Draft, but may be released

U.S. NUCLEAR REGULATORY COMMISSION
DOCKET NO. 040-08980
June 11, 2008

~~Draft~~ Environmental Assessment for the Proposed Termination of U.S. Nuclear Regulatory Commission Materials License No. SMB-1541, Issued to Heritage Minerals, Inc. in Manchester Township, New Jersey, and Release for Unrestricted Use

Introduction

The U.S. Nuclear Regulatory Commission (NRC) has prepared this Environmental Assessment for the proposed termination of the Heritage Minerals, Inc. (HMI) materials license number SMB-1541, and the release of the NRC-licensed areas of HMI's Manchester Township, New Jersey site (Heritage) for unrestricted use. HMI was authorized by NRC from January 2, 1991, to decontaminate affected portions of the land and facilities, and to store and transfer natural thorium and natural uranium from past site operations. On March 4, 2005, HMI requested that NRC terminate the license and release the facility for unrestricted use. HMI has conducted surveys of the facility and determined that the facility meets the requirements for release for unrestricted use specified in its NRC-approved Decommissioning Plan (DP). The NRC staff has evaluated the request from HMI and the results of the surveys, performed independent, confirmatory measurements and a quantitative dose assessment, and has developed this Environmental Assessment (EA) in accordance with the requirements of 10 CFR Part 51. The NRC has determined that a Finding of No Significant Impact (FONSI) is appropriate for the proposed action.

The Proposed Action

By letter dated March 4, 2005, HMI has requested to have its NRC Materials License No. SMB-1541 terminated and the site at Mile Marker 41 on Route 70 in Manchester Township, New Jersey released for unrestricted use. HMI stated that no further actions are required to remediate the location. HMI has provided surveys and documentation showing that it has met the decommissioning requirements of its approved DP.

Purpose and Need for the Proposed Action

The proposed action is to have NRC Materials License No. SMB-1541 amended to allow for the release of the Heritage site for unrestricted use and to terminate the license. The licensee is completing the requirements of 10 CFR 40.42(h)(2), which states that a licensee shall request termination of its license upon completion of decommissioning. The NRC is fulfilling its responsibilities under the Atomic Energy Act to make a timely decision on a proposed license amendment for release of facilities for unrestricted use and termination of a license that ensures protection of public health and safety and the environment.

Site Background Information

NOTE: This entire section was re-ordered, using much of the same language as below. Some new information was also added.

~~HMI requested release for unrestricted use of the NRC-licensed areas at the Heritage site as authorized by NRC License No. SMB-1541, and termination of the license. HMI was authorized by the NRC from January 2, 1991 for the possession of radioactive materials resulting from past operations at the site, and for decommissioning of the affected portions of the site. The facility had been used in 1972 to 1990 for the mechanical processing of dredged, native sands to extract various heavy minerals (zirconium and titanium). The native sand also contained natural uranium and monazite (an ore containing natural thorium), which were incidentally concentrated due to the processing operations. A process change in 1989 led to reprocessing of previously-stockpiled tailings (unwanted sands from earlier processing). The resultant waste stream from this process contained sufficient concentrations of natural radioactive material to require an NRC license. 10 CFR, Part 40 "Domestic Licensing of Source Material" defines source material, in part, as ores which contain by weight, one twentieth of one percent (0.05%) or more of uranium, thorium, or any combination thereof. The 10 CFR 0.13(a) cites an exemption to NRC regulations for source material which is by weight less than 0.05% of the mixture, compound, solution, or alloy.~~

~~Although the Heritage site comprises almost 7000 acres, processing activities were confined to approximately 287 acres, and the remainder of the site was not utilized. Within this smaller area, the NRC-licensed areas (those areas involving licensed material), consisted of portions of two mill buildings and a stockpile of approximately 1400 tons of licensed material. The Wet Mill was a three-story steel structure on a 229' X 99' concrete slab. The Dry Mill was also a three-story steel structure, and was situated on a 120' X 95' concrete slab. Both mill buildings have been demolished and only the concrete pads remain. The 1400 tons of stockpiled licensed material was stored within a fenced area. The material has been shipped offsite and the fence removed. Together, the NRC-licensed portions of the site comprise less than one acre.~~

