

ENVIRONMENTAL ASSESSMENT
FOR
UMETCO MINERALS CORPORATION'S URANIUM MILL SITE
EAST GAS HILLS, NATRONA COUNTY, WYOMING

IN CONSIDERATION OF AN AMENDMENT TO
SOURCE MATERIAL LICENSE SUA-648 FOR
A REVISED SOIL DECOMMISSIONING PLAN

PREPARED BY

THE U.S. NUCLEAR REGULATORY COMMISSION
DIVISION OF FUEL CYCLE SAFETY AND SAFEGUARDS
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS

ENVIRONMENTAL ASSESSMENT FOR THE
REVISED SOIL DECOMMISSIONING PLAN AT
UMETCO MINERALS CORPORATION'S URANIUM MILL SITE
EAST GAS HILLS, WYOMING

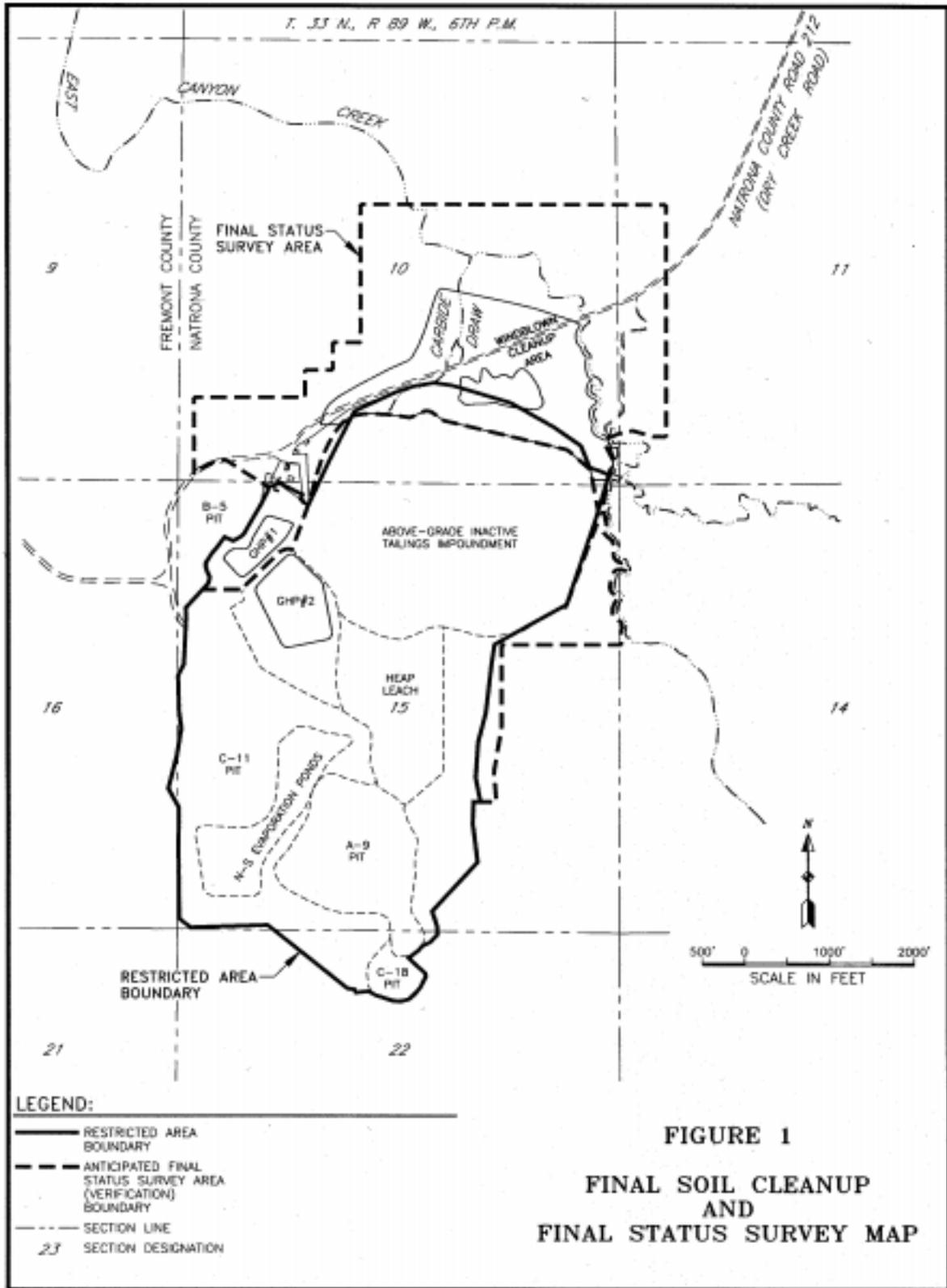
1.0 INTRODUCTION

1.1 Background

The Umetco Minerals Corporation (Umetco) uranium mill site is located in western Natrona County, in the East Gas Hills region of Central Wyoming. The Umetco site is licensed by the U.S. Nuclear Regulatory Commission (NRC) under Source Material License SUA-648 to possess byproduct material in the form of uranium mill tailings, as well as other radioactive wastes generated by past milling operations. The mill operated from 1960 to 1979 and has been dismantled and placed in a tailings disposal cell. The mill area is now covered by an evaporation pond, later, an engineered cover will be placed over the area. Current site activities include completing the final cover layer (rock) of two of the three disposal cells (Above-Grade Impoundment and Heap Leach Cell, the A-9 Repository has an interim cover) and continuing the ground-water corrective action program. The reclamation plans for the three disposal cells were approved and the associated environmental assessments (May 28, 1998, July 16, 1999, December 9, 1999) are in the NRC public records.

During the early operation of the mill (1960 to 1963), process solutions were released to East Canyon Creek (ECC) through the drainage tributary (Carbide Draw) located on the north side of the Above-Grade Impoundment (Figure 1). Also, in 1972 a breach of the impoundment occurred as a result of a broken discharge line, resulting in a release of tailings materials to the drainage, although historic documentation indicates that the solids from this breach were recovered (Umetco, September 17, 1999). Additional soil contamination occurred before the Above-Grade Impoundment was covered, as dry tailings were blown off its surface (prevailing winds at the site are to the north and northeast). Umetco performed soil excavation (cleanup) to remove windblown tailings on 4 acres north of the Above-Grade Impoundment in 1993 according to the approved decommissioning plan and procedures required by License Condition 30B. The area requiring soil cleanup was later found to extend beyond the 4 acres (Figure 1).

