

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
ATOMIC SAFETY AND LICENSING BOARD

OFFICE OF THE SECRETARY  
RULEMAKINGS AND  
ADJUDICATIONS STAFF

Before Administrative Judges:

Alan S. Rosenthal, Presiding Officer  
Dr. Richard R. Cole, Special Assistant

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| In the Matter of            | * | Docket No. 40-8681-MLA-10 |
|                             | * |                           |
| INTERNATIONAL URANIUM (USA) | * | ASLBP No. 02-793-01-MLA   |
| CORPORATION                 | * |                           |
|                             | * |                           |
| (White Mesa Uranium Mill)   | * |                           |
| _____                       |   |                           |

**SIERRA CLUB'S RESPONSE TO IUSA'S SUPPLEMENTAL FILING**

**I. INTRODUCTION**

The November 15, 2001 Memorandum ordered the parties to participate in a telephonic conference on November 28, 2001, the Honorable Alan S. Rosenthal presiding. In that memorandum, two questions were asked of the Licensee (hereinafter, "IUSA"):

1. During the period that White Mesa Mill will be receiving material from the Maywood, FUSRAP site, might it simultaneously be receiving shipments from other sites under the aegis of prior amendments to the license in question? If so, what is the volume of truck traffic in the vicinity of the Mill associated with those shipments and the total amount of such truck traffic that might occur on any particular day?
2. Does the Licensee have the responsibility to arrange for the transportation of materials sent to the White Mesa Mill for processing or is that the responsibility of the particular shipper? If the Licensee has that responsibility, will it employ the same truck transportation contractor on the Maywood shipments as utilized on shipments originating in other locations and will similar contractual provisions be

in force? In short, to what extent, if any, is the truck transportation of the Maywood materials likely to be differ significantly from the truck transportation of the material covered by other license amendments.

The second question was never answered. Such information is critical in responding to IUSA's application.

In addition, at the time of the telephonic conference, the Presiding Officer asked of IUSA whether the license amendment application identified the nature of the material involved<sup>1</sup>. Not only did IUSA fail to respond, but IUSA has never presented any specific documentation regarding the chemical and radiological contamination of the approximately 24 separate Maywood FUSRAP properties<sup>2</sup>. IUSA also failed to submit a Radioactive Material Profile Record (RMPR) that usually is attached to the application to process "alternate feed material."

Again, such information is critical for a response to the application and supplemental filing because the potential for a distinct new threat of harm from the material from the various Maywood properties cannot be fully addressed unless and until specific information regarding the nature of the Maywood thorium material, such as the information that has recently been made publicly available by the U.S. Army Corps of Engineers, can be reviewed.

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<sup>1</sup> See, Official Transcript of Proceedings; Hearing ITMO International Uranium (USA) Corporation White Mesa Uranium Mill; Docket No. 40-8681-MLA-10; ASLBP No. 02-793-01-MLA at p. 40, lines 20-25 (hereinafter, "Transcript").

<sup>2</sup>These properties are in 12 separate clusters and are scheduled to be cleaned up in Phase II of that FUSRAP and Superfund Site cleanup project. This product would be then scheduled for transportation to Cisco where it would be then transferred by truck through Moab, Monticello, and Blanding before reaching its destination at the mill. After reaching its destination, the product would be deposited out in the open for an indefinite period of time prior to being processed.

Accordingly, Petitioner requests leave<sup>3</sup> to be able to fully address this issue after being able to analyze the information contained in Attachment 2 "Uranium Content Estimates, Material Description, and Analytical Data for the Maywood Site" to IUSA's June 15, 2001, original application<sup>4</sup>.

During the telephonic conference, the Presiding Officer also asked of the petitioners, "how the receipt and processing of the Maywood materials would produce a distinct new harm or threat above and beyond that involved in the prior activities." Petitioner maintains that the increase in truck traffic as a result of the June 15 application is a distinct new harm or threat above and beyond that involved in prior activities. In response to this assertion, IUSA requested leave to supplement the record with respect to the transportation of non-ore materials from Cisco, Utah, to the White Mesa Mill (hereinafter, "the mill") located in San Juan County. This request was granted. The Presiding Officer also instructed IUSA to provide information regarding a truck transportation accident in Cisco.

This response will address not only IUSA's supplemental filing, but also attempt to address the unanswered questions of IUSA.

## **II. SUMMARY OF PETITIONER'S RESPONSE**

As a result of the June 15, 2001 application, truck traffic will be increased more than 250% of the amount of non-ore materials already been received by the mill for either direct disposal or processing and disposal. Given the variables surrounding the increase in traffic, such as the fact that

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<sup>3</sup>During the 11/28/01 telephonic conference, the undersigned also requested leave to file supplemental affidavits on the standing issue. That request was taken under advisement and has not been ruled upon. That request is separate from the one contained in this pleading.

<sup>4</sup>See, Presiding Officer' Request for Additional Information (Docket No. 40-868-MLA-10) (December 5, 2001)(MLO13460497) (hereinafter "December 5 Order").

the area involved is an international tourist destination, the upcoming activities, the seasonal impacts on traffic and the lack of a haz-mat team, such an increase results in a distinct new harm or threat above and beyond that involved in prior activities.

In addition, the Maywood product is thorium material which requires special procedures "over and beyond those required for conventional ores or other alternate feed materials."<sup>5</sup> As a result there is greater risk of harm done than any other material previously received at the mill for processing and disposal, since the handling of the Maywood thorium material at the mill, and/or the clean up of any material as the result of an accident, would require additional procedures that would be protective of the health and safety of the workers involved, and protective of the public's health and safety and the environment.

## II RESPONSE

- A. The increase in truck traffic alone establishes that the Maywood material represents a 'distinct new harm above and beyond that involved in prior activities.'

IUSA has requested permission to transport 840,000 tons of source material thorium and thorium byproduct material from Maywood. According to information provided by IUSA to the Atomic Safety and Licensing Board on November 13, 2001, the amount of non-11e.(2) byproduct material and feed material other than ore authorized by IUSA's license or previous amendments thereto and transported to the mill through Moab, Monticello, and Blanding," is, in sum, 321,828 tons.<sup>6</sup> Yet, IUSA takes the position that the June 15 license amendment does not result in any

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<sup>5</sup>See, International Uranium (USA) Corporation Standard Operating Procedures: High Thorium Content Ore Management, (December 18, 2000), p. 1.

<sup>6</sup>See, International Uranium (USA) Corporation's Response to the Presiding Officer's October 26, 2000, Request for Information, (November 13, 2000).

significant risk of harm<sup>7</sup>.

IUSA's position is disingenuous. First, IUSA entirely ignores the fact that they are, in reality, asking to transport 2 ½ times the amount transported for the last 14 years. This means that 65 to 115<sup>8</sup> trucks will travel through Cisco, Moab, Monticello and Blanding (and back again) every week of the year, over a 7-year period. This represents a run of trucks greater than previous truck runs combined. It takes no leap of logic to conclude that such an increase would represent a risk greater than all the other runs combined. This, in turn, would increase the risk for the likelihood of accidents or other problems.

This is not simply speculation or conjecture. Take, for instance, an incident where IUSA received hazardous waste from the Massachusetts Highway Department Central Artery Tunnel which

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<sup>7</sup>IUSA states as follows:

Any increase in truck traffic caused by the transport of the Maywood materials to the Mill or potential accidents occurring as a result of such transport, separately or in conjunction with truck traffic from other licensed activities, will not result in either A) a significant threat, whether radiological or otherwise, to public health, safety or the environment; or B) a significant threat, whether radiological or otherwise, to public health, safety or the environment above, and distinct from, that of previously licensed activities, and for either of these reasons is not a sufficient basis for any of the Petitioners in this proceeding to establish standing.

Supplemental Pleading, p. 2-3.