~~*Site Description*~~

~~The Heritage site is predominantly flat, but has been recontoured by surface mining activities. The area is characterized by thick sandy deposits, resulting from surface erosion, water transport, and wind deposition. The sand reaches a depth of 1500 feet, with underlying deposits of stratified clay, silt, sand, and gravel over bedrock that is not encountered until 3000 feet. Two lakes were formed as a result of the mine dredging operations. Groundwater flow occurs from areas located north and west of the site to east and northeast towards the tributaries of the Toms River. The Toms River and its tributaries form the major groundwater discharge zones for the region. Site groundwater is recharged by precipitation and flows unconfined through the permeable underlying sands. The upper most shallow aquifer (Cohansey) is reached at a minimum depth of approximately six feet. The licensee indicated that the shallow aquifer water may not be potable without treatment to remove high iron content. However, deep aquifer water at a depth of a few hundred feet could be more appropriate for drinking.~~

~~The mill and tailings area are relatively free of vegetation, but the remainder of the site is~~

~~covered by shrubs and trees. The current land use of the property is limited to state-required fuel oil remediation. Areas adjacent to the site are predominantly rural and residential. The area also adjoins some creeks, streams, small lakes, and marshy land.~~

Site Operating History

The Heritage site was originally owned and operated by ASARCO, Inc. (ASARCO). In the late 1950s, ASARCO investigated the area around the site for deposits of titanium-bearing minerals. In 1960, ASARCO purchased 7000 acres for the purpose of titanium mineral recovery. In 1968, design and construction of the mineral recovery plant began, and was completed in 1973. Between 1973 and 1982, ASARCO dredged and processed native sands to extract ilmenite, a titanium-bearing mineral. The native sand also contained natural uranium and monazite (an ore containing natural thorium), which were incidentally concentrated due to the processing operations. The mined sand contained mostly (95%) light silica sands, clays, and gravels. The remaining 5% consisted of the titanium-bearing minerals ilmenite, leucozene, and rutile, as well as other heavy minerals, including zircon, thorium, and uranium. 10 CFR, Part 40 "Domestic Licensing of Source Material" defines source material, in part, as ores which contain by weight, one twentieth of one percent (0.05%) or more of uranium, thorium, or any combination thereof. Source material which is by weight less than 0.05% of the mixture, compound, solution, or alloy is exempted from NRC regulation pursuant to 10 CFR 40.13(a).

The ASARCO operation was completely mechanical (i.e. no chemical processing took place). Dredged sands were screened for size and pumped to a Wet Mill, where gravity separation removed the lighter silica from the heavy minerals (concentrate). The Wet Mill was a three-story steel structure on a 229' X 99' concrete slab. The silica was returned to the dredging pond as backfill, and the concentrate was stored on the ground east of the Wet Mill to dewater and be fed into a Dry Mill with front-end loaders. The Dry Mill was a three-story steel structure, and was situated on a 120' X 95' concrete slab. The concentrate pile was continually being added to, graded, blended, and picked up throughout this process. In the Dry Mill, the material was conveyed through dryers and electrostatic and electromagnetic mineral separators. The waste material from the Dry Mill was conveyed via piping back into the Wet Mill, where it was immediately combined with the Wet Mill waste material. These combined tailings were stored in a location north of the Wet Mill, called the Blue Area.

The non-conductor materials (including zircon, thorium, and uranium) were stored on site in a location designated the Gray Area. The ilmenite product was stored until shipment. ASARCO ceased operations in March 1982, and leased the site to another company (Humphrey's Gold, Inc.) that wished to process the Gray Area material for commercial grade zircon. The company leased the site for six months, and conducted unsuccessful pilot tests for one month. All of the processed and waste material was returned to the Gray Area.

