Document #45 Whiskers, Thelma White Mesa Concerned Community

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White Mesa Concerned Community

P.O. Box 1007, Blanding, Utah 84511

January 26, 2005

Secretary Spencer Abraham
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585

Re: DOE Violation of Executive Orders 12898, 13007, and 13175 and the Protection and Preservation of Traditional Religions of Native Americans, 42 U.S.C.A. § 1996.

Dear Secretary Abraham:

This is a formal complaint in response to the fact that the Department of Energy (DOE) is discriminating on the basis of race and in a manner that could desecrate legally-protected sacred sites, devastate cultural and spiritual beliefs, and have a profound negative impact on the spiritual and cultural practices, well-being, health and environment of the White Mesa Ute people. The DOE's actions violate several Executive Orders and federal statutes.

This complaint is brought by White Mesa Concerned Community, a grassroots organization of Ute Mountain Ute tribal members from the White Mesa Ute Community. The United States Department of Energy (DOE) violated Executive Orders and other statutes by employing a defective and biased evaluation process that places the members of the White Mesa Ute Community, our sacred sites and spiritual well-being in danger. The DOE continues to consider the International Uranium Corporation (IUC) White Mesa Uranium Mill as a possible site for disposal of radioactive and toxic materials that would be transported from the defunct Atlas Uranium Mill in Moab, Utah. The White Mesa Ute Community is less than three miles from the proposed placing of the uranium tailings. This close proximity guarantees that the members of the White Mesa Ute community will suffer a disproportionate threat to their health in addition to suffering desecration to sacred and culturally significant sites, and severe negative impacts on their spiritual well-being, cultural traditions and religious practices. **The DOE must therefore immediately exclude the International Uranium Corporation facility at White Mesa from consideration for the disposal of the Atlas Uranium Mill tailings.**

INTRODUCTION

The members of the White Mesa Ute Community are members of the Ute Mountain Ute Tribe, a federally recognized Tribe. The DOE is considering the IUC White Mesa Uranium Mill as a

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possible disposal site for radioactive tailings and hazardous materials from the Atlas Uranium Mill in Moab, UT (the "Moab Project") approximately 85 miles north of White Mesa. The residents, sacred sites, culture, spiritual well-being, traditions, health and environment of the White Mesa Ute Community are threatened by this proposal.

The boundary of the White Mesa Ute Community is contiguous with the IUC White Mesa Uranium Mill. Resident tribal members live approximately 2 ½ miles south of the Uranium Mill. The White Mesa Ute Community is the closest community and residential population to the IUC facility. Approximately 300 tribal members live on the White Mesa Ute Community reservation, located in southern Utah, between Blanding and Bluff.

The White Mesa Uranium Mill was built in 1979 by Energy Fuels Nuclear, Inc. to process uranium ore from the Colorado Plateau. In 1997, IUC bought the Uranium Mill and began receiving "alternate feed material" (uranium-bearing radioactive wastes) for processing. Due to falling uranium prices, IUC suspended all U.S. mining activities in 1999 and since then the uranium mill has relied exclusively on alternate feed, which it accepts from sites across the U.S. Once the uranium is extracted, the radioactive and toxic tailings and processing chemicals are placed in tailings impoundments on site.

The IUC facility was built directly on top of and next to hundreds of profoundly sacred sites, including ancient burials and ceremonial sites. The milling and disposal of radioactive and toxic materials at the facility has had and continues to have a profound and devastating impact on the spiritual and cultural well-being of the Ute people at White Mesa, and desecrates hundreds of ancient cultural, sacred and archaeological sites at White Mesa.

The IUC facility poses a serious and disproportionate threat of environmental and health hazards for the White Mesa Ute Community. The tailings ponds, which were constructed with thin plastic liners between two layers of crushed rock, contain highly toxic and radioactive materials such as lead, uranium and sulfuric acid. It is likely that these ponds will leak, and the leak detection system in operation will not detect a leak until the groundwater below has already been contaminated.

The IUC facility also emits radioactive and toxic air pollutants including radon and thoron gases and sulfur dioxide particulates. Windblown particulates and gases travel off the IUC site and onto the White Mesa reservation. Tribal members frequently smell the toxic chemicals used during the processing of the alternate feed. Tribal members regularly witness dust blowing off site, and onto the reservation, as a result of the strong winds common to the area.