<sup>8</sup>IUSA's estimated range of 86 to 46 truck load per week is inaccurate. The range of 65 to 115 trucks is based upon the following:

- a. High end: Trucks would carry 20 tons of material. 840,000 divided by 20 equals 42,000 truck loads. 42,000 truck loads divided by 7 years equals 6,000 trucks per year. 6,000 trucks divided by 52 weeks equals 115 trucks per week.
- b. Low end: 470,00 divided by 20 equals 23,500 truck loads. 23,500 truck loads divided by 7 years equals 3,357 per year. 3,357 divided by 52 equals 65 trucks per week.

The waste material sample result showed a lead concentration of 5.75 milligrams per liter (mg/l) which was above the criteria of 5.0 mg/l for classifying the material as hazardous waste.

The waste material had been erroneously shipped to the site because of a duplication in shipping container numbers. Several programmatic weaknesses contributed to the problem including poor control of shipping manifest and use of generic versus specific ore receipt procedures<sup>9</sup>.

This resulted in a State of Utah ordering the removal of the material from the Mill<sup>10</sup>.

In another incident, IUSA failed to follow procedures for surveying equipment such as intermodal containers for unrestricted use<sup>11</sup>. Even after Preliminary Notification of Event or Unusual Occurrence was issued, IUSA failed to correct the situation and several months later, additional contaminated intermodals were transported from the mill to Cisco:

On June 22, 2000, the licensee reported to the NRC that they had failed to implement their SOP for releasing intermodal containers offsite. Failure to implement the SOP for releasing intermodal containers for restricted use was a violation of License Conditions 9.6 and 9.10<sup>12</sup>.

A third incident involved the transportation of waste that contained unacceptable material (i.e., meat and bones) that was not discovered prior to shipment and only as it was being unloaded:

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<sup>9</sup>See, Letter from D. Blair Spitzberg, Ph.D., Chief Fuel Cycle and Decommissioning Branch, to David C. Frydenland, Vice President, International Uranium (USA) Corporation. at p. 9, §5.1.

<sup>10</sup>See, Order for Compliance, No. 0002007. See also, Letter from David C. Frudenlund, Vice President and General Counsel, to Dennis R. Downs, Director, Division of Solid and Hazardous Waste, Utah Department of Environmental Quality, (May 19, 2000); Letter from Michelle R. Rehmann, Environmental Manager, to Dennis R. Downs, Director, Division of Solid and Hazardous Waste, Utah Department of Environmental Quality, (May 22, 2000)

<sup>11</sup>See Preliminary Notification of Event or Unusual Occurrence (PNP-IV-00-008)(March 2, 2000).

<sup>12</sup>See Letter from D. Blair Spitzberg, Ph.D., Chief Fuel Cycle and Decommissioning Branch to David C. Frydenland, Vice President and General Counsel for International Uranium (USA) Corporation, (April 27, 2001) at p. 11 §5.5.

(i.e., meat and bones) that was not discovered prior to shipment and only as it was being unloaded:

Immediately after dumping the IMC, a front-end loader was used to push up the unloaded contents of IMC MHFU111266 onto Line Ore Lot No. \_\_ (to be confirmed) in accordance with Mill SOPs. At this time personnel visually observed organic material (i.e., pieces of meat and bone) which was mixed in with the Linde material from IMC No. MHFU11266<sup>13</sup>.

These incidents document the fact that unauthorized hazardous materials have arrived at the mill and material which should not have been incorporated into waste, were incorporated and delivered to the mill. An increase of materials transported to the mill, in turn, increases the probability that unauthorized materials and improperly characterized waste will pass through Moab, Monticello and Blanding, arriving at the Mill to be dumped. This presents additional, incremental, harm.

There is an additional incremental harm due to the fact that after entering the mill, the intermodals travel back through Blanding, Monticello, Moab and Cisco, posing a continuous threat of having radioactive material transported off-site<sup>14</sup>. The increased radiological hazards from contaminated trucks and from the mud dropping off the trucks in the middle of the street presents risks to people who spend any time on Route 191 or in Cisco where the contaminated intermodals are stored before return shipment. Simple logic dictates that the more trucks you have, the greater the chance that this event will recur.

With respect to IUSA reliance on the numbers of truckloads involved in past activities and

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<sup>13</sup>See, Fact Sheet, Linde IMC (No.MHFU111266) Incident Report and Investigation ¶ 5 (October 2., 2000).

<sup>14</sup>See generally Letter from Michelle R. Rehmann, Environmental Manager, to Derick Rhodes, IT Corporation, (February 29, 2000); Letter from Derick Rhodes, IT Corporation to Michael J. Ziolkowski, Hazardous Materials Inspector, US Dept. of Transportation (February 29, 2000)/

projected future activities, including transportation of the Maywood materials<sup>15</sup> it wholly failed to address several significant issues with the increase.

For instance, IUSA does not address the truck traffic that may well ensue from its transportation of material from the W. R. Grace Site in Chattanooga, Tennessee. On December 27, 2000, IUSA has received a license amendment<sup>16</sup> authorizing them to receive up to 140,000 cubic yards (203,000 tons) of thorium byproduct material from the W. R. Grace Site<sup>17</sup>. In the April 12, 2000 application, IUSA stated that "W. R. Grace may ship an approximate average of 20 to 25 trucks per day over the life of the project, for a period of approximately 12 to 18 months." This presents a possible overlap with the Maywood material which already faces overlaps from the Molycorp material and Linde material.

IUSA, likewise, fails to discuss the possibility of future license amendments authorizing the receipt of additional material at the mill from other off-site reclamation projects during the proposed 7- year time frame for transportation of the Maywood materials. As documented in the draft plan for the reclamation of the Moab Mill, the possibility of processing the Moab Mill tailings at the mill will be considered<sup>18</sup>.

The cumulative impact of additional license amendments must be analyzed, as required by NEPA. Without such analysis, petitioners cannot be assured that the cumulative impact of the

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<sup>15</sup>Supplemental Pleading, p. 2-5.

<sup>16</sup>License Amendment 17.

<sup>17</sup>See, License Amendment 17

<sup>18</sup>See Attachment A; Moab Site Project, Preliminary Plan for Remediation Draft (October 2001) at §2.1.3, Figure 2-2.

transportation, receipt, and processing of material from several different off-site reclamation projects will not cause significant incremental radiological or nonradiological risk of harm to public health, safety or the environment.

The fact that the mill is licensed to process up to two thousand (2,000) tons of conventional ore daily, resulting in approximately 100 round trips to and from the mill daily adds little to the analysis since IUSA provided absolutely no information as to the actual route<sup>19</sup>. This leaves the unanswered question of whether these one hundred (100) round trips would go through Blanding, Monticello, Moab or Cisco. This is significant because the 1979 EA does not address the transportation of ore through these areas.

As set forth in the 1979 EA, in the past the owners of the mill maintained ore-buying stations in Blanding and Hanksville, Utah. Blanding is between Monticello, Moab and the mill. Ore from Hanksville might have been shipped via Routes 24, I-70 and Route 191 through Moab (the long way around) or it might have come directly from Hanksville to the Mill via Route 95 and not passed through Monticello or Moab. However, any ore being shipped from Colorado would have come through Moab. Yet no information has been provided as to the historical or current ore transportation routes. It is, therefore, unlikely that the transportation of ore to the mill is in any manner related to, or relevant to, the transportation of materials other than ore from Cisco, through Moab, Monticello, Blanding to the mill.

Without a new EIS that compares and analyzes historical transportation routes vs. currently proposed routes, as well as the cumulative impacts of transportation through urban areas such as Moab or Monticello, there is no assurance that such transportation will not cause significant

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<sup>19</sup>Supplemental Pleading at p. 4.

incremental radiological or nonradiological risk of harm to public health, safety or the environment.

This is especially true since transportation accidents related to the transportation of ore to the mill were considered in the 1979 EI for the mill but transportation accidents related to the transportation of non-ore material to the mill were neither 'conceptualized and analyzed' in the 1979 EIS.

Another glaring omission in IUSA's supplemental pleading is the absolute failure to consider upcoming activities that will impact the waste transportation corridor through Moab. One such activity involves the Moab Mill. One proposal under consideration is the transportation of the tailings from the Moab Mill to White Mesa<sup>20</sup>. Regardless of where these tailings will be transported, Route 191 will be impacted either to the north or the south<sup>21</sup>.

