up and mitigate harm from the District "as long as progress was being made to improve the water quality of the Animas River."[11]

Yet in 2005, the "water quality ha[d] declined significantly" in the area, and so in 2008, USEPA performed another NPL assessment, this time on the Upper Cement Creek alone.[12] The study again confirmed, "that the area would qualify for inclusion" on the NPL.[13] Despite the additional confirmation that the Mine area should be listed on the NPL, "EPA postponed efforts to include the area on the National Priorities List," again "after receiving additional community input."[14] USEPA's repeated denial of the facts with respect to the level of harm posed by the Gold King Mine and its surrounding mines has placed downstream jurisdictions such as the Nation at undue risk. This further contributes to a lack of trust of USEPA to protect the health and well-being of Navajo people and the Navajo Nation from environmental threats. If the local community wishes to avoid Superfund listing for the site, the threat of the site should be confined to their own backyards, and what is sent downstream to the Nation and its neighbors should be made safe.

The threat of a spill from the District will remain under the existing management scheme. There were two previous releases of hazardous mine waste from the area in 1975 and 1978. In 1975, "50,000 tons of heavy-metal-loaded tailings" were dumped into the Animas River.[15] And in 1978, "500 million gallons" of water contaminated with "tailings and sludge" spilled into the Animas River.[16] The damage caused by the Upper Animas Mining District has gone on far too long. The chemicals found in the District pose significant human health risk as they contain known carcinogens and elements that can affect major organ systems such as cardiovascular, respiratory, gastrointestinal and reproductive systems. To provide a sense of magnitude of exposure, one report of EPA data indicated that lead was found near the Cement Creek/Animas River confluence "at more than 200 times higher than the acute exposure limit for aquatic life, and 3,580 times higher than federal standards for human drinking water" and arsenic was found "more than 24 times the exposure limit for fish and 823 times the level for human ingestion."[17]

The waste from the mines in the Upper Animas Mining District is also harmful to wildlife. An April USEPA risk assessment found that "[m]etals concentrations in the Animas River below Mineral Creek have eliminated virtually all fish down to Elk Creek and all cutthroat and rainbow trout down to Cascade Creek, where only a small community of brook and brown trout exist," and "that the benthic invertebrate community is impaired in most sections of the Animas River, Cement Creek and Mineral Creek."[18] The District is making portions of the Animas River uninhabitable for certain wildlife. Negative implications for other wildlife in the food chain are even broader.

Meanwhile, based on our extrapolation of known data, over 20 million gallons of aggregate contaminated flow has spilled from the Mine since August 5. If the District does not become a Superfund site, contaminants will continue to pour freely into the Nation's waters, the concentration of contaminants in our waters will increase, and the duration of exposure for our people will extend even further into the future. Metals poison people slowly, and sediments eventually make their way downstream. We are thus gravely concerned that the metals coming from Gold King Mine and the District are making their way down to us, and will settle in our

slow waters. We are also concerned that efforts to flush contaminants out of the Farmington area flushed contaminated sediments into our territory, and that those contaminants will remain here for a long time. We do not want our people to be poisoned by the heavy metals that have arrived or that will arrive in our waters from the District, and so we urge you to do what you can to help us secure NPL listing for the District.

What's at Stake: The San Juan River Basin before the USEPA Spill

The San Juan River Basin is perhaps the Navajo Nation's the richest agricultural region across our large reservation. When our leaders negotiated our release from internment by the federal government at Fort Sumner in the Treaty of 1868, they were certain to include the San Juan River and its adjacent rich farmlands within our Nation's boundary. The reliance of our people on the River and the significance of the River to our people cannot be overstated. The San Juan River Basin is a bastion for ancient Navajo seed strains that our people have carefully refined and designed to thrive in our arid region since time immemorial. We grow four types of corn, each used for a specific purpose in our ceremonies, and those seeds are protected by the strong culture of farming that has persisted in the San Juan River Basin. Navajo cornhusks are mixed with tobacco to create ceremonial smoke, and our corn pollen is used as an essential element in all Navajo ceremonies. One of our corn seed strains is utilized in our critical *kinaalda* ceremonies (the coming of age ceremonies for our women). We also grow an array of heirloom fruits and vegetables that our people eagerly anticipate selling and purchasing during our popular fair season each fall. Those fruits and vegetables are shared over family tables, and are a part of the cultural glue that keeps our families and way of life intact. Families travel for hours across the Nation to the San Juan River Basin to access these ingredients for our ceremonies and celebrations.