STATEMENT OF FACTS

The residents of the White Mesa Ute Community are now facing a new danger. The Department of Energy (DOE) is considering IUC's White Mesa Uranium Mill as a possible disposal site for radioactive tailings and hazardous wastes from the defunct Atlas Uranium Mill in Moab, Utah, approximately 85 miles north of White Mesa. The Altas Uranium Mill site, now called the Moab

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Project site, but referred to as "Atlas Uranium Mill" in this complaint, is a former uranium ore-processing facility located on the north side of the city of Moab. The Uranium Mill is sited on the west bank of the Colorado River and is less than one mile from Arches National Park. The uranium mill tailings were disposed of in a tailings impoundment on site from 1956 until 1984. The tailings pile contains roughly 11.9 million tons of tailings and covers 130 acres next to the Colorado River. In fact, the Atlas Uranium Mill tailings are currently leaking ammonia and other contaminants into the Colorado River and thus must be moved.

IUC has proposed building an 85-mile long pipeline to bring the tailings and waste from the old Atlas Uranium Mill in Moab to the IUC White Mesa facility. This pipeline would be used to slurry the wastes, mixed with water, to the White Mesa location. Massive amounts of water would be needed for this project and would consequently become contaminated. Not only is it unwise to contaminate such large amounts of a resource so valuable in this region, but the contaminated water and other waste material will also create new threats. The water would then be placed in evaporation ponds, which would mean that the contaminants would evaporate into the air, and leakage would threaten groundwater below. The health and environment of nearby residents – the White Mesa Ute Community – would be directly threatened by the "evaporation" of radioactive and toxic materials and their release into the surrounding environment, as well as from the disposal of the remaining radioactive and toxic materials.

The disposal of materials from the Moab Project would also interfere with the traditional cultural activities of the White Mesa Ute Community, including the gathering of local plants and herbs and subsistence hunting of local animals. Tribal members gather willows for baskets, medicinal plants for Ute "much" tea, berries and sage in the area near the uranium mill. White Mesa residents are concerned about the effects of contamination of these and other plants and the consequent health impacts that would result from the ingestion of contaminated plants. White Mesa is also home to deer, ducks, eagles, hawks, birds, wild dogs, prairie dogs, big horn sheep, rabbits, and porcupine. Tribal members have reported increasing numbers of tumors in some of these animals. The risk of contamination of their food impacts the ability of tribal members to hunt and practice their cultural and traditional ways.

Approving the tailings slurry pipeline and transporting the waste from the Atlas Uranium Mill in Moab to the IUC White Mesa Uranium Mill will directly and illegally destroy and desecrate many of the ancient sacred, cultural and archaeological sites at White Mesa. The volume of the Atlas tailings exceeds the capacity of the White Mesa Uranium Mill's existing tailings ponds. As a result, two new ponds would need to be constructed. The construction of these ponds will result in the destruction and further desecration of many sacred and significant archaeological and cultural sites. The construction of the pipeline itself would also destroy archaeological and culturally significant sites. At least eight archaeological sites would be obliterated if White Mesa were chosen for the Moab wastes, many more would be threatened. Adding additional radioactive tailings and toxic materials to the site in and of itself will have a significant, profound impact by desecrating all the spiritual and cultural sites in the area, and interfering with the spiritual well-being of the Ute people.

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While the DOE is considering several potential sites for the disposal of the Atlas Uranium Mill tailings, it has already removed from consideration two communities, the East Carbon landfill and an existing DOE waste site at Green River. These communities were removed from consideration in part because of the impact of the project on the residents. The residents of both East Carbon and Green River are primarily white, and those residents actually live farther from their waste sites than the Ute tribal members live from the White Mesa Uranium Mill.

On December 20, 2002 the Department of Energy published in the Federal Register a "Notice of Intent to Prepare an Environmental Impact Statement and To Conduct Public Scoping Meetings, and Notice of Floodplain and Wetlands Involvement for Remediation of the Moab Uranium Tailings Site in Grand County, UT." The content of this notice, and several actions by the DOE in carrying out this process, have had a discriminatory and disproportionate impact on the low-income, people of color of the White Mesa Ute Community.