There is also work by UDOT work on Route 191 between Crescent Junction and Moab. Additionally, there will be the building of a new visitor center at Arches and the development of a new entrance road to Arches off of Route 191 just north of the Moab Mill.

Aside from these activities, IUSA fails to take into account seasonal variations. Take, for instance, the fact that any increase in truck traffic from the Spring through the Fall would compound an already otherwise high traffic volume. The area between Cisco and the mill is a heavily visited, international tourist destination (i.e., Arches National Park, Canyonlands National Park). Any increase in truck traffic would necessarily increase the risk of traffic accidents and the number of people who would be impacted by a spill of radiological or hazardous materials.

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<sup>20</sup>See Attachment A; Moab Site Project, Preliminary Plan for Remediation Draft (October 2001) at Figure 1-5.

<sup>21</sup>See Attachment A; Moab Site Project, Preliminary Plan for Remediation Draft (October 2001) at Figure 1-2.

On the other hand, increased truck traffic during the winter months is hazardous due to snow and ice on steep, narrow, curvy mountain roads between Cisco and the mill.

The wind storms are also hazardous. Blowing dirt and dust would create visibility problems for truck drivers. The winds, especially in the Grand County area, are strong. In fact, the wind storms have proven strong enough to create huge dust plumes of wind-blown tailings from the Moab Mill tailings pile. Thus, an accident in a dust storm, which is more likely because of poor visibility, would quickly spread a spilled material.

Heavy rainstorms in this area are often accompanied by wind. Again, this results in poor visibility for truck drivers, slippery roads, and potential for immediate dispersal of radiological and chemical contaminants via wind and water.

Finally, no mention is made of the local wildlife. Numerous accidents involving elk and deer are common place, especially in San Juan County. Again, a hazard for truck drivers.

Finally, neither Grand County nor San Juan County has haz-mat response capabilities. The transporter's haz-mat team is located in Salt Lake City. This would make an immediate response an impossibility. Assuming good weather, it would take at least a four (4) to five (5) hours to drive from Salt Lake to address a spill in Cisco. By then wind and/or water could have begun to disperse radiologically and chemically contaminated materials into the atmosphere, onto the land, and down waterways.

The statistics presented by IUSA are spurious. There is no explanation regarding how these statistics were derived other than the fact that these 'statistics' are based on conversations between IUSA and UDOT<sup>22</sup>.

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<sup>22</sup>See, Supplemental Pleading, p 6-8

Moreover, the statistical table fails to provide any explanation whatsoever as to the tremendous differences between the traffic at the junction of Route 191 and Interstate 70 (Crescent Junction); the traffic at the Junction of Route 128 and Route 191 (North of Moab); and the traffic at Route 191 at the Grand County and San Juan County line.

Another problem lies in the failure to define 'trucks.' The statistics are not broken down to indicate truck traffic for various truck sizes and weights. There is, therefore, no way to compare the number of large trucks transporting intermodals with large trucks carrying equivalent loads.

IUSA does not analyze the impact of the increased truck traffic in Cisco. Yet, in the portion of IUSA response to the question concerning the spill in Cisco, IUSA does acknowledge the substandard condition of the road that is being used in Cisco.

Based on what information has been provided, there is simply no way of determining if the truck traffic in Cisco from the offloading terminal to Interstate 70 represents an insignificant amount of truck traffic at that location. This is further compounded by the fact that Cisco is in a very remote area, and the traffic through Cisco is comprised mostly of people on their way to the Colorado River.

IUSA has not presented any analysis regarding the impact of the Intermodal Terminal operated by MHF Logistical Solutions, Inc.(hereinafter, "MHF") located in Cisco. That company was granted permission from Grand County to exceed the 30,000 weight limit for a bridge in Cisco. At present, MHF is the only truck transport company to have such a permit. That bridge is not designed for the weight of the intermodals<sup>23</sup>.

Considering that the proposed transportation of the Maywood materials involves that transportation of more than 2 ½ times as much material than has previously been off loaded at Cisco

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<sup>23</sup>See Attachment "B".

and trucked through Cisco up to Interstate 70, the use of the substandard road, combined with the use of a substandard bridge in Cisco, would present a new and distinct harm.

IUSA's 'Determination of No Significant Impact is meaningless<sup>24</sup> The NRC has never made such a determination with respect to the transportation of the Maywood materials and the cumulative impact of transportation on non-ore material to the mill. Such a determination must be made per the NEPA process, as set forth in 10 C.F.R. Part 51. This is an issue in the proceeding itself. It is, therefore, improper to consider the merits of the arguments in the standing phase of the proceeding.

In sum, to allow an increase in traffic as contemplated by the Maywood project, which involves a transportation increase of 250% the total amount of material that has been transported in the last 14 years to the mill and which fails to take into account the existing traffic patterns or the hazards on the route itself, represents a distinct new harm or threat above and beyond all the material that have previously passed through Cisco to the mill

B. There is no data addressing the risk to the public health, safety and/or the environment by the transportation of the Maywood product.

The bulk of the Maywood materials exceeds the total bulk of all the materials that have previously been stored prior to processing and disposal at the mill, yet no data regarding the radiological and chemical constituents has been presented by IUSA. In fact, documentation has never been presented to the NRC to show the exact chemical and radiological contamination levels at each of the various Maywood properties that are involved in the clean up. Thus far, all that has been presented are vague, general and/or undocumented statements about the radiological and chemical contaminants contained in the thorium materials from the Maywood properties.

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<sup>24</sup>See Supplemental Pleading at p. 5-8.

For instance, IUSA states that the Maywood material is similar to the material that was spilled at Cisco. However, IUSA does not provide and information as to how exactly is the Maywood material similar to (or different from) the material that was spilled at Cisco. IUSA provides no data. Only when documents are provided regarding the physical, radiological, and chemical characteristics of both the material that was spilled and the Maywood materials can such a conclusion be warranted.

There is not even a generic, let alone a site-specific, EIS to refer which considered the risk of harm to public health, safety or the environment of the transportation, including risks involved in transportation accidents, of non-11e.(2) byproduct material, "alternate feed material," or thorium byproduct material (11e.(2) and non-11e.(2)).

The September 1980 EIS did not 'conceptualize and analyze' transportation accidents related to the transportation of uranium or thorium byproduct materials, processing wastes, and other non-ore materials to a licensed uranium mill<sup>25</sup>.

Rather, that 1980 EIS addressed transportation accidents narrowly: (1) shipments of refined yellowcake from the mill to the uranium hexafluoride conversion facility; (2) shipments of ore from the mine pit to the mill; and (3) shipments of process chemicals from suppliers to the mill<sup>26</sup>.

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<sup>25</sup>See, Final Generic Environmental Impact Statement of Uranium Milling at § 7.1.5, "Transportation Accidents"; Vol. 1, Summary and Text, NUREG-07-6 (September 1980).

<sup>26</sup>As set forth in the 1980 EIS at p. 8, § 7.1.5.:

Transportation of materials to and from the model mill can be classified into three categories (1) shipments of refined yellowcake from the mill to the uranium hexafluoride conversion facility, (2) shipments of ore from the mine pit to the mill, and (3) shipments of process chemicals from suppliers to the mill. An accident in each of these categories has been conceptualized and analyzed, and the results are given below.

The 1979 Final Environmental Statement, likewise, did not postulate and analyze transportation accidents related to the transportation of uranium or thorium byproduct materials, processing wastes, and other non-ore materials to the mill<sup>27</sup>.

Nor has the Nuclear Regulatory Commission developed a programmatic environmental impact statement for its new regulatory program, i.e., the processing of uranium feed material other than natural ores and the disposal of non 11e.(2) byproduct material at licensed uranium mills, as is required by the NEPA. Yet it is these very activities which currently constitute the primary, if not the sole, activity at operating conventional uranium mills<sup>28</sup>.