By letter dated April 14, 1999, Umetco submitted the reports "Background Radionuclide Concentrations at the Umetco Gas Hills Site, Volume I and II," and "Development of a Performance Evaluation Sample Program." The first report provided data to support a proposed new Ra-226 background value for the windblown (tailings) area and the latter report provided a portion of the soil analysis quality assurance program. By letter dated September 17, 1999, Umetco also provided the reports "Final Status Survey Plan" and "Human Health and Ecological Risk Assessment, East Canyon Creek Streambed, Gas Hills, Wyoming." The latter document contains data to support the "no action" alternative proposal. A revised report entitled "Final Background Characterization Report, Gas Hills, Wyoming Site" was sent to NRC on January 12, 2000, to replace portions of the background radionuclide report. The three documents (background characterization, final survey plan, and the creek risk assessment), were revised (Umetco, September 15, 2000) in response to comments from NRC staff and comprise the final revised soil decommissioning plan that Umetco requested be authorized to replace requirements in License Condition 30B.



EX-100-1-Tree.DWG

A technical evaluation of the revised plan is currently being prepared by the NRC staff to address all aspects of the licensee's proposal.

1.2 Proposed Action

Umetco (September 15, 2000) proposed a new Ra-226 soil background value of 6.1 pCi/g to use for the northern windblown tailings area (approximately 82 acres), a site-wide average Ra-226 value to compare to the disposal cell cover material, and methods (final status survey) to demonstrate that the site meets applicable standards. Removal of soil in the northern (windblown) area is necessary for the site to meet the residual 11e.(2) byproduct material¹ limits in 10 CFR 40, Appendix A, Criterion 6(6)². The windblown tailings area is north and northeast of the restricted area, i.e., Above-Grade Impoundment (see Figure 1) and the excavated soil will be placed into the A-9 Repository (a former uranium mine pit).