The notice, and subsequent information and presentations provided by the DOE, failed to mention the existence of the White Mesa Ute community, let alone mention the proximity of the community to the White Mesa Uranium Mill. Discussion of other potential sites, such as East Carbon and Green River, very clearly referenced the nearby community. However, White Mesa, located adjacent to the IUC facility, was completed omitted, as though it does not exist. No mention of the White Mesa Ute Community was made in the initial DOE documents, maps, or the Federal Register announcement.

At the January 22, 2003 scoping meeting in Moab, Utah, and the January 23, 2003 scoping meetings at White Mesa and in Blanding, the DOE displayed a large map that again omitted the White Mesa Ute Community. Written information containing a map that omitted the community was distributed to the participants. Consequently, members of the public being asked to participate in the scoping process were given flawed and inaccurate information to comment on. People who would have commented on the proximity of the White Mesa Ute Community reservation during the scoping process were not provided accurate information. Thus, they were denied their right to participate in the National Environmental Protection Act (NEPA) scoping process as informed citizens.

The omission of White Mesa from the DOE's Notice of Intent and from their original maps for this project seriously taints the idea of an informed, fair and participatory process. As a result, this process has a significant discriminatory and disproportionate impact on the residents of the White Mesa Ute Community.

Despite the inaccurate representations of the presence of the Ute community, Ute tribal members and others attended the scoping meetings. They repeatedly and strenuously opposed the IUC proposal for a slurry line, citing profound cultural, environmental and health impacts of the proposed project. They submitted written and oral comments to the DOE, documenting why IUC's White Mesa facility should be eliminated from consideration.

On September 14, 2003 the DOE held a "consultation" between DOE officials and Ute tribal

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governments in Moab, Utah. The purpose of the "consultation" was to identify how each off-site disposal plan could affect tribal cultural resources and practices, as well as water and air pollution. White Mesa tribal members, along with official representatives of the Ute Mountain Ute Tribe and other Ute tribes, attended this meeting and emphasized the importance of removing White Mesa from the list of possible disposal sites for the Moab tailings. Tribal officials expressed outrage that other potential sites (East Carbon and Green River) were eliminated from consideration, but White Mesa was still being considered, even though the White Mesa Ute Community is directly adjacent to the IUC facility. Tribal officials also denounced the DOE's continued ignoring of the fact that disposal of the Atlas tailings at White Mesa would have a tremendous negative cultural and spiritual impact on their people, well-being, traditions and culture. Tribal officials expressed their belief that this meeting did not qualify as a legitimate "government to government consultation," as the DOE was ignoring all the concerns of the tribes.

On November 30, 2004 the Department of Energy released a Draft Environmental Impact Statement setting forth what the DOE says are the "full range of reasonable alternatives and associated environmental effects of significant federal actions" for the Moab, Utah, Uranium Mill Tailings Remedial Action Project Site. The announcement of the release was made in the Federal Register on December 3, 2004.

Ignoring the facts presented by the Ute Mountain Ute Tribe, tribal members and other members of the public documenting the devastating impact that disposal of the Moab tailings and waste would have if disposed of at the IUC mill, **the DOE has violated environmental justice, trust responsibility and sacred site protection mandates by continuing to consider the IUC White Mesa facility as a "reasonable alternative." There is nothing reasonable about dumping radioactive tailings and toxic waste on top of ancient, profoundly sacred sites including burials and ceremonial sites. It is environmental racism and a violation of federal trust responsibility.**

The tribal members have serious and well-founded concerns that the waste from Moab could harm the health of the tribal members. The Ute Mountain Ute Tribe officially, and strongly, opposes the 85-mile slurry line and has demanded repeatedly that the DOE take White Mesa off the list of options for the disposal of the Atlas tailings. However, despite the Utes' concerns and pleas, and despite the fact that white communities who faced much less risk have been eliminated from consideration, the DOE is continuing its examination of the feasibility of the White Mesa proposal.