In sum, without an EA and an EIS regarding the transportation and processing of uranium feed material other than natural ores and the disposal of non 11e.(2) byproduct material at licensed uranium mills, Petitioner cannot be assured that these activities will not cause significant incremental radiological or nonradiological risk of harm to public health, safety or the environment.

IUSA's assertion that the Maywood material is comparable to the material from the HMI site

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<sup>27</sup>As set forth in the 1979 EIS:

Transportation of materials to and from the mill can be broken down into three categories: (1) shipments of ore from the mine to the mill, (2) shipments of refined yellow cake from the mill to the uranium hexafluoride conversion facility, and (3) shipments of process chemicals from suppliers to the mill. An accident for each of these categories has been postulate and analyzed. The results are given in the following discussion.

Final Environmental Statement related to the Energy Fuels Nuclear, Inc., White Mesa Uranium Project, Docket No. 40-8681, NUREG-0556 (May 1979).

<sup>28</sup>See Final "Revised Guidance on Disposal of Non-Atomic Energy Act of 1954 11e.(2) Byproduct Material."

<sup>29</sup> is without foundation<sup>30</sup>. Again, IUSA has failed to provide the requisite data documenting the source material thorium (thorium-232 and progeny) content of each of the various sets of Maywood materials (from approximately 22 separate properties) and the source material thorium content of the Heritage Minerals, Inc., (HMI) materials.

Moreover, IUSA is requesting to receive 840,000 tons (600,00 cubic yards) of thorium byproduct material from the Maywood site. This stands in sharp contrast to IUSA's November 29, 2000 request to transport approximately 1, 910 tons (2000 cubic yards) of source material thorium (thorium-232) from the HMI site. Thus, the Maywood material is 300 times the amount of the HMI material. Just this fact alone would indicate that the receipt and processing of the Maywood thorium materials would present a distinct new harm or threat.

IUSA also fails to present a comparison of the processing history and site history of the Maywood materials and the HMI material. Such a comparison is as significant as the difference in tonnage between the Maywood and HMI sites.

The HMI site is not a FUSRAP site or a Superfund site. The Maywood site is a FURSRAP and Superfund site. The HMI material was not generated in connection with Atomic Energy Commission (AEC) or Manhattan Engineer District (MED) contracts. The Maywood Chemical Company, which generated the thorium processing waste, processed material under AEC and MED contracts.

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<sup>29</sup>“As previously stated by IUSA in this proceeding, based on thorium content, the average radiological activity of the Maywood materials is estimated to be comparable to, but less than, that of the materials previously licensed for transport from the HMI.”

<sup>30</sup>Supplemental Pleading at p. 10.

The HMI material is not known to be contaminated with a variety of chemical contaminants as all the material was in one single pile. There were few remedial site or radiological and chemical contamination complexities involved at the Heritage Minerals site, which was remediated under the NRC Site Decommissioning Management Plan (SDMP) program.

The HMI material was continuously under the control of the owner of that material and was never processed chemically. All of the HMI material eventually was licensed by the NRC under a source material thorium license. The HMI material did not result from the processing of ore for its source material content, so it was not considered 11e.(2) byproduct material. The physical processes used at the HMI Minerals Site are known.

This stands in sharp contrast to the Maywood site. The bulk of the Maywood material has been outside the ownership and control of the Stepan Company (the current NRC licensee for the three burial pits) for various periods of time, counted in years and depending on the area that is being considered.

The May materials are scattered over 24 separate sites, each with its own radiological and chemical contaminant history. Over the years, the Maywood materials became contaminated with a variety of chemical contaminants.

The Maywood material was processed chemically and used processes which remain unknown. The material was processed to extract thorium and other rare earth elements.

The U.S. Army Corps of Engineers, within the last couple of weeks, made publicly available an extensive report (3031 pages) with data on the radiological and chemical contamination at the Maywood properties. This May 2001 report is entitled Pre-Design Investigation Report - Cluster Nos. 1-12, MISS-155. There is no indication that IUSA or NRC staff has reviewed this report.

With respect to the thorium content, IUSA submitted a Standard Operating Procedures (SOPs) for High Content Thorium Material in the context of a license amendment request.<sup>31</sup> On December 27, 2000, these procedures were incorporated into IUSA's license by Amendment 17 to License SUA-1358.

As documented by an NRC Inspection Report 40-8681/01-01 (October 16, 2001) for a September 19, 2001 NRC inspection of the Mill, the SOPs for High Content Thorium Material were used at the mill for the HMI material:

The following procedure applies to acceptance of alternate feed material(s) which International Uranium (USA) Corporation (IUSA) determines to *potentially* contain levels of thorium that require that special procedures be followed, which are over and above those required for conventional ores or other alternate feed material. . . This procedure may be amended, subject to approval by IUSA's Safety and Environmental Review Panel (SERP) from time to time, as appropriate to incorporate information and results obtained from the evaluation of health physics surveys, monitoring and controls implemented pursuant to keeping radiological exposures to employees, the public and the environment As Low As Reasonably Achievable (ALARA)<sup>32</sup>.

According the Radioactive Material Profile Record for the HMI materials that was submitted to the NRC in a July 7, 2000, application from IUSA, the HMI materials contained an average concentration of 1,190 pico curies per gram (pCi/g) of thorium-232.

According to IUSA's June 15 application for authorization to receive and process the Maywood materials, the thorium-232 content for the Maywood Site overall ranges from

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<sup>31</sup>See Attachment "C" "Supplemental Information Regarding April 12, 2000, Amendment Request to Process an Alternate Feed Material from W.R. Grace at the White Mesa Mill" (December 18, 2001).

<sup>32</sup> See, International Uranium (USA) Corporation Standard Operating Procedures: High Thorium Content Ore Management,, p.1 (emphasis added).

non-detectable to 3,800 pCi/g with a preliminary estimated overall average of approximately 970 pCi/g. Accordingly, it is reasonable to conclude that the SOPs for the handling and disposal of high thorium content material of at the mill would be applied to some, if not all of the Maywood materials.

Such procedures used at the mill for the receipt of the HMI materials, as outlined in the October 16 Inspection Report, are set forth in the Heritage Ore Radiation Work Permit.

The inspector reviewed activities requiring the issuance of a radiation work permit (RWP) due to a significant potential for workers to be exposed to radioactive material. The only licensed activity that required the issuance of an RWP was the handling of the Heritage ore during the period July 31 - August 4, 2001.

RWP-370 was issued by the RSO to work in conjunction with the SOP, Heritage Alternate Feed Management. The inspector reviewed the RWP and the SOP for the Heritage activity. The RSO explained that personnel conducting the Heritage operation received training on the RWP and the SOP. The inspector reviewed the training records of the workers who signed onto RWP-370 and determined that they were adequately trained. RWP-370 required personnel to don protective equipment such as full face respirators, coveralls, and rubber gloves.

The inspector reviewed the results of airborne radioactivity samples that were collected during the Heritage work. With the exception of one air sample that was collected during a windstorm, the airborne concentrations were less than the licensee's action level of 25% of the derived air concentration level for the Heritage ore. The licensee had collected breathing zone measurements and analyzed them for radon, uranium, and thorium. Overall, the workers' total effective dose equivalent results were less than 1% of the 5,000 millirem annual limit specified in 10 CFR 20.1201.

Therefore, much, if not all, of the Maywood material that would be received at the mill would

require special handling procedures. Prior to the receipt of the HMI materials, no such stringent requirements were implemented, because the material previously authorized for receipt at the mill contained little, if any, thorium-232. The HMI thorium materials are 1/300 the amount of the Maywood thorium material that IUSA proposes to receive at the mill.

The SOPs for the Handling of High Thorium Content Material contradict the statement by IUSA in the telephonic conference that being near the materials or cleaning them up would not require people to wear special suits, and that you just put a front end loader there and pick up the materials and put it a truck<sup>33</sup>.

The enormous volume of the Maywood materials, even if cut in half, and the extra necessary precautions for High Thorium Content Material supports the assertion that the thorium material from the Maywood site presents a potential for harm done that has not been previously encountered by Petitioner.