From the end of the Humphrey's Gold lease until 1986, ASARCO maintained the site in standby. In 1986, HMI purchased the property and leased the plant to Mineral Recovery, Inc. (MRI). ~~The~~ MRI successfully processed the Gray Area material for its zircon content by sending it through a smaller dryer. ~~The waste material from this process was stored in a location north of the Wet Mill, called the Blue Area. The~~ MRI operated the site from October 1986 until August 1987, when HMI assumed control over site operations, and processed the remaining Gray Area material. ~~Tests indicated that the stored Blue Area material also contained sufficient amounts of the desired minerals, and HMI began processing it.~~

~~HMI's reprocessing of the Blue Area material resulted in uranium and thorium concentrations in excess of 0.05% by weight (specifically, after the light fraction had been removed in the Wet Mill). An NRC inspection performed on January 12, 1989, identified that HMI was concentrating source material, and that an NRC license was required. Following the inspection, HMI separated the source material from all other waste material, and stored this sand under tarps. Later, HMI erected a fence around this stockpile area. On March 10, 1989, HMI submitted an application for an NRC source material license.~~

On January 12, 1989, NRC conducted an inspection of the HMI site in response to an allegation that the processing operation was concentrating source material. NRC samples of the waste streams identified the presence of source material, in excess of 0.05% by weight (specifically, after the light fraction had been removed in the Wet Mill), and that an NRC license was thus required. NRC also required that HMI segregate the source material from all other product and waste streams. Accordingly, HMI began storing the Wet Mill waste material in a stockpile area designated the Monazite Pile.

On March 10, 1989, HMI submitted an application for an NRC source material license. HMI began processing the Blue Area material after tests indicated that it contained sufficient amounts of saleable minerals. After HMI initiated processing of the Blue Area material, it installed a process change, by which the waste material from the Dry Mill and the waste material from the Wet Mill were no longer combined. Instead, HMI segregated and separately stockpiled the waste material.

Before the license was issued, reduced demand and prices for zircon caused HMI to suspend all processing operations. On August 23, 1990, HMI informed the NRC that the plant would be placed in standby until market conditions improved. In the meantime, HMI stated that they would initiate decontamination of the plants and equipment. Between 1989 and the cessation of plant operation, HMI had processed 200,000 tons of Blue Area material. As a result, an estimated 1000 tons of source material had been segregated and stockpiled for disposal. HMI never restarted processing operations. On January 2, 1991, the NRC issued HMI its 10 CFR Part 40 source material license (NRC License No. SMB-1541), authorizing the possession of radioactive materials resulting from past operations at the site, and the decommissioning of the affected portions of the site.

Although the Heritage site comprises almost 7000 acres, processing activities were confined to approximately 287 acres, and the remainder of the site was not utilized. Within this smaller area, the NRC-licensed areas (those areas involving licensed material), consisted of portions of two mill buildings and a stockpile of approximately 1400 tons of licensed material. Both the Wet Mill and the Dry Mill buildings have been demolished and only the concrete pads remain. The 1400 tons of stockpiled licensed material was stored within a fenced area. The material has been shipped offsite and the fence removed. Together, the NRC-licensed portions of the site comprise less than one acre. HMI requested release for unrestricted use of the NRC-licensed areas at the Heritage site, and termination of the license.

Site Description

(NOTE: The language here did not change, just the location of this section)
The Heritage site is predominantly flat, but has been recontoured by surface mining activities.

The area is characterized by thick sandy deposits, resulting from surface erosion, water transport, and wind deposition. The sand reaches a depth of 1500 feet, with underlying deposits of stratified clay, silt, sand, and gravel over bedrock that is not encountered until 3000 feet. Two lakes were formed as a result of the mine dredging operations. Groundwater flow occurs from areas located north and west of the site to east and northeast towards the tributaries of the Toms River. The Toms River and its tributaries form the major groundwater discharge zones for the region. Site groundwater is recharged by precipitation and flows unconfined through the permeable underlying sands. The upper most shallow aquifer (Cohansey) is reached at a minimum depth of approximately six feet. The licensee indicated that the shallow aquifer water may not be potable without treatment to remove high iron content. However, deep aquifer water at a depth of a few hundred feet could be more appropriate for drinking.

The mill and tailings area are relatively free of vegetation, but the remainder of the site is covered by shrubs and trees. The current land use of the property is limited to state-required fuel oil remediation. Areas adjacent to the site are predominantly rural and residential. The area also adjoins some creeks, streams, small lakes, and marshy land.