The soil decommissioning effort would consist of evaluation of elevated gamma radiation areas to verify the presence of 11e.(2) byproduct contamination as opposed to areas of localized mineralization. Tailings contaminated surface soils will be removed by first mowing existing vegetation (in soil removal areas only) utilizing a "brush hog" type of mower. Existing vegetation will be mowed as close to the ground surface as possible. The thin contaminated soil surface will be removed to a depth of 1 to 2 inches (2.5 to 5.1 cm) utilizing an articulated motor grader and/or hydraulic excavator equipped with a smooth cutting edge on the bucket. The intent of this procedure is to, as far as practicable, cleanly remove the upper few inches of soil by grading into a windrow and/or stockpile for subsequent removal and disposal. Umetco has previously utilized this technique that facilitates removal of the contaminated surface soils yet does not remove the entire topsoil strata which exists in the cleanup area at depths of 4 to 12 inches (10.2 to 30.5 cm).

After measurements confirm that the land meets the requirements of Criterion 6(6), the surface will be re-graded according to the NRC-approved site grading plan and back-filled with stockpiled topsoil from the mining area where necessary. The area, because it is part of a mining permit, will then be re-vegetated according to a plan approved by the Wyoming Department of Environmental Quality, Land Quality Division (WDEQ/LQD) with concurrence of the landowner which is the U.S. Bureau of Land Management (BLM).

The revised soil decommissioning plan also includes a risk assessment document for ECC to support Umetco's proposal to leave residual byproduct material in the creek channel ("no action" alternative). As discussed in Section 4.2, Umetco concluded that the radiological and non-radiological hazards associated with residual byproduct material contamination in the ECC

¹Atomic Energy Act, Section 11e.(2) defines byproduct material as the tailings or waste produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content.

²A concentration of radium in land, averaged over areas of 100 square meters, which, as a result of byproduct material does not exceed the background level by more than: (i) 5 picocuries per gram (pCi/g) of radium-226, averaged over the first 15 centimeters (cm) below the surface, and (ii) 15 pCi/g of radium-226, averaged over 15-cm thick layers more than 15 cm below the surface.

drainage are negligible for both human health and ecological harm and do not justify the environmental impacts and costs that would be caused by remediation activities.

1.3 Review Scope

In accordance with 10 CFR Part 51, this Environmental Assessment (EA) serves to: (1) present information and analysis for determining whether to issue a Finding of No Significant Impact (FONSI) or to prepare an Environmental Impact Statement (EIS); (2) fulfill the NRC's compliance with the National Environmental Policy Act when no EIS is necessary; and (3) facilitate preparation of an EIS when one is necessary. Should the NRC issue a FONSI, no EIS would be prepared.

Section 2 of this assessment describes the site and surrounding area, Section 3 describes the activities occurring at the site, Section 4 indicates the possible areas and types of environmental effects for the windblown area and the ECC, Section 5 lists the alternatives to the proposed action, Section 6 provides the summary and conclusions, Section 7 discusses Umetco's financial surety, Section 8 lists the consultations and sources of information, and Section 9 contains the references.

2.0 SITE ENVIRONMENT

The Gas Hills region of Wyoming has been extensively mined for uranium and explored for oil and gas. The climate is semi-arid (average annual precipitation of 9 inches (23 cm)) with wide seasonal variation of temperatures. The vegetation is sparse, consisting mainly of sagebrush and native grasses. The Umetco site is within the Wind River Basin of Central Wyoming. West Canyon Creek is an intermittent stream west of the former north and south evaporation ponds and the A-9 Repository. With the exception of two site evaporation ponds, there are no perennial surface water bodies in the area. The mill site is in the surface drainage area of East Canyon Creek, and the creek is ephemeral in the site area. The ecology of the region has not materially changed from that presented in the Final Environmental Statement (FES) for the mill operation (NRC, 1980), as confirmed by reports of annual inspection by the WDEQ and an NRC staff site visit August 15, 2000.