IUSA's reliance on NRC NUREG-0170 is puzzling since IUSA failed to provide a page number or to further cite it. NUREG-0170, dated December 31, 1977, is entitled, Final Environmental Statement on Transportation of Radioactive Materials by Air and Other Modes. This is in two volumes and approximately one thousand (1,000) pages, something which is not readily available in southeastern Utah<sup>34</sup>. Accordingly, Petitioner requests guidance to the relevant page numbers.

In addition, NUREG-170 was issued in 1977, prior to the Uranium Mill Tailings Radiation

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<sup>33</sup> Transcript, p. 42, l. 14-17.

<sup>34</sup> Per information in NRC public document room and research on the NRC Bibliographic Retrieval System (BRS) database.

Control Act of 1978 (UMTRCA), which amended the Atomic Energy Act of 1954. It was the UMTRCA legislation that gave the NRC regulatory responsibility for uranium mill tailings. Most of the regulations in 10 C.F.R. that apply to the White Mesa Mill were promulgated subsequent to 1977. NUREG-170, therefore, appears inapplicable to the current situation

In sum, the need for detailed data is critical to any determination regarding the hazard or threat that the radiological and chemical constituents present if dispersed into the environment in Cisco, Moab, Monticello, Blanding or White Mesa. This is especially true because the material will be stored for an undetermined period of time prior to being at the mill as well as after being processed or disposed of at the mill. Such radiological and chemical constituents, if known, might indicate that such materials would produce additional distinct harm or threat above and beyond that involved in the prior activities, beyond what has been discussed above.

Without the knowledge of what exactly what the material is comprised of (and that knowledge cannot be obtained from IUSA's application, as supplemented) there is no way of knowing with complete particularity and specificity, whether the listed hazardous wastes commingled with radiologically contaminated materials from each of the Maywood properties.

Without the knowledge of what exactly what material is, there is no way of knowing with complete particularity and specificity how these material will impact the ground water at the Maywood site as the materials accumulate, along with other materials, in an unlined and unprotected area for an undetermined period of time.

Without that knowledge there is absolutely no way of determining whether the material will have no significant impact harm done above and beyond what has already gone before.

Finally, if the NRC doesn't know the levels of radiological contamination or the amount and

kind of chemical contamination in the Maywood materials, how can a determination be made that there will be no significant impact?

#### **IV. CONCLUSION**

Information provided by IUSA in the December 5 submittal and the information that was provided by IUSA in their June 15 application, as supplemented on June 22 and August 3, does not tell the whole story and does not support IUSA's conclusion that the Maywood material does not present any additional or incremental risk of harm to above and beyond that in prior activities.

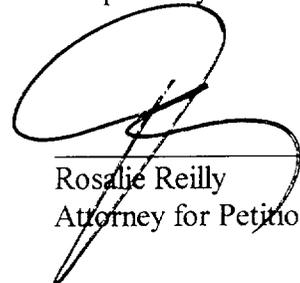
What is known is that as a result of the June 15, 2001 application, truck traffic will be increased more than 250% of the amount of non-ore materials that have been received by the mill to date. In looking at the impact of this increase, IUSA has not addressed the fact that the area is a heavily visited, international tourist site, it has not addressed the upcoming activities that will, in turn, impact the proposed routes; it has not taken into account the seasonal and local hazard nor has it acknowledged that there is no readily available haz-mat team. By taking these variables into account, an increase in truck traffic results in a distinct new harm or threat above and beyond that involved in prior activities.

Furthermore, what is also known is that the Maywood material is a non-ore material that has been stored at an FUSRAP and Superfund site. This history and contamination of this material is not documented nor is it understood other than in vague, general manner. Yet, based upon the fact that the Maywood product is thorium material, it will require special procedures 'over and beyond those required for conventional ores or other alternate feed materials'. Finally, it poses a greater risk of harm than any other material previously received at the mill for processing and disposal, since the handling of the Maywood thorium material at the mill, and/or the clean up of any material as the

result of an accident, would require additional procedures that would be protective of the health and safety of the workers involved, and protective of the public's health and safety and the environment.

DATED this 24<sup>th</sup> day of December, 2001.

Respectfully submitted:



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Rosalie Reilly  
Attorney for Petitioner Sierra Club

# **ATTACHMENT “A”**

GJO-2001-269-TAR  
MAC-MOA XX.XX

## Moab Site Project

# Preliminary Plan for Remediation DRAFT

Photo by Christopher Tomlinson

October 2001



Prepared for U.S. Department of Energy Grand Junction Office  
under DOE Contract Number DE-AC13-96GJ87335.  
Approved for public release; distribution is unlimited.



**Moab Site Project**

**Preliminary Plan For Remediation**

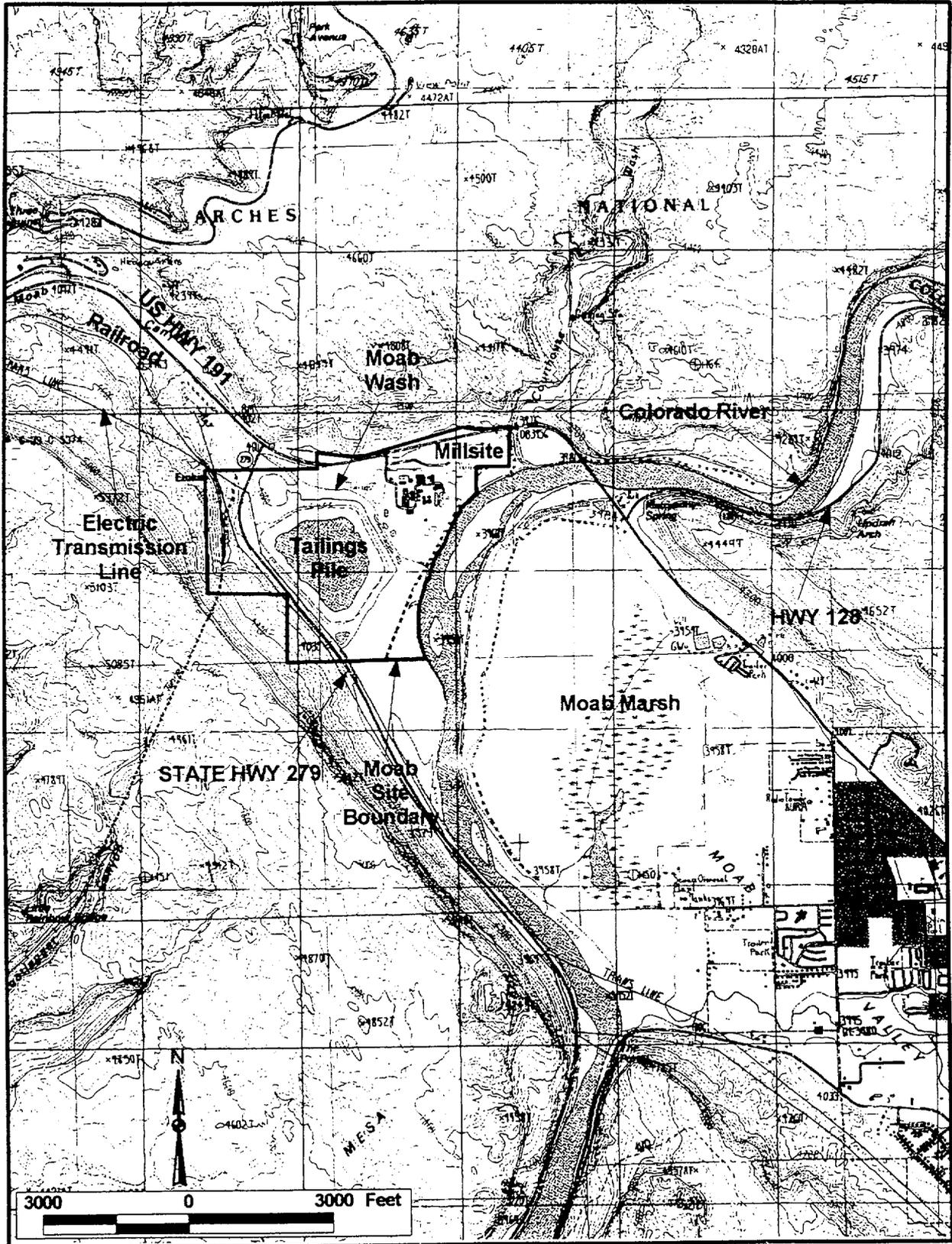
**DRAFT**

**October 2001**

Prepared for  
U.S. Department of Energy  
Grand Junction Office

Project Number MOA-999-0003-00-000  
Document Number X0000402

Work Performed Under DOE Contract Number DE-AC13-96GJ87335  
Task Order Number MAC02-16



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Figure 1-2. Moab Site and Surrounding Area

(EPA 1997). Oak Ridge National Laboratory (ORNL) has successfully demonstrated a Transportable Vitrification System for ex situ treatment of contaminated soils (DOE 1998). An in situ pilot test at Brookhaven National Laboratory in 1996 was less successful, and, in the words of the report on that test, "raised concerns about the effectiveness of ISV [in situ vitrification]" (DOE 2001b).