Site Licensing

The original HMI license application, submitted on March 3, 1989, requested NRC approval to possess source material that was incidentally created through the processing of site native soil. Before the license was issued, HMI ceased all processing activities, and the only source material on site was the stockpiled waste and any residual material within the Wet and Dry Mill equipment and structures. The original processing operations performed at the site from 1973-1989 had also resulted in elevated concentrations of natural thorium and natural uranium in the material stored in the Gray Area and in the Blue Area, and periodically staged and re-graded around the mill buildings. Because these concentrations had not exceeded 0.05% by weight, however, they were exempt from NRC requirements, as specified in 10 CFR 40.13(a).

On January 2, 1991, the NRC issued License No. SMB-1541 authorizing Heritage Minerals, Inc. to possess the stockpiled source material and to perform decommissioning of the impacted areas of the site. The license required decontamination of the impacted portions of the mill buildings and of the stockpiled source material. Plant buildings and equipment were specified to be decontaminated so that fixed and removable contamination met NRC release limits for unrestricted release stated in NRC's Office of Nuclear Materials Safety & Safeguards (NMSS) Policy and Guidance Directive FC 83-23, "Termination of Byproduct, Source, or Special Nuclear Material Licenses" (November 4, 1983). The stockpile was required to be remediated to 10 pCi/g above background for total thorium and uranium, based on Option 1 of the Branch Technical Position "Disposal or Onsite Storage of Thorium or Uranium Wastes from Past Operations" (October 23, 1981). The cleanup criteria were derived from the concentration-based decommissioning guidelines in place at the time.

The NRC licensing and oversight of the Heritage site acknowledged that above-background concentrations of natural thorium and uranium existed in sands placed and graded around the plant during previous processing operations. However, in accordance with 10 CFR 40.13(a), material "in which the source material is by weight less than one-twentieth of 1 percent (0.05%) of the mixture, compound, solution, or alloy," is exempt from NRC regulations, so decommissioning of the site did not require removal of this exempt material. State regulations may necessitate additional remediation at the site to remove this other concentrated material.

The complexity of this site, where NRC-regulated material and potentially-state-regulated material are in such close proximity (and layered over each other in some locations), prompted NRC to add the Heritage site to its Site Decommissioning Management Plan (SDMP) in April 1992. The SDMP was created in 1990 to effect the decommissioning of sites with unique concerns warranting special attention by the Commission.

On November 3, 1997, HMI submitted a Decommissioning Plan (DP) describing final cleanup and disposal of the stockpiled source material and remediation of mill buildings and equipment. The DP specified the decommissioning cleanup levels and described activities and methods for protecting workers and the public during removal of the waste and survey and decontamination of the mill buildings and equipment. NRC's assessment of the DP was published in the *Federal Register* on September 1, 1999 (64 FR 47872 - 47877), and the plan was formally approved on October 19, 1999.

Published in 2001, 10 CFR 20 Subpart E ("The License Termination Rule" (LTR)) bases the termination of NRC licenses and the release of facilities for unrestricted use on meeting residual radioactivity levels (distinguishable from background) that do not result in a Total Effective Dose Equivalent to an average member of the critical group above 25 millirem (mrem) per year. The rule was a change from prior practice, which based release of a site for unrestricted use on meeting specific contamination cleanup levels. When the LTR was published (62 FR 39088), a provision was included (10 CFR 20.1401(b)(3)) to "grandfather" sites with DPs submitted to the NRC before August 20, 1998 and approved by August 20, 1999 (the approval date was extended to August 20, 2000 for twelve sites, including Heritage Minerals, in SECY-99-195). Decommissioning of grandfathered sites is performed in accordance with the SDMP Action Plan (SECY-92-106), under which cleanup criteria are based on residual contamination levels. Remediation is considered to be complete when the actions described in the approved DP are completed. When a grandfathered site is being considered for release for unrestricted use, a dose analysis must be performed to determine if the site falls below the 25 mrem/year dose criterion in the LTR. If the dose criteria are not met, Commission approval must be obtained prior to termination of the license and release of the site for unrestricted use. The results of the dose analysis for Heritage are described in a later section of this EA.