The licensed facility/site comprises 546 acres and is located approximately 50 miles (80 km) southeast of Riverton in Natrona County, Wyoming (Sections 10 and 15, T. 33 N, R. 89 W, 6th P.M.). Within a 50-mile (80-km) radius of the site, the 1990 population was 4,407 and the nearest residence is located approximately 5 miles (8 km) northeast of the site. Within 30 miles (48 km) of the site, there are three other uranium mill sites and several former uranium mining sites. Within 5 miles (8 km) of the site, approximately 78 percent of the land is under the BLM jurisdiction and much of this is used for cattle grazing. Also, the Wyoming abandoned mine land reclamation program has reclaimed uranium mine pits and overburden piles adjacent to the site (FES, Supplement to the Environmental Report (Umetco, 1995), and the Umetco annual land use reports). In addition, the NRC staff is reviewing a license application for an in situ leach uranium extraction facility that is proposed for the property south of the Umetco site.

Umetco must reclaim several mine pits on the site according to State regulations and the C-18 Pit (former surface uranium mine) will be filled and covered according to the NRC-approved plan. Umetco has completed work on the covers for the Heap Leach and Above-Grade Impoundments (disposal cells), except for the rock erosion protection layer. The A-9

Repository has an interim cover and the final cover will not be constructed until all contaminated material has been placed there.

The only existing structures on the site are an office trailer outside of the restricted area; a shop, two decontamination pads, and a trailer at the restricted area boundary; and a soils laboratory inside the restricted area. When remediation and reclamation (including removal of all structures) of the site are complete in 2005, the deed to 1920 acres (Figure 1.1, Umetco Final Status Survey Plan, September 15, 2000) should be transferred to the U.S. Department of Energy (DOE) for perpetual care of the disposal cells. Thus, the remediated windblown tailings area, Carbide Draw, and a portion of the ECC will be under government control.

The ECC terrain (Figure 2) consists of narrow steep sections and wider areas with rushes, sedges, grasses, and some riparian shrubs. In general, this vegetation extends 2 to 10 m (meters) from the centerline of the creek channel. Benches begin about 1 m above the wetlands and extend outward for 10 to 20 m. Along the 4-mile (6-km) length of the creek investigated (from Carbide Draw to the stock pond downstream from the Umetco site) are groves of cottonwood, aspen, limber pine, ponderosa pine, and juniper at the far edges of the benches (Umetco, September 17, 1999). Water flows in parts of the creek mainly during spring run-off (snow melt) and storms. Pools of water 4 to 6 inches (10 to 15 cm) deep exist in the wetlands area (3.5 miles long and approximately 11 acres), but do not support fish (Umetco site personnel, conversation on October 3, 2000). Thirty-six species of birds were observed along the creek during the ecological survey, including several migratory birds of high federal interest (Umetco, September 17, 1999) (see Section 4.2 for details).

3.0 OPERATIONS

The only operations at the site for the past several years have been reclamation of the disposal cells, construction of an additional evaporation pond in 1996, and pumping of ground water to engineered ponds for evaporation. In 2000, Umetco reclaimed a 60-acre mine area adjacent to the site by recontouring the surface and then adding topsoil and seed under State direction (area not under NRC jurisdiction). Also, pond #1 fluid was drained into pond #2 and the sediment, synthetic liner, and clay liner were moved to the A-9 Repository, amounting to approximately 18,000 cubic yards (cy). In addition, 50,000 cy of soil and 65,000 cy of rock were placed on the disposal cells, 105,000 cy of soil were moved in the channel realignment project, and 100,000 cy of clay were excavated and stockpiled for cell cover material. In contrast, the windblown tailings cleanup is expected to involve 38,000 to 76,000 cy of soil (Umetco site personnel, conversation on October 3, 2000).