The Navajo Nation as a whole is a largely agricultural society. Our territory spans over 27,000 square miles, and is larger than 10 U.S. states. Much of the Nation is rural, and our people have traditionally farmed and ranched, since pre-contact and beyond. Our colonial neighbors knew us for our agricultural bounty. Farm culture on the Nation remains strong today. According to the U.S. Department of Agriculture's 2012 Census of Agriculture, the Nation has 14,456 farms on our land, over 99 percent of which are operated by our own people.[19] According to our Department of Agriculture, there are approximately 1,500 farms in the Shiprock Agency alone. The community of Shiprock, which straddles the banks of the San Juan River, is the largest population center for the Nation.[20] The average size of our farms is 1,174 acres.[21] Most of our farms grow traditional corn, hay, squash, and watermelons.[22] The average market value of our farm products is $5,087 per farm, but we have 26 farms that produce $100,000 or more in annual sales.[23] The overwhelming majority of our farms are family or individual owned.[24] Many of our farming families live adjacent to their farmlands. Roughly three-quarters of our farmers list farming as their primary occupation, and almost half of our farm operators indicate that they

spent no days working off their farm.[25] This demonstrates how vulnerable our farmers' livelihoods are to the whims of the produce and hay markets, and to weather and water conditions. Most of our farmers are long-time farmers who have been working on their farms for 10 years or more.[26] Simply put, farming is and always has been a way of life for our people.

We also have a great number of cattle and sheep ranchers. Specifically, we have 5,767 cattle ranch operations and 9,328 sheep ranch operations on the Nation.[27] The BIA estimates that we have 1,175 grazing permit holders in the San Juan River area, some of which likely run both cattle and sheep ranching operations as is customary among Navajos ranching families. With sheep as our national cuisine and rodeo as our unofficial national sport, farming and ranching are deeply embedded in our culture, and indeed are the backbone of both our culture and economy.[28]

Successful farming and ranching operations are reliant on rain, particularly in our arid region where there is very little water distribution infrastructure in place. Our farmers rely heavily on the San Juan River and ditch irrigation practices to keep their fields hydrated and their crops growing and yielding at a high rate. The Nation has faced a long-standing drought, but this summer we experienced heavy rainfall. Indeed, this summer was the first time since the drought began that our rainfall reached pre-drought levels. There was a sense of hope and joy among our people as we saw our land turn green once again and saw our crops and livestock respond with increased size and weight. Before the USEPA spill, there was tremendous hope that this harvest season could bring about strong financial returns. Further boosting expectations was the continued rise in cattle prices.

Adverse Impacts Borne by the Navajo People

The Navajo Nation's impacts are felt most in the disruption of our cultural principle of *hozho*, which encompasses beauty, order, and harmony, and expresses the idea of striving to maintain balance in the Navajo universe. The impairment of the River and the adverse impacts to our farmers and ranchers, and our community as a whole, will mark a moment of community trauma that will be remembered for years to come. This modernized trauma will compound our already significant historical trauma.

We are concerned about the mental health impact the spill is having in the short term and will have in the long term. Our Department of Health has identified that we are experiencing grief and loss at both an individual and community level due to the trauma of the spill. It is not known how long our people will remain in the various stages of trauma. We are saddened as a community to see our Navajo elders cry and to see the food security of our people disrupted. Our farming families in particular have lost a significant portion of a full growing season's worth of work, and during a season where there were joyful expectations for the first time in a long time of a bountiful harvest. Now these families have to look at their dead and dying crops each day, and are constantly reminded of the loss of their sweat and hard work.

The lack of a swift and adequate response from the federal government also makes our people feel like the federal government doesn't care about them or their livelihood. For this community, this response from the federal government is not surprising or new, but is just as crushing now as ever. Relatedly, we have seen frustration in our communities along the River rise, and our Department of Health has even observed a spike in incidents of domestic violence. The crushing stress of this incident, along with the significant unexpected financial loss suffered by our farmers and ranchers, and the sense of powerlessness and hopelessness arising from the failed response has upended our community's balance.