Site Decommissioning

The Heritage site has undergone various stages of decontamination and decommissioning (D&D). The first such activities took place between September 1990 and January 1991, and consisted of dismantling the Wet Mill equipment, and washing down the mill structure and equipment until surface readings were decreased to 20 mrem/hr. High pressure water and steam were then used, and any residual sand was physically removed from the equipment. The Dry Mill structure and equipment was also dismantled, but was cleaned using blown air, dusting, and sweeping. Sands recovered from these operations were added to the stockpiled source material for disposal. On May 22, 1991, NRC performed confirmatory contamination surveys and identified no loose contamination on equipment within the mill buildings.

In March 2001, HMI hired a contractor to perform site D&D. By October 2001, the stockpiled

source material had been loaded and shipped to International Uranium Corporation (IUC) in Blanding, Utah. In addition to the 1400 tons of stockpiled material, the contractor excavated soil underneath the pile to reach the 10 pCi/g thorium and uranium cleanup criterion. During this campaign, Heritage shipped approximately 3,385 tons of soil from the site. HMI also surveyed and decontaminated both the wet mill and the dry mill buildings and equipment. Surveys and soil samples performed by HMI indicated that remaining soil in the source material storage area met the 10 pCi/g total thorium and uranium criterion. Surveys of the mill buildings and equipment showed that residual contamination levels also fell below the NRC release criteria. A description of decommissioning activities and the results of these surveys were submitted by HMI as the Final Status Survey (FSS) for the Heritage site on November 25, 2001.

The NRC confirmatory surveys of the site, performed on December 10-13, 2001, showed that residual contamination exceeding the unrestricted release criteria remained in the mill buildings and on equipment. In addition, soil samples taken from the stockpile area and around the mill buildings identified locations with remaining source material concentrations greater than the 10 pCi/g release criterion. Additionally, some of the locations around the mill buildings had source material concentrations exceeding 0.05% by weight.

On April 23, 2002, NRC and HMI met to discuss the results of the confirmatory survey and the actions that would be required to complete site remediation. HMI explained that the identification of concentrated thorium and uranium around the mill buildings was understandable given the pre-licensing operations at the site. As described in the *Site Licensing* section above, when portions of the plant process were shut down for repairs, the sand from the other process trains would be staged around the mill buildings. These piles were continually added to and graded around the site. HMI maintained, and NRC agreed, that this practice had resulted in concentrating the source material to levels below 0.05% by weight, which were not regulated by NRC. HMI further maintained that this process had created "pockets" of soil where the source material concentration exceeded 0.05% by weight. This material was considered "licensable" because it exceeded 0.05% by weight concentration of source material, but was concentrated to this amount by the staging and regrading of lower concentrations of source material during, pre-NRC licensed activities.

In a letter dated November 22, 2002, HMI prepared a mass balance report showing that while only 1400 tons of source material had been created at the site, approximately 3385 tons of soil had been shipped to IUC, thus ensuring that all licensed material had been removed. HMI also committed to remediating the "licensable" soil pockets, and proposed to perform a new characterization survey of the soil areas around the mills and stockpile area to identify any such material. On May 6, 2003, HMI submitted final remediation plans to the NRC, which included total demolition of the mill buildings and remediation of seventeen identified soil pockets of licensable material.

Regardless of the time period during which the material had been placed around the site, NRC determined that HMI was responsible, under the NRC license, to remove all soil pockets where uranium and thorium concentration exceeded the exempt concentration in 10 CFR 40.13(a). In a letter dated May 19, 2003, NRC concurred with HMI's description of the licensable soil pockets, and required that they be remediated to 10 pCi/g total thorium and uranium.

The contaminated soil pockets were subsequently excavated, sampled, and backfilled with clean sand. The excavated soil (313 tons) was packaged and shipped to IUC. HMI demolished

both mill buildings and decontaminated the equipment and pads using power washers. Only the concrete slabs remain of the mill buildings. Residual sand from the steel cleaning processes which had collected on the slabs was collected and staged for later disposition. Uncontaminated support buildings, used for equipment storage and office space, were left intact.