By continuing to consider the IUC facility at White Mesa as a recipient of the radioactive and toxic materials from the Moab project and ignoring the extremely serious disproportionate religious, spiritual, cultural, health and environmental threats posed by the project to the White Mesa Ute Community, the DOE violates Executive Orders 12898, 13007 and 13175 and the Protection and Preservation of Traditional Religions of Native Americans Act, 42 U.S.C.A. §1996. If the IUC facility is approved as the recipient of the tailings and waste from the Moab project, the White Mesa Ute Community would bear a disproportionate share of the nation's

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environmental dangers. The proposal has a severe negative impact on the White Mesa Ute Community's religious freedom, severely threatens their cultural and traditional practices, desecrates their scared sites and threatens their health and environment. This discriminatory impact cannot continue to be ignored by the DOE.

EXECUTIVE ORDER 12898: ENVIRONMENTAL JUSTICE

Executive Order 12898 requires federal agencies to take environmental justice concerns into consideration in the decision making process. Specifically, Executive Order 12898 states that "...each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations in the United States and its territories and possessions."

Section 1-103 states that each Federal agency shall promote enforcement of all health and environmental statutes in areas with minority populations. Further, Section 2-2 maintains that a Federal agency shall not subject persons to discrimination under its programs, policies and activities, because of their race, color or national origin.

The DOE, as a Federal agency, must therefore consider and avoid any discriminatory effects of the IUC proposal for the White Mesa Ute Community. The Ute Mountain Ute Tribe is a federally recognized tribe, and as such, must be taken into consideration as a community of color. The DOE must not place a disproportionate environmental burden on this community.

The DOE violates this executive order in at least three ways. First, they have not taken into consideration the cultural, spiritual, religious and traditional aspects of the Ute Mountain Ute Tribe. The disposal of radioactive and toxic materials from the Atlas site in Moab at the IUC White Mesa Uranium Mill will destroy and desecrate profoundly sacred and culturally significant sites at and next to the IUC facility, have a tremendous negative impact on the spiritual practices and spiritual well-being of tribal members, and further impede the traditional cultural practices of White Mesa tribal members Tribes' burial grounds. Due to the large volume of toxins that will be released into the air and water, the proposed tailings uranium mill will create adverse effects on the Tribes' subsistence hunting and gathering of traditional herbs, plants and medicines, essential to their survival as a people and culture.

Second, not only has the DOE failed to take the damage to the sacred sites into consideration, but it is also causing a disparate impact on a community of color based on race. The DOE has eliminated from consideration communities that are located farther away from their waste sites than the White Mesa community is from the White Mesa Uranium Mill. By withdrawing communities that are mainly white from consideration but continuing to consider a community of color as a potential site for its hazardous slurry line, the DOE directly violates the Executive Order. This forces a disproportionate environmental burden on a community of color. The proposed pipeline to the White Mesa Uranium Mill will be in addition to the operations of the White Mesa Uranium Mill. The additional waste will place a disproportionate burden upon the

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White Mesa community.

Third, the DOE fails to identify adverse human effects on a community of color because the DOE failed to even place the White Mesa Ute Community on maps of the area. Beyond failing to seriously consider issues of environmental justice, the DOE has engaged in a dangerous step. It is continuing the trend of eradication of Indigenous tribes by masking their existence, considering issuing a permit to allow more radioactive and toxic waste to be placed in tailings ponds near the community and directly on top of their sacred sites, all the while not informing the general public of the existence of the White Mesa Ute Community. As a result, the White Mesa Ute Community and the Ute Mountain Ute Tribe could be exposed to radioactive and hazardous wastes in their air, suffer the poisoning of their groundwater supply, suffer the desecration of sacred sites and severe harm to their spiritual well-being.

EXECUTIVE ORDER 13007: SACRED SITES

Executive Order 13007 provides for the protection of Indian Sacred Sites. The Executive Order provides that, "in managing Federal lands, each executive branch agency with statutory or administrative responsibility for the management of Federal lands shall accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoid adversely affecting the physical integrity of such sacred sites."

Under this Executive Order, the DOE maintains the responsibility for preserving the integrity of sacred Indian sites. In constructing the proposed slurry line, numerous archaeological and culturally significant sites could be destroyed, and many sacred sites at White Mesa would be desecrated and destroyed for expansion of the IUC facility to accommodate the tailings and waste from the Moab project. This is in addition to the numerous sacred sites that were destroyed when the Uranium Mill was originally constructed, as well as the ongoing, continuous desecration of and disturbance to sacred sites at White Mesa as a result of the ongoing activities at the facility. It is the duty and lawful responsibility of the DOE to remove White Mesa as a potential site for the disposal of the Moab project tailings and waste in order to prevent the further desecration of these sacred burial sites and other significant cultural sites. Any action to the contrary will be in direct violation of this Executive Order.