The quantities of wastes treated by vitrification have been small compared with the volume of contaminated tailings and soils at Moab. The ORNL ex situ demonstration (DOE 1998) treated about 8 tons of mixed waste, and the Parsons/ETM project (EPA 1997) treated approximately 3,000 cubic yards of soils and sediment. The estimated volume of solid material at the Moab site is 8.8 million cubic yards of material.

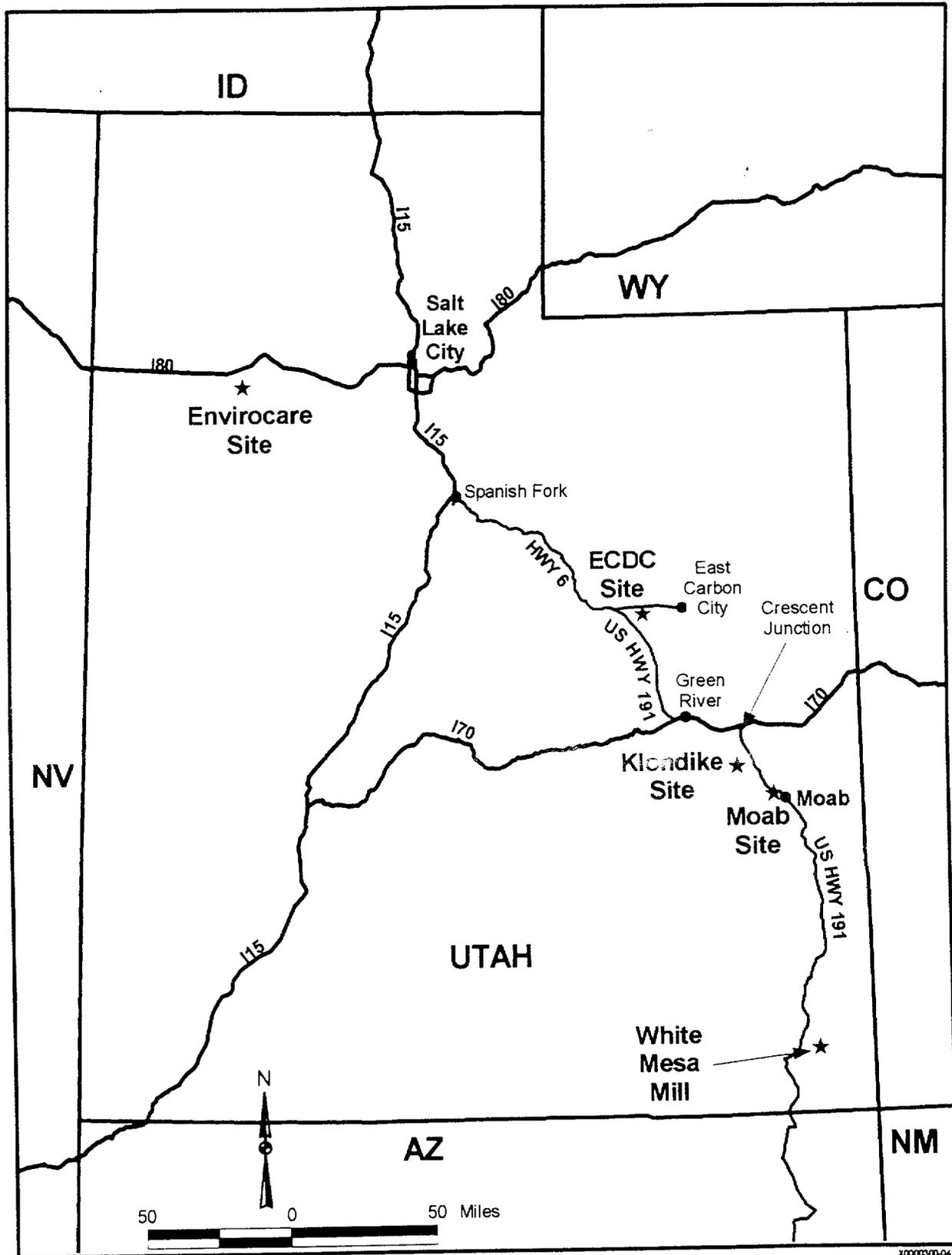
### 2.1.3 Off-Site Disposal and Processing Alternatives

Three off-site disposal sites were considered for evaluation. A relocated site would consist of constructing a new disposal cell on public land. Several potential locations are available for off-site disposal. Only one site, considered to be representative, is evaluated in this document, and it is referred to as the relocated site. For the purposes of this report, the relocated site is about 17 miles northwest of Moab and is also referred to as the Klondike site. The other two off-site locations considered here, the Envirocare and ECDC sites, are two currently operating private disposal sites that could potentially receive the mill tailings. In addition to these off-site disposal options, off-site processing at the White Mesa mill near Blanding, Utah, was also considered. Figure 2-2 presents the locations of all three disposal sites, the processing location, and the Moab site.

#### Off-Site Disposal

Excavation activities and support facilities required for transporting the tailings from the Moab site were assumed to be the same for all off-site disposal alternatives. For all alternatives, rail cars would be the initial method used to transport the tailings. A 1,500-ft railroad spur for loading rail cars would be constructed parallel with the main rail line. A covered conveyor system approximately 1,000 ft long would be constructed from the tailings pile north across State Highway 279 to a train loadout station that would be constructed on the rail siding. Construction support facilities would be required at the Moab site and would partially consist of field office trailers, decontamination facilities, access control fencing, material laydown yard, construction water supply, and equipment maintenance yard. Storm water runoff control features would be constructed before any excavation and would be maintained for the duration of construction.

An estimated 11.9 million tons (8.8 million cubic yards) of contaminated tailings would be removed from the Moab site. This total consists of the pile, which is estimated to contain 10.5 million tons; the subpile soil (assumed to be 2 ft thick) and areas adjacent to the pile that are estimated to contain 800,000 tons; and an estimated 600,000 tons of soil that was placed on top of the pile to assist in the pile dewatering project. The pile would then be excavated and moved to the existing rail line via a covered conveyor. The tailings would be loaded into open-topped gondola railroad cars and covered with automatic tarping devices or sprayed with a surfactant to prevent tailings from blowing out of the rail cars. The gondola cars would be transported on mostly existing Union Pacific tracks to the disposal site. Contaminated mill debris too large for the conveyor system would be transported by truck to the disposal site on state and interstate highways.

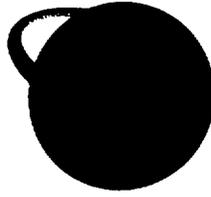


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X0000300-04

Figure 2-2. Potential Off-Site Disposal and Processing Locations for Tailings From Moab Site

# **ATTACHMENT “B”**



May 10, 2001

Ms. Kimberly Schappert, Chair  
**Grand County Council**  
125 E. Center Street  
Moab, Utah 84532

RE: Cisco Wash Bridge Agreement

Dear Ms. Schappert:

MHF Logistical Solutions, Inc. (MHF-LS) has committed to making a consistent effort to keep the Grand County Council apprised of our activities at our Cisco, Utah facility. We have enjoyed developing relations with the council and the interested constituents of Grand County over the past 5 years and hope to be a part of the community for some time to come.