On September 8-10, 2003, NRC performed a second confirmatory survey. This survey identified some elevated contamination on the mill pads, which were immediately decontaminated by HMI. These activities completed remediation of the mill pads. The NRC also performed a surface scan of the soil around the mill pads and the stockpile area. Soil samples were obtained where the scans identified elevated levels of contaminants, and the sample results identified additional pockets of licensable material in previously-unexcavated areas.

On June 30, 2004, HMI proposed a new plan to complete remediation activities which included defining the site boundary within which NRC-licensed operations took place. The boundary encompassed the contaminated soil pockets identified by the NRC confirmatory survey. This bounded area was determined based on historical site surveys, physical boundaries, and the performance of a walkover gamma survey. HMI committed to remediating all licensable soil pockets within the bounded area. The proposal also requested disposition of the approximately 400 tons of staged soil which had been recovered from demolition of the mill buildings. On November 17, 2004, the NRC accepted the defined boundary and the proposed remediation activities, and required that the 400 tons of soil be considered licensed material and managed in the same manner as the stockpiled source material.

In mid-December 2004 and mid-January 2005, HMI excavated the soil pockets and shipped the soil to IUC (both the excavated soil as well as the 400 tons of staged soil). On December 14-15, 2004 and January 20, 2005, NRC and HMI obtained side-by-side soil samples from the newly-excavated pockets. After the samples were obtained, the pockets were backfilled with clean soil. The NRC inspectors then performed a gamma walkover survey of the area encompassed by the boundary identified in the June 30, 2004 letter. The survey verified that no licensable material remained within this area. Comparison of analytical results from HMI's and NRC's respective samples demonstrated agreement and attainment of the 10 pCi/g release criterion. Accordingly, the NRC considers remediation activities at the site to be complete.

On March 4, 2005, HMI requested termination of its NRC license and release of the facility for unrestricted use. The request provided survey data of materials and equipment removed from the Wet and Dry Mills and of the remaining mill pads, as well as the results of the soil samples from the excavated pockets. Termination of the NRC license for the Heritage site has been contingent upon the removal of all NRC-licensed material (i.e. source material > 0.05% by weight concentration), and the decontamination of all equipment and structures impacted by this material (i.e. the Mill Buildings). The surveys provided by the licensee and the confirmatory surveys performed for the NRC show that all licensed material has been removed from the site.

From all D&D activities performed at the Heritage site since 1991, approximately 1800 tons of steel and 4246 tons of soil have been disposed.

Environmental Impacts of the Proposed Action

The affected environment was described in the Site Background section. The proposed action to terminate the HMI license and release the Heritage site for unrestricted use is procedural in nature because the licensee has completed all NRC-required remediation at the site. The proposed action would have no impact on site geology, ecology, or water. The proposed action may impact land use, because release of the site for unrestricted use would allow it to be used for other purposes.

Radiological Impacts

In March and July of 1997, analyses of radioactivity of surface and groundwater samples collected from existing site monitoring wells and offsite streams were reported by HMI as part of a mine tailings assessment for the New Jersey Department of Environmental Protection (NJDEP). The investigation confirmed that no significant radionuclide transport or elevated concentrations are occurring in the surface water or aquifer system at the site.

The NRC staff reviewed the surveys performed by HMI to demonstrate compliance with the criteria in its approved DP. The NRC staff performed a dose analysis of the licensed portions of the site (the Wet Mill pad, the Dry Mill pad, and the footprint of the stockpiled source material area). Analysis of the mill building pads was performed using a probabilistic approach using RESRAD-BUILD v 3.22. The staff used the FSS data for the pads contained in the March 4, 2005 termination request, converting gross contamination readings to estimates of area concentrations of thorium-232 and its progeny. Using thorium-232 as the sole contaminant (rather than uranium-238 or any combination of the two) results in higher dose per unit of surface activity. Using a scenario of an individual standing in the center of a pad for 75% of a year with no shielding, the potential total effective dose equivalent (TEDE) is approximately 1.6 mrem.