EXECUTIVE ORDER 13175: TRIBAL CONSULTATION

The President issued Executive Order 13175 "in order to establish regular and meaningful consultation and collaboration with tribal officials in the development of Federal policies that have tribal implications." It is the duty of the DOE to work in *meaningful* consultation with Tribal officials. Section 5 of the Executive Order provides, "each agency shall have an accountable process to ensure meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications."

As stated earlier, the Ute Tribal Council strongly opposes the construction of this pipeline. Ute Mountain Ute tribal leaders and representatives have met repeatedly with the DOE to discuss,

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and oppose, the IUC proposal. The Ute Mountain Ute Tribe and tribal members believe that the IUC plan poses significant risks to its White Mesa residents and sacred sites. As eloquently stated by a council member, "Which part of 'no' don't you understand?"

The DOE has completely disregarded the concerns of the Ute Mountain Ute Tribe and thus violates both the letter and the spirit of the Executive Order. The Order specifically calls for "meaningful" consultation and collaboration. By continually ignoring the concerns and wishes of the Tribe, the DOE fails to engage in any kind of collaboration, let alone meaningful consultation and collaboration.

Protection and Preservation of Traditional Religions of Native Americans, 42 U.S.C.A. § 1996

In addition to violating the Executive Orders, the DOE violates 42 U.S.C.A. §1996 which provides that the United States shall preserve for American Indians their inherent right of freedom to believe, express and exercise their traditional religion.

As stated above, the disposal of the Moab project material at the IUC White Mesa facility will result in the destruction of previously undisturbed sacred sites. Tribal officials and White Mesa Ute Community tribal members have repeatedly told the DOE of the sacred spiritual and cultural significance of these sites. The DOE is well aware of the archaeological studies done for the federal government at the White Mesa Archaeological District that confirm the significance of the ancient sites there, including the presence of many burials and ceremonial kivas.

The area is sacred to both the Utes and the nearby Navajo people. Archaeologists have documented the presence of large pit houses and ceremonial kivas, storage structures, burial sites, fire pits, middens, and numerous artifacts of daily life. In 1979 and 1980, the Nuclear Regulatory Commission (NRC) and the Bureau of Land Management (BLM) designated this area a potential archaeological district and recommended it for inclusion in the National Register of Historic Places. The Keeper of the National Register determined that the uranium mill lands at White Mesa were eligible for the National Register as an archeological district.

The preservation of these sites is necessary for the preservation of the spiritual well-being of the White Mesa Ute Community. Tribal members have repeatedly made clear the profound respect that community members have for their ancestors, and the importance of preserving the integrity of the sacred sites including burial sites of their ancestors. These sites are also an important part of the Community's ability to worship, as they are used for many traditional gatherings. Destroying these sites will directly interfere with the tribes' freedom to exercise their traditional religion.

REMEDY

The White Mesa Concerned Community, comprised of members of the Ute Mountain Ute Tribe, request the following remedies:

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(1) The Department of Energy must immediately uphold and comply with all applicable Executive Orders and laws and remove the International Uranium Corporation White Mesa Uranium Mill from consideration as a possible site for the disposal of the Atlas Uranium Mill tailings and associated wastes;

(2) The Department of Energy must exclude the IUC facility from consideration for receipt of any other tailings or waste material from any other source;

(3) The Department of Energy should educate all staff and contractors about Executive Orders and laws protecting sacred sites, religious freedom and practices, and environmental justice.

CONCLUSION

The Department of Energy, as a federal agency, is mandated to uphold the law and abide by Executive Orders. The Department of Energy must not take actions that have a discriminatory or disproportionate impact on people of color or other low-income populations. It must protect sacred sites and not interfere with traditional religious freedoms and practices. The Department of Energy's actions and decisions to date regarding shipping material from the Atlas Uranium Mill to the IUC facility have not complied with the laws and Executive Orders cited in this complaint. The result is a direct violation of the civil rights of members of the White Mesa Ute Community of the Ute Mountain Ute Tribe.

Our civil rights, sacred sites and religious, cultural and traditional practices must be respected, by law and by right.