Our farmers and ranchers and our traditional people felt the most immediate impact from the spill. Our farming families consume these farm-raised goods as a matter of subsistence. After the San Juan River—the primary and often singular water supply to our Northern Navajo communities—was closed to use by farmers and livestock owners for irrigation and livestock use, many of our farmers and ranchers had to expend their own funds to haul water to their crops and animals to keep them alive or to keep them from stalling in growth. One family operates a 22-acre farm and was driving 80 miles a day non-stop to supply their fields with water. Despite these efforts, they were only able to save one acre of their crops. They chose to save Navajo corn and melon in order to mitigate cultural and spiritual impacts that will come from the expected broad losses from crop failure in the San Juan River valley due to the Gold King Mine spill.

Though the River has been reluctantly opened for limited irrigation purposes in order to save the crops of those farmers willing to assume the risk of watering their crops with contaminated water laced with heavy metals, the Navajo Nation has not opened the San Juan River for livestock use. In order to keep their livestock from drinking the River water, ranchers have had to reign in their livestock. Those ranchers now have both the expense of hauling water and purchasing hay for their livestock. USEPA is fully pulling out resources to assist our farmers and ranchers with water and hay, but we still sorely need that assistance. If USEPA won't help us, we ask that the funds to deal with this crisis be sent directly to the Navajo Nation. At the very least, USEPA, the party responsible for this situation, should be taken off as the lead responding agency. Their significant conflict of interest puts them in an awkward position of trying to minimize mitigation efforts in order to keep costs down, and incentivizes downplaying the adverse effects caused by the Gold King Mine spill. FEMA would make a much better lead agency, as would the BIA.

Our traditions and culture are kept alive by our San Juan River valley farmers' growing of heirloom Navajo fruits and vegetables, and sharing in traditional harvests during our annual fair season brings our families together. Loss of replacement seeds places our farmers' slowly refined seed strains at risk because local seed banks won't be replenished. The loss of heirloom seed strains will be significant because those seeds are developed to resist the harsh, arid climate of our region. Monocultures of a crop are susceptible to complete extinction if affected by a single event. Once a breed of plants is extinct, those genes are lost forever. Replacement of seeds that

have acclimated to the local climate is more difficult and more expensive than general seed replacement.

In addition to destroying crops critical to our prayers and ceremonies, the contamination of our sacred River has desecrated an important male deity for our people, of which the River stands as a physical embodiment. Its contamination by the spill has been a significant spiritual blow and disruption to the natural order of our society. The San Juan River sustains our culture by watering our many unique species of Navajo corn plants that are critical to our prayers and ceremonies. A lack of supply of these crops raises the price of these items for traditional Navajo families. The Navajo Nation Historic Preservation Department (HPD) has been informed that local Chanters' ceremonies and prayers have been negatively affected by the spill and subsequent contamination of the River, which also affects other cultural resources within the Navajo Nation. HPD has thus expressed extreme concern about the contamination of the River, as it is a Traditional Cultural Property to our people with multiple layers of significance.

Contamination of the River is also a blow to our economy. The Navajo Nation faces a daunting unemployment rate of 42 percent.[29] Yet along the San Juan River, many of our people are able to make a life for themselves and support their families through farming and ranching. Many of our farmers create additional economic value for themselves by carefully growing profitable organic crops, or raising grass-fed and organic beef or mutton product. Their livelihoods have been significantly disrupted by the spill. The promising harvest our people were looking to with hope and joy has been obliterated. Growing cycles and field rotations have been disrupted, and farmers who are used to producing their own farm goods will now need to buy fruits and vegetables for themselves and hay and alfalfa for their livestock in order to replace what was lost. This is impacting even farmers who have been able to salvage their farm goods because there is now a stigma against fruits and vegetables grown along the San Juan River.

Lead, arsenic, mercury, chromium, cadmium and beryllium are contaminants known to be toxic and dangerous to humans, animals and plants, and all of these heavy metals are present in the ongoing chemical spill from the Gold King Mine. The long-term effects of heavy metal poisoning from direct exposure are largely unknown, especially with respect to impacts on plants watered by contaminated water. It is not known if or to what extent human health will be impacted by consumption of farm products irrigated by water contaminated by heavy metals. These same concerns apply to human health effects from eating livestock that consume water contaminated by heavy metals. We hunt and fish these animals to put food on our tables and as part of our traditional cultural practices. As such, effects on wildlife need to be monitored.