4.0 ENVIRONMENTAL EFFECTS

4.1 Windblown Tailings Area

Partial or no cleanup of the windblown area were not alternatives proposed by the licensee because soil cleanup is required for license termination unless alternatives are justified, e.g. excessive cost or environmental harm with insignificant health benefit. Neither cultural resources nor threatened and endangered species are expected in this area to increase remediation costs. Restoration of the vegetation is expected to be successful with reasonable efforts, as discussed below. Therefore, only the proposed alternative of soil cleanup to meet the NRC standards for this area is discussed.



East Canyon Creek

FIGURE 2

Hydrology

The staff determined that soil decommissioning activities would not impact surface water as the only surface water on or near the site is in bermed ponds for evaporation and for construction activities. Umetco will regrade the areas affected and will restore drainage patterns to their pre-construction condition with only minor modifications to protect the disposal cells from erosion. The drainage basins involved are small, and low volumes of runoff from the site can be expected, even during storm events. As a result, there will be no impact to regional water flow due to the proposed action. The water table at the site is deeper than 100 feet so excavation of 2 to 6 inches (5 to 15 cm) of soil will not impact ground water. In fact, moving the contaminated soil to the A-9 Repository will control and stabilize the contamination.

Monitoring and Controls

Environmental monitoring of the Umetco site is required by License Condition 34, and results indicate that applicable standards are being met to control air-borne and fluid releases from the site with the current level of construction activities. The staff determined that no off-site releases of byproduct material, other than permitted fluxes of radon-222 or dust particulates are anticipated for the proposed work. Localized releases, if any, will be characterized and controlled through the site's "as low as is reasonably achievable" (ALARA) program.

Umetco has procedures to control dust, noise, and other environmental or industrial hygiene aspects of the operation. Two water trucks are on site to control dust created by construction activities such as the proposed soil excavation. The level of noise during construction activities is monitored and the large-equipment operators must use hearing protection. The staff determined that workers and the environment will be adequately protected during remediation.

Cultural Resources

The cultural and historical (archaeological) resource data for the site were recently updated, as indicated in the decommissioning plan. The licensee has committed to doing further exploration, retrieval of cultural data, and other actions, as needed, to meet the requirements of the National Historic Preservation Act. These findings and Umetco's commitments have been reviewed and accepted by the Wyoming State Historic Preservation Office (SHPO) (January 14, 1999). The NRC provided an up-date of the soil project to SHPO by letter dated July 20, 2000. Proposed plans for evaluation of six potential cultural sites near the windblown tailings area and the ECC are currently under review by the BLM (letter to NRC dated May 4, 2000) and its recommendations will be forwarded to the SHPO. These six sites are not expected to be disturbed by excavation in the windblown area and will only be evaluated if soil removal near a site is necessary. As a precaution, Umetco committed in the plan to have an archaeologist monitor construction activities in previously undisturbed areas and to halt construction if suspected cultural resource deposits are uncovered.

Vegetation and Wildlife

The windblown area contains primarily grasses and sagebrush (see foreground in Figure 2). The area is within Umetco's WDEQ 349C mining permit boundary. The total disturbed area within this permit boundary is for 2072 acres, most of which is mining disturbance in Fremont County, currently in various stages of reclamation. Umetco has gained significant experience in

reclaiming lands disturbed by mining activities within this permit boundary as well as other permitted areas, such as, Permit 356C, which has been released. Reclaimed mining areas, not anticipated satisfying established comparison area requirements, have been and will be enhanced in a manner that facilitates successful revegetation and subsequent bond release by the State. Umetco's mine reclamation experience in the Gas Hills area has consisted of reclamation of approximately 1800 acres of affected land with another 2200 acres currently under reclamation. Reclamation includes soil amendments, *e.g.*, lime, fertilizers, etc.; various seed application methodologies, *e.g.*, drill, broadcast, pit seeding; and planting, irrigation, and monitoring of several hundred limber pine trees. Umetco performs monitoring and statistical evaluation of reclaimed lands to established comparison areas and construction of vegetation test plots to evaluate potential applicability and alternatives for reclamation in areas of limited suitable cover soil. In some areas, Umetco has added an agent during seeding to enhance absorption of water and essential minerals to increase plant survival. The detrimental impacts associated with removal of the upper portion of the topsoil within the windblown cleanup area is a short-term impact. The windblown cleanup area is located in relatively flat terrain and for the most part is a windblown depositional area, and not a windblown erosional area. Umetco anticipates establishment (acceptable statistical evaluation against established comparison area) of vegetation in the affected areas within 5 years of seeding. Umetco does not anticipate the soil (windblown) cleanup and subsequent revegetation to have an impact on the grazing since grazing within this area is generally sparse and the affected area by comparison to the area of the grazing lease is negligible (Umetco, letter of January 24, 2001).