Relating to current activity, our two Tonawanda, NY projects are still active. The Ashland I project is nearly completed with only a few dozen loads left to ship. We anticipate this project will be complete by early to mid June 2001. The second project (Linde) has slowed considerably. Over the past few months the Linde project has shipped approximately 20 containers per day. This pace will slow to an average of 12 containers per day in the coming days and will remain at that pace for the foreseeable future.

What all of this means is that during the summer tourist season Moab will see a significantly reduced fleet of trucks carrying loads to the White Mesa Mill from the Cisco location.

At this time it is difficult to predict when the Linde project will finish. The volumes have the potential to grow beyond original scope a little and when coupled with the slowed shipping we could be extending the life of the project until the end of 2001. I feel that we could safely extend our Cisco Wash Bridge permit until December 31, 2001 necessitating a six (6) month extension from the June 2001 renewal date. Based on the current contract arrangement that would require an additional \$5,000.00 fee for that period.

MHF-LS requests the County kindly forward, to my attention, a letter extending our use of the bridge. The conditions of use will continue under the current arrangement for the period June through December 2001 for consideration noted payable prior to the end of June 2001.

**MHF**  **LOGISTICAL SOLUTIONS**

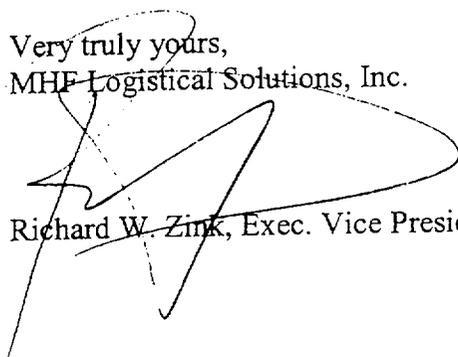
129 McCarrell Lane, Zelienople, PA 16063 Phone 724.452.9300 Fax 724.452.3753 www.mhfls.com

Page two  
Cisco wash bridge

As discussed at our last meeting MHF-LS continues to pursue other projects that will require the use of the Cisco Wash Bridge. At this time, no contracts are pending or proposed delivering materials to the White Mesa Mill however. As committed, MHF-LS will consult with the Grand County Council as the development of the future work dictates.

Thank you for your interest in MHF-LS and our operations in Utah. Please address any correspondence to the undersigned at 724/452-9300 ext: 5524.

Very truly yours,  
MHF Logistical Solutions, Inc.



Richard W. Zink, Exec. Vice President

RWZ/edp

CC: Cliff Bright, MHF-LS  
Jim Christafano, MHF-LS

**COUNTY COUNCIL**

Bart Leavitt, Chair  
Ken Ballantyne, Vice Chair  
Peter Haney  
Bill Heddan  
Dale Mosher  
Frank Nelson  
Ray Pene  
Telephones: 801-259-1346

**COUNTY ADMINISTRATOR**

Earl W. Stres  
Telephone: 801-259-1346  
Fax: 801-259-2574

June 10, 1999

Mr. Richard Zink  
MHF Logistical Solutions, Inc.  
300 W Grandview Blvd.  
Zelienople, Pennsylvania 16063

RE: Weight limit on 'Cisco Wash Bridge', located 1 mile west of Cisco, Grand County, Utah on Old Highway 6/50. UDOT #09013D.

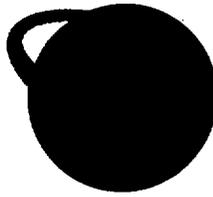
Dear Mr. Zink:

Grand County is willing to waive the weight limit of Thirty Tons for use by MHF-LS and its subcontractors, as proposed in your letter of May 4, 1999, for a yearly fee of \$10,000.

All loads must be legal and MHF-LS must accept the findings of the UDOT Structures Division inspectors. MHF-LS is responsible for damage to the bridge caused by them or their subcontractors.

Sincerely,

David Vaughn  
Assistant Road Supervisor



May 4, 1999

Mr. Dave Warner  
**Grand County Road Department**  
125 East Center  
Moab, Utah 84532

RE: Weight limit on 'Cisco Wash Bridge', located 1 mile west of Cisco, Grand County, Utah on Old Highway 6/50, UDOT #019013D.

Dear Mr. Warner:

MHF-LS is being contracted to transport Uranium Soil to the IUC White Mesa Mill in Blanding, Utah. The shipping campaign is slated to commence in mid June 1999 and as before will utilize semi-trailer trucks to deliver the freight from our Cisco, Utah rail spur to the mill.

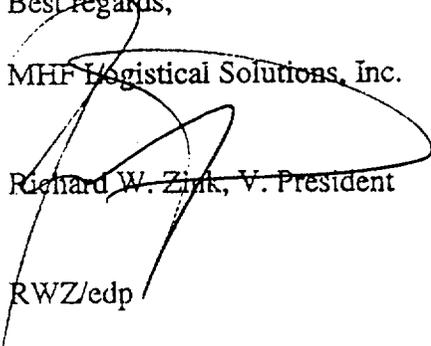
MHF-LS requests the same waiver granted by your office previously with regard to the weight limit on the 'Cisco Wash Bridge' identified above. The bridge is marked for a thirty-ton weight restriction and our trucks will gross nearly 40 tons.

As before MHF-LS will ensure all loads are within legal weight limits and will accept the findings of the UDOT Structures Division inspectors.

We appreciate the assistance Grand County has been at making our operation a success. Please address any questions regarding this correspondence to the undersigned at 724/452-9300 ext. 5524.

Best regards,

MHF Logistical Solutions, Inc.

  
Richard W. Zink, V. President

RWZ/edp

**MHF** ● **LOGISTICAL SOLUTIONS**

Dave Warner  
Supervisor



Dave Hutchinson  
Administrator/Asst. Supervisor

## Grand County Road Department

125 East Center • Moab, Utah 84532

Office South Hwy. 191 • (801) 259-5308 • Shop (801) 259-5708 • FAX (801) 259-2959

September 30, 1997

Mr. Richard W. Zink  
MHF Logistical Solutions, Inc.  
300 W. Grandview Blvd.  
Zelienople, Pennsylvania 16063

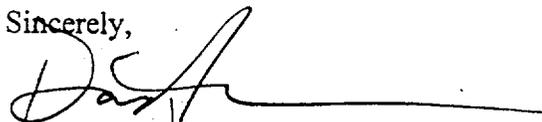
RE: Weight limit on 'Cisco Wash Bridge', located 1 mile west of Cisco, Grand County, Utah on Old Highway 6/50. UDOT #019013D.

Dear Mr. Zink:

Grand County is willing to waive the weight limit of Thirty Tons for use by MHF-LS and its subcontractor Tri State Motor Transit as proposed, in your letter to Grand County dated September 17, 1997.

All loads must be legal and MHF-LS must accept the findings of the UDOT Structures Division inspectors.