Analysis of the footprint of the stockpiled source material area was performed using RESRAD 6.3. The staff used final status soil sample results determined to have been taken within the footprint. Sample locations were selected during performance of gamma walkover surveys on April 14-18, 2003. Areas with higher dose rates were flagged and sampled. Sample locations that required additional remediation were sampled on December 14-15, 2004, after remediation was complete. The selection of sample points was biased high, as all locations were identified from the highest-resulting readings from a gamma survey. The dose analysis was performed using the most realistic dose-receptor scenario, that of a suburban resident. The potential TEDE to such an individual living within this footprint resulted in 40 mrem/yr. Because NRC staff commonly assesses dose using the most conservative dose-receptor scenario, a "resident farmer" evaluation was also performed. The resident farmer scenario considers ingestion pathways to a greater extent than the suburban resident scenario. This analysis resulted in a potential TEDE of 83 mrem/yr.

The NRC staff's assessment of the resulting dose from the NRC-licensed portions of the Heritage site indicates that the LTR criterion of 25 mrem/yr specified in 10 CFR 20.1402 is exceeded. However, HMI is a grandfathered licensee, in accordance with 10 CFR 20.1401, it is not required to meet the LTR dose-based criterion. The dose assessment for the Heritage site indicates that the public dose limit of 100 mrem/yr, specified in 10 CFR 20.1301, will not be exceeded.

Environmental Impacts of the Alternatives to the Proposed Action

Since the Heritage site has already been surveyed and found acceptable for release for unrestricted use, the only alternative to the proposed action of termination of the license and release of the site for unrestricted use is denial of the proposed action (i.e. no action). The affect on the environment from the no action alternative is the same as that from the proposed action, with the exception of land use. The no action alternative would extend the NRC license, preventing the licensed property from being used. Because NRC requirements have been met, there is no basis for maintaining the license over these portions of the site. Denial of the application would result in no change in the environmental impacts described above, and would constitute an unwarranted burden on the licensee.

Agencies and Persons Consulted

The NRC staff has determined that the proposed action is of a procedural nature, and will not affect listed species or critical habitat. Therefore, no further consultation is required under Section 7 of the Endangered Species Act. Likewise, the NRC staff has determined that the proposed action is not the type of activity that has the potential to cause effects on historic properties. Therefore, no further consultation is required under Section 106 of the National Historic Preservation Act.

The NRC staff coordinated with the US Environmental Protection Agency (EPA), Region 2 office on the current radiological status and proposed NRC actions regarding the Heritage site. EPA acknowledged the staff's plan for this site during a January 11, 2006 conference call.

The NRC staff provided a draft of its EA to the NJDEP for review. On July 12, 2005, they responded by letter, providing comments on the proposed action and on the EA. In this response, NJDEP stated disagreement with the EA because they believe, in part: 1) the NRC cleanup criteria of 10 pCi/g does not result in dose that is As Low As Reasonably Achievable, 2) the licensee's FSS of the stockpiled area insufficiently analyzed areas of elevated dose, and 3) the NRC should have required HMI to remediate the entire bounded area to meet the cleanup criteria. The NRC staff met with NJDEP staff on July 19, 2005, and discussed these disagreements as well as the NRC's licensing and oversight of HMI. The NRC considers the cleanup criteria for HMI appropriate because it is in accordance with NRC regulations, which provide for public health and safety. The NRC required HMI to remediate the portions of its site affected by licensed operations, as well as those containing licensable materials from prior operations. As such, NRC required remediation of the site beyond the scope originally required by the approved DP. The NRC staff considers the final status of the licensed areas to be adequately surveyed by the licensee and verified through the staff's various confirmatory surveys. Finally, the remaining concentrated material within the bounded area and the surrounding site, are below licensable concentrations, and as such are exempt from NRC regulations. The state may require remediation of these materials. The New Jersey radiological remediation standard is based on a dose limit of 15 mrem/yr.

Conclusions

The NRC staff have prepared this EA in support of its review of the proposed action to terminate Materials License No. SMB-1541 and to release the NRC-licensed portions of the Heritage site for unrestricted use. The NRC confirmatory surveys of the Heritage site verify that the requirements of its approved DP have been met. The NRC staff performed a dose assessment, and determined that the public dose limit of 100 mrem/yr specified in 10 CFR 20.1301 will not be exceeded by releasing the NRC-licensed portions of the site. On the basis of the EA, NRC has concluded that there are no significant environmental impacts and the license amendment does not warrant the preparation of an Environmental Impact Statement. Accordingly, the NRC staff has determined that a Finding of No Significant Impact is appropriate.