Because of the fence, near-by construction, and other activities that have occurred on the licensed site fairly continuously since 1960, the wildlife in the windblown area is fairly sparse (NRC staff site visit August 15, 2000 and Umetco September 17, 1999).

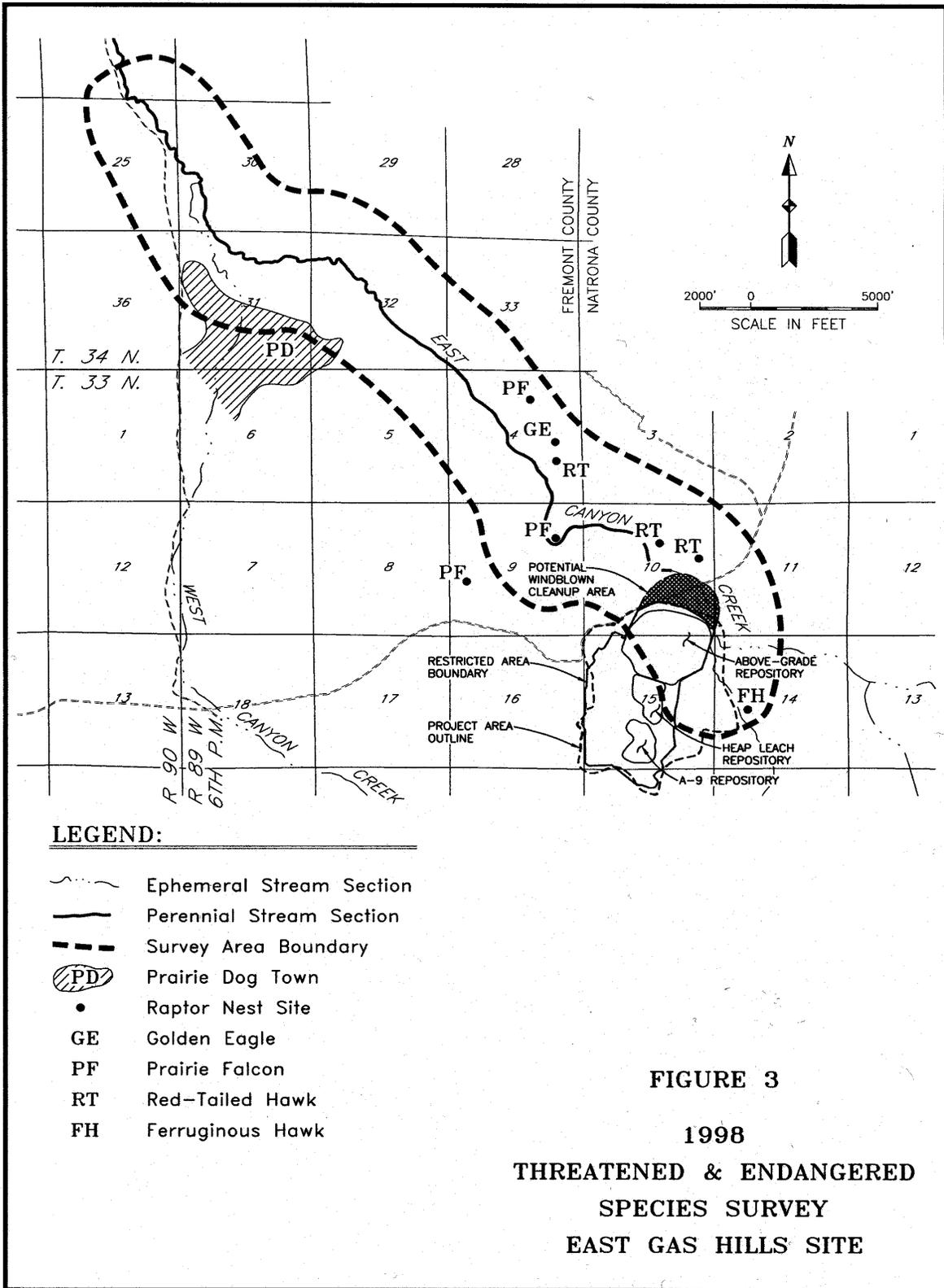
Threatened and Endangered Species

Threatened and endangered wildlife surveys have been performed in the windblown cleanup area of Umetco's Gas Hills site. Results of these surveys did not identify the presence of Sage Grouse and/or Sage Grouse nesting areas. The potential impact to threatened and endangered species on or near the site has been reviewed by the U.S. Department of Interior, Fish and Wildlife Service (FWS) (March 14, 1998, and February 24, 1999), and addressed by Umetco (April 1, 1998, April 14, 1999, and September 15, 2000). There have been no observed prairie dog colonies within or near the restricted area, so the endangered black-footed ferret is not likely to be in the windblown tailings remediation area without its main food source near-by.

To address specific concerns of the FWS, Umetco committed to perform a site survey for the Mountain Plover prior to beginning construction activities outside of the restricted area, and to consult the FWS if work will be necessary within the buffer zone around the two red-tailed hawk nests that were identified by the Umetco survey.

Traffic and Accidents

The environmental effects of traffic or accidents during the proposed work would be minimal, as only low levels of byproduct material (*e.g.*, windblown tailings) are to be moved a short distance



EA-FIG-3.DWG

to the A-9 Repository. The local environmental impacts of traffic or accidents involving the trucks or other earth-moving equipment should be minor and easily remediated.

4.2 East Canyon Creek

Umetco's assessment of soil remediation versus partial, or no remediation of the ECC (including Carbide Draw) contamination considered economic costs, local conditions, likely future land use, environmental impacts, and potential health risks. A complicating factor in the assessment is that there are natural deposits of uranium mineralization in some portions of the creek bank (NRC trip report of August 8, 2000) that have and will continue to erode and contribute to the uranium, thorium, and radium content of the creek channel. The ECC is also influenced by uranium surface mining upstream of the Umetco site that contributes the same constituents to the creek.