Respectfully submitted by White Mesa Concerned Community

Thelma Whiskers

Thelma Whiskers

Yolanda Badback

Yolanda Badback

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Document #47 Dohrenwend, John C. Individual

DRAFT *ENVIRONMENTAL IMPACT STATEMENT*
FOR THE MOAB, UTAH, UMTRA PROJECT SITE
U.S. DEPARTMENT OF ENERGY (DOE) OFFICE OF ENVIRONMENTAL MANAGEMENT IN GRAND JUNCTION

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COMMENT FORM

MOAB PUBLIC HEARING – JANUARY 26, 2005

This form is provided as a means of capturing your questions and comments on the Draft *Environmental Impact Statement* (EIS). Comments on the Draft EIS will be accepted through February 18, 2005. You may also provide comments or suggestions concerning the content and format of the public hearings.

You may deposit the form in the comment box at the entrance of the meeting room. Comments, requests for further information, and requests for copies of the Draft EIS also may be directed by mail to Donald R. Metzler, Moab Federal Project Director, U.S. Department of Energy, 2597 B¾ Road, Grand Junction, Colorado 81503; by email to moabcomments@gjo.doe.gov; by telephone toll free at (800) 637-4575, or by fax at (970) 248-7636. Thank you for your participation.

Questions or comments concerning the Draft *Environmental Impact Statement*:
SEE ATTACHED SHEET

What would you consider to be your primary comment about the alternatives described in the EIS?

Comments/suggestions concerning the public hearings:

Name: JOHN C DOHRENWOEND
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After all of the studies, reports and pronouncements by the Atlas Minerals Corporation, the Nuclear Regulatory Commission, the Department of Energy and their advisors and consultants, what do we really know about the suitability of the Atlas mill site for long term storage of more than 10.5 million tons of hazardous waste? Well for one thing careful review and analysis of the Department of Energy's reports clearly show that the DOE has not developed an accurate picture of the geologic and hydrologic conditions at the mill site. The DOE's reports contain numerous flaws and failings, including the use of inaccurate and/or incomplete data, errors in logic, errors in data analysis and comparison, selective and/or inconsistent use of data, errors of omission, and the application of overly simplistic models and theories that are largely inappropriate to the specific geologic and hydrologic situation in Moab Valley. As a result, DOE's assessment of the potential hydrologic and geologic hazards at the Moab Mill site is overly simplistic and highly distorted.

Contrary to the DOE's assurances:
(1) An 80-year history documented by historic maps and aerial photographs clearly shows that the Colorado River is **not** migrating south and east away from the tailings pile. The high flood levees bordering the main channel have not shifted measurably, while the south and east bank of the active channel between these levees has moved north and is now 150 to 320 feet closer to the mill site. As a result the channel has also narrowed and deepened in its new position.
(2) Available subsurface data indicates that the valley fill is thickest and deepest beneath or slightly north of the present location of the river channel, that subsurface conditions directly beneath the tailings pile are much more complex than the highly simplistic picture presented by the DOE, and that differential subsidence of the valley floor directly beneath the tailings pile must be considered as a potential geologic hazard.
(3) The position of 'The Sloughs' in the Matheson Wetlands is a lowland marking the boundary between the Mill Creek-Pack Creek fan and the Colorado River fan. The Sloughs are **not** directly related to salt induced subsidence of the valley filling sediments.
(4) Courthouse Wash and Moab Wash have **not** caused the Colorado River channel to migrate away from the mill site. Rather, analysis and direct observation of high energy flows from Courthouse Wash clearly show that these floods have deposited sediments on the south side of the channel and therefore have actively contributed to the northward migration of the Colorado River.
(5) The geometry and position of ancient Colorado River gravels buried beneath the surface of Moab Valley clearly show that in the recent geologic past the Colorado River has in fact shifted back and forth across mill and tailings site.

Therefore, careful and consistent analysis of available data shows that the flood hazard potential at the Moab Mill site is not diminishing because of a fantasized southward and eastward migration of the Colorado River. Rather, the River has flowed across the site in the past and very possibly could return to that course in the future. Also because the River's inner channel has over the past 80 years shifted closer to the pile and has become narrower and deeper, the potential for deep channel scour and sudden channel shifting may have increased significantly.

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