Sincerely,



Dave Warner

# **ATTACHMENT “C”**

## Uranium and Thorium Activities in Licensed Ores and Products

| Mill Feed & Production                    | Description                | Tons             | Uranium Isotopes Average (Wt% U) | Uranium Isotopes Activity Average (pCi/g) | Total Uranium Inventory (Ci) | Thorium Isotopes Activity Average* (pCi/g) | Thorium Inventory* (Ci) | Estimated Total Activity of U and Th (pCi/g) | Estimated Total Inventory of U and Th (Ci) |
|---|----------------------------|------------------|----------------------------------|---|------------------------------|--|-------------------------|--|--|
| Linde (2)                                 | Soil                       | 140,400          | 0.07%                            | 469                                       | 59.8                         | 40   | 5                       | 509  | 65   |
| Ashland 1 (3)                             | Soil                       | 108,810          | 0.06%                            | 402                                       | 39.7                         | 238  | 24                      | 640  | 63   |
| Heritage (4)(5)                           | Monazite Sands             | 2,910            | 0.05%                            | 335                                       | 0.89                         | 1,190                                      | 3.1                     | 1,525  | 4  |
| Cabot (6)                                 | Tantalum residues          | 16,828           | 0.343%                           | 2,298                                     | 35.1                         | 473.0                                      | 7.23                    | 2,771  | 42   |
| Natural Ores (7)(8)(9)(10)                | Mill Inception to Date     | 3,846,667        | 0.310%                           | 2,077                                     | 7,254                        | 1,024                                      | 3,576                   | 3,101  | 10,830                                     |
| Ashland 2 (11)                            | Soil                       | 43,981           | 0.01%                            | 67  | 2.7                          | 6,950                                      | 278                     | 7,017  | 280  |
| Cameco (12)                               | KF product                 | 1,966            | 4.6%                             | 30,800                                    | 55.0                         | 3,170                                      | 5.7                     | 33,970                                       | 61   |
| Allied Signal (13)(14)                    | Calcium Fluoride           | 2,343            | 3.0%                             | 20,100                                    | 43                           | 14,448                                     | 30.74                   | 34,548                                       | 74   |
| Cameco (15)                               | Phosph. regen. product     | 557              | 8.0%                             | 53,600                                    | 27.1                         | -  | -                       | 53,600                                       | 27   |
| Cameco (16)                               | Calcined product           | 2,197            | 6.53%                            | 43,751                                    | 87.3                         | 16,472                                     | 32.86                   | 60,223                                       | 120  |
| Allied Signal (17)                        | KOH solution recovery      | 1,526            | 26.8%                            | 179,560                                   | 249                          | -  | -                       | 179,560                                      | 249  |
| Rhone-Poulenc (18)(19)                    | Uranyl nitrate hexahydrate | 17               | 50%                              | 335,000                                   | 5.0                          | 0.10                                       | 0.00                    | 335,000                                      | 5  |
| Cameco (20)                               | UF4 with filter ash        | 10               | 65%                              | 435,500                                   | 3.9                          | 0.10                                       | 0.00                    | 435,500                                      | 4  |
| Uranium Product (21)                      | Yellowcake                 | 14,153           | 72%                              | 482,400                                   | 6,199                        | -  | -                       | 482,400                                      | 6,199                                      |
| Nev. Test Site (22)                       | Cotter Concentrate         | 363              | 16.00%                           | 107,200                                   | 35.3                         | 628,026                                    | 207                     | 735,226                                      | 242  |
| <b>CURRENT ESTIMATED FEED TOTAL</b>       |                            | <b>4,182,728</b> |                                  |   | <b>14,097</b>                |  | <b>4,169</b>            |  | <b>18,266</b>                              |
| <b>CURRENT ESTIMATED WEIGHTED AVERAGE</b> |                            |                  |                                  | <b>3,712</b>                              |                              | <b>1,098</b>                               |                         | <b>4,809</b>                                 |  |

\* Total thorium activity is stated to the degree the information is available.

**Notes:**

- (1) Appendix A includes general calculations for conversion of units.
- (2) Based on Linde Amendment Application, IT pre-excavation field data 7/00, and RMPR (See Appendix B)
- (3) Tonnage based on current estimates from the Ashland site, other information based on License Amendment Application, IT pre-excavation field data and RMPR (See Appendix C)
- (4) Based on Heritage License Amendment Application and RMPR (See Appendix D)
- (5) Thorium estimate provided by S. Fields of 4,000 pCi/g is for only a portion of the material being sent to IUC. The value quoted is the estimated average value for all the material.
- (6) Cabot information included in Appendix E.
- (7) Tons and wt% based on Mill production logs (See Appendix F)
- (8) Thorium values estimated by the Mill's Radiation Safety Officer (See Appendix F)
- (9) Mill head grades typically range from 0.11% to 0.86% uranium or 1,100 to 8,603 pCi/g.
- (10) Only a portion of the natural ores were transported through Moab, Utah.
- (11) Production based on Mill production report, uranium and thorium information contained in Appendix G.
- (12) KF data is included in Appendix H.
- (13) Data from Mill production logs only for production in 1996 and 1999, data for previous runs is not available (See Appendix I).
- (14) Thorium content based on discussions with generator (See Appendix I)
- (15) Tonnage based on Mill receipts. Uranium based on License Amendment information (See Appendix J)
- (16) Tonnage based on Mill production and receipts. Head grade based on actual production estimates. (See Appendix K)
- (17) Tonnage and assays based on Mill production. Thorium content based on information from generator. (See Appendix L).
- (18) Based on USNRC Technical Evaluation Report for Energy Fuels Nuclear License Amendment #41 and Rhone Poulenc Data (12/21/94). See Appendix M.
- (19) This material was not trucked through Moab, Utah.
- (20) No material has been received at the Mill to date. The information is based on the License Amendment information (See Appendix J).
- (21) Tonnage based on actual Mill production logs and average grade based on Mill data (See Appendix F). A majority of the yellowcake is shipped through the Moab area.
- (22) Values calculated by K. Schiager in letter of 7/10/97 and tonnage based on actual Mill receipts. (See Appendix N.)

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Alan S. Rosenthal, Presiding Officer  
Dr. Richard R. Cole, Special Assistant

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|                             |   |                           |
|-----------------------------|---|---------------------------|
| In the Matter of            | * | Docket No. 40-8681-MLA-10 |
|                             | * |                           |
| INTERNATIONAL URANIUM (USA) | * | ASLBP No. 02-793-01-MLA   |
| CORPORATION                 | * |                           |
|                             | * |                           |
| (White Mesa Uranium Mill)   | * |                           |

---

**CERTIFICATE OF SERVICE**

The undersigned certifies that true and correct copies of the Sierra Club's Response to IUSA's Supplemental Filing in the above-pending matter as well as this Certificate of Service have been served by first-class mail, postage prepaid, this 24<sup>th</sup> day of December, 2001 to the following:

Administrative Judge Alan S. Rosenthal  
Presiding Officer  
Atomic Safety and Licensing Board Panel  
U.S. Nuclear Regulatory Commission  
11545 Rockville Pike, Mail Stop T-3 F23  
Rockville, MD 20852  
and 3203 Kent Street  
Kensington, MD 20895

Atomic Safety and Licensing Board Panel  
U.S. Nuclear Regulatory Commission  
11545 Rockville Pike  
Rockville, MD 20852

Dr. Richard F. Cole  
Special Assistant  
Atomic Safety and Licensing Board Panel  
U.S. Nuclear Regulatory Commission  
11545 Rockville Pike, Mail Stop T-3 F23  
Washington, DC 20852

Office Of the Secretary  
Attn: Rulemaking and Adjudication Staff  
One White Flint North, Mail Stop T-3 F23  
U.S. Nuclear Regulatory Commission  
11555 Rockville Pike  
Rockville, MD 20852

Ms. Donna Metler  
Moab City Manager  
115 West 200 South  
Moab, Utah 84532

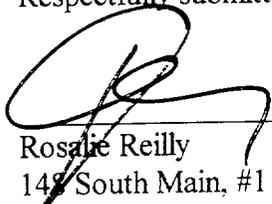
Dennis C. Dambly, Esq.  
Office of General Counsel  
Mail Stop - O-15 D21  
U. S. Regulatory Commission  
Washington, DC 20555-0001

Mr. John Francis Darke  
PO Box 603  
Moab, Utah 84535

Anthony J. Thompson, Esq.  
Law Offices of Anthony J. Thompson, P.C.  
1225 19<sup>th</sup> Street, N.W., 2<sup>nd</sup> Floor  
Washington, DC 20036

DATED this 24<sup>th</sup> day of December, 2001.

Respectfully submitted:

A handwritten signature in black ink, appearing to be 'Rosalie Reilly', written over a horizontal line.

Rosalie Reilly  
147 South Main, #1  
PO Box 404  
Monticello, Utah 84535-0404  
(435) 587-3266  
Facsimile: (435) 587-3649