Prepared By:

Marjorie McLaughlin, Health Physicist, Division of Nuclear Materials Safety, Region I

List of References

1. NRC License No. SMB-1541 inspection and licensing records [NRC Docket No. 040-08980].

2. "Federal Register Notice Discussing Five Options for NRC Approval of Disposal or Onsite Storage of Thorium or Uranium Wastes From Past Nuclear Operations," dated October 23, 1981 [ADAMS Accession No. ML033630718].

3. FC 83-23 "Termination of Byproduct, Source, and Special Nuclear Materials Licenses," dated November 4, 1983 [ADAMS Accession No. ML003745523].

4. "Letter terminating Heritage plant activities," dated August 23, 1990 [ADAMS Accession No. ML030370350].

5. "Additional Information Regarding License Application," dated July 25, 1990 [ADAMS Accession No. ML030370324].

6. "Environmental Assessment and Finding of No Significant Impact - Heritage Minerals," dated October 19, 1999 [ADAMS Accession No. ML003721778].

7. "Heritage Minerals, Inc, Final Status Survey," dated November 25, 2001 [ADAMS Accession No. ML021150357].

8. "ORISE Confirmatory Survey Report," dated April 10, 2002 [ADAMS Accession No. ML021060589].

9. "Heritage Minerals, Inc. Response to January 8, 2003 Pre-Decisional Enforcement Conference Summary Letter," dated March 10, 2003 [ADAMS Accession No. ML030830547].

10. "Law Offices of A.J. Thompson, Ltr. Dtd 05/06/2003, Ref. Heritage Minerals, Inc.," dated May 6, 2003 [ADAMS Accession No. ML031320537].

11. "Confirmatory Survey of Portions of the Heritage Minerals, Inc., Facility, Lakehurst, NJ, Phase 2," dated December 31, 2003 [ADAMS Accession No. ML040250070].

12. "Law Offices of Anthony J. Thompson, P.C., Ltr. Dtd 06/30/2004, re: Heritage Minerals, Inc.," dated June 30, 2004 [ADAMS Accession No. ML041910222].

13. "Heritage Minerals, Inc. (HMI) Letter Dated November 17, 2004," dated November 17, 2004 [ADAMS Accession No. ML043240049].

14. "Heritage Minerals, Incorporated, Termination Request dtd 03/04/2005," dated March 04, 2005 [ADAMS Accession No. ML050960109].

15. "Oak Ridge Institute for Science and Education (ORISE) , Ltr. dated 2/14/2005, re: Analytical Results for Soil Samples from Heritage Minerals, Inc.," dated February 14, 2005 [ADAMS Accession No. ML050960038].

16. "NJDEP Ltr dtd 07/12/2005, EA comments Ref Heritage Minerals, Inc," dated July 12, 2005 [ADAMS Accession No. ML052000408].

17. "Dose Assessment for Unrestricted Future Use Scenarios Following License Termination of the Heritage Minerals, Incorporated, Site in Lakehurst, NJ," dated August 25, 2005 [ADAMS Accession No. ML052410061].

18. Federal Register Notice, Volume 65, No. 114, page 37186, dated Tuesday, June 13, 2000, "Use of Screening Values to Demonstrate Compliance With The Federal Rule on Radiological Criteria for License Termination."

19. Title 10 Code of Federal Regulations, Part 20, Subpart E, "Radiological Criteria for License Termination."

20. Title 10, Code of Federal Regulations, Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions."

The application for the license amendment and supporting documentation are available for inspection at NRC's Public Electronic Reading Room at http://www.nrc.gov/reading-rm/adams.html. Any questions with respect to this action should be referred to Marjorie McLaughlin, Decommissioning Branch, Division of Nuclear Materials Safety, Region I, 475 Allendale Road, King of Prussia, Pennsylvania 19406, telephone (610) 337-5240, fax (610) 337-5269.

Dated at King of Prussia, Pennsylvania this day of , 2006.

FOR THE NUCLEAR REGULATORY COMMISSION

Marie Miller, Chief
Decommissioning Branch
Division of Nuclear Materials Safety

Region I