Despite many unknowns, we do know that lead poisoning occurs by eating or drinking water or food that contains lead, or ingestion of dust or soil contaminated by lead.[30] Lower level exposure of lead to children over time "may lead to reduced IQ, slow learning, Attention Deficit Hyperactivity Disorder (ADHD), or behavioral issues."[31] Lead also affects the kidneys, heart,

and reproductive system, and developing fetuses are especially sensitive to the effects of lead exposure.[32] The effects of lead poisoning may not be noticed for many years, and lead does not break down over time.[33] We also know that "[a]rsenic cannot be destroyed in the environment"; it can only change its form.[34] High levels of arsenic can result in death.[35] "Exposure to lower levels can cause nausea and vomiting, decreased production of red and white blood cells, abnormal heart rhythm, [and] damage to blood vessels."[36]

There is much to be studied to assess our level of risk and contamination as a society. Even in the face of so many unknowns, what we do know is that our River and our people are forever changed by the chemicals spilled from the Gold King Mine. We want to protect our Navajo citizens, our natural resources, the Navajo way of life, and most importantly our future generations from these unknowns. We hope you will assist us in that effort by helping fund the necessary long-term studies.

Significant Need for Resources

We did not cause this spill, nor did we request that it impact our people, our livestock, our lands and our way of life. At this moment, we simply request assistance from the responsible parties to make us whole and return the beauty and *hozho* to our River and to our people. The responsible parties can assist with immediate concerns as well as address the more long-term impacts. We request Congress's assistance to compel the responsible parties to provide adequate and sufficient long-term remediation. We also request that Congress allocate and direct resources to address both the short-term and long-term impacts of the devastating Gold King Mine spill.

In the short-term emergency response, we request assistance with the continued delivery of water for both livestock and farming. We also request assistance with hay delivery for impacted ranchers. Despite our continuing urgent need for water and hay, beginning Saturday, September 5, USEPA and BIA began withdrawing assistance.

Additionally in the short term it is critical that the USEPA establish a relief fund for individual farmers and ranchers and address the issues of Standard Form 95. Specifically, we have requested an interim claim form or process as opposed to the existing Standard Form 95.

In the near term the Navajo Nation would like to guard itself from future contaminants and be prepared if and when more contaminants arrive from upstream. We thus request assistance for creating redundant and auxiliary water supplies, and reservoirs. We also request true emergency response coordination with FEMA, as opposed to sole reliance upon USEPA as lead federal responding agency.

We will need the resources to conduct our own water and soil sediment monitoring, especially given the level of mistrust with the USEPA. We propose to conduct these duties under the

Navajo Nation, as opposed to relying upon the USEPA. We will require an on-site lab, and additional staffing to manage the sampling and lab performance.

Perhaps most importantly, the long-term health impacts have yet to be quantified, but we believe they could be substantial. We will need assistance monitoring health impacts as well as the resources necessary to fund this monitoring effort. In the event individuals' long-term health is impacted, we will need resources to fund treatment.

Finally we will require assistance to fully clean up the River and return it to the pre-spill state. This will require extensive planning and study prior to implementation.

Conclusion

The inadequate response from the USEPA, FEMA, and the Obama Administration in general is not an unprecedented single event for the Navajo people. Instead, it is yet another instance of our people being less than a priority to the federal government. This experience most vividly calls back memories of our experience with uranium. There too our people were not consulted or compensated for damage caused by mines, and there too we were not warned of the risks related to the threats from the mines. We have had to live with the legacy of yellow dirt, now we face the legacy of yellow water. The federal government needs to handle this contamination very differently, but we are not seeing that happen in USEPA's current actions.

As you can see from our testimony, water is essential and sacred to the Navajo people and the Navajo Nation. The loss of water has the ability to deeply and adversely affect the financial, cultural, emotional and physical condition of the Navajo people. Our people are experiencing mental and emotional anguish from having a trusted water source suddenly and unexpectedly contaminated with strange elements that have changed our River forever. Our people feel uncertain of their health and well-being, as well as that of our future generations. The Navajo Nation does not want this to happen again. With your help, we can prevent this, and provide a safe and secure future for our people—especially those directly affected by this contamination event.

Our request is simple, that the USEPA and other parties responsible for the spill and response make us whole by providing us with resources to address the immediate emergency, resources to address the long-term environmental and health impacts of the spill, FEMA coordination of the response, critical examination of USEPA's organization with respect to the Navajo Nation, and an independent analysis of USEPA's role in causing the spill so that USEPA can be held accountable for its actions in the same manner as any other environmental bad actor.

Ahéhee.' Thank you for your time and attention to this important issue.