Alternatives

For full remediation of the ECC channel, the economic costs would be high to evaluate and recover cultural deposits and to restore the vegetation after soil removal. The local wetlands would have to be preserved or replaced, requiring permits and additional costs. The environmental impacts of remediation would include increased erosion, disruption of wildlife habitat, and harm to threatened species. The estimated cost for soil remediation and associated activities in the ECC is \$7,292,000 and there would be no significant benefit (Umetco, September 15, 2000).

The partial remediation alternative would involve the removal of the most heavily contaminated spots. Umetco concluded that even limited soil removal would require temporary roads and cause disruption to wildlife and the wetlands, destruction of fragile plant communities, and hazards to workers. The expense of required archeological studies would be high and there would be no reduction in potential dose to any likely area resident.

Umetco concluded that the no remediation alternative would create no potential health or environmental risks. Leaving small amounts of byproduct material in the creek channel would not expose a person to a measurable dose because no one would be in that area for extended periods of time and no crops are grown, or irrigated via the creek, in this region (Umetco September 15, 2000). The byproduct material in the streambed could, as a result of rain storms or snow melt, add a very small amount of contaminated sediments to the stock pond built in 1981, 4 miles (6 km) downstream of the Umetco site. The sediments apparently are not affecting the water quality as evidenced by test results in 1998 (semi-annual report submitted August 28, 1998) from a sample taken just downstream of the pond. Detailed discussion of the staff findings follows.