End Notes

[1] Telephone Call with Shaun McGrath, Administrator for USEPA Region 8, and Joan Card, Senior Policy Advisor for USEPA Region 8 (Aug. 7, 2015).
[2] http://fox6now.com/2015/08/13/gold-king-mine-owner-i-foresaw-disaster-before-epa-spill-into-animas-river-in-colorado/
[3] E-mail from Harry Allen, Chief, Emergency Response Section, USEPA Region 9, to Russell Begaye, President, Navajo et al (Aug. 7, 2015, 11:58 PT) (on file with NNDOJ).
[4] http://www2.epa.gov/goldkingmine/epa-administrator-gina-mccarthy-8112015-remarks-gold-king-mine.
[5] E-mail from Harry Allen, Chief, Emergency Response Section, USEPA Region 9, to David Taylor, Attorney, Navajo Nation Dept. of Justice (Aug. 6, 2015, 10:58 PT) (on file with NNDOJ).
[6] E-mail from Harry Allen, Chief, Emergency Response Section, USEPA Region 9, to Dr. Donald Benn, Director, NNEPA (Aug. 7, 2015, 11:58 PT) (on file with author), attachment "PHstatement8-7.docx."
[7] http://www2.epa.gov/region8/upper-animas-mining-district
[8] http://www2.epa.gov/region8/upper-animas-mining-district.
[9] http://www2.epa.gov/sites/production/files/2015-08/documents/goldkingminewatershedfactsheetbackground.pdf at 2.
[10] http://www2.epa.gov/sites/production/files/2015-08/documents/goldkingminewatershedfactsheetbackground.pdf at 2.
[11] *Id.*
[12] *Id.*
[13] *Id.*
[14] *Id.*
[15] http://www2.epa.gov/sites/production/files/2015-08/documents/goldkingminewatershedfactsheetbackground.pdf at 1.
[16] *Id.*
[17] http://m.startribune.com/nation/321518301.html
[18] http://www2.epa.gov/sites/production/files/2015-06/documents/upper-animas-bera-fact-sheet-april-2015.pdf at 1
[19] 2012 Census of Agriculture, USDA, National Agricultural Statistics Service, "American Indian Reservations" (Table 1) at 17.
[20] See 2010 population census data on Shiprock from the U.S. Census Bureau at https://drive.google.com/file/d/0B9Ys0__F67YfaS1UOWxUQ1hydm8/view?pli=1 (shows a population of 9,226).
[21] 2012 Census of Agriculture, USDA, National Agricultural Statistics Service, "American Indian Reservations" (Table 1) at 17.
[22] Id. at 95, 121. The Navajo Nation Department of Agriculture reports that the crops in the impacted region include organic Navajo corn, sweet corn, alfalfa, squash (acorn, cushaw, banana, butternut, zucchini, hubbard, spring, crooked neck, and more), potatoes, pinto beans, green beans, peas, tomatoes, cucumbers (including multiple several varieties), several varieties of chili, melons (cantaloupe, honeydew, watermelon, muskmelon, sugar baby, etc.), lettuce, beets, carrots, bell pepper, sunflowers, and fruit trees (apple, peach, apricot), among other things.

[23] 2012 Census of Agriculture, USDA, National Agricultural Statistics Service, "American Indian Reservations" (Table 1) at 43.
[24] Id. at 69 (13,955 of our farms are family or individual owned; 407 of our farms are owned by partnerships, corporations, cooperatives, estates, or trusts, etc.).
[25] Id. at 147 (15,921 of our famers list farming as their primary occupation; 6,948 list "Other" as their primary occupation).
[26] Id. at 147 (18,923 of our farmers have been working on their present farm for 10 years or more; 3,946, or 21 percent, have been working on their farms for less than 10 years).
[27] Id. at 69, 95.
[28] To get a more complete snapshot of impacts to our farmers and ranchers along the San Juan River, the Nation has a 10-day assessment of crop and livestock underway.
[29] http://navajobusiness.com/fastFacts/Overview.htm
[30] http://www.atsdr.cdc.gov/csem/lead/docs/lead_patient-education.pdf at 1.
[31] http://www.atsdr.cdc.gov/csem/lead/docs/lead_patient-education.pdf at 1.
[32] *Id.*
[33] *Id.*
[34] http://www.atsdr.cdc.gov/toxfaqs/tfacts2.pdf at 1.
[35] *Id.*
[36] *Id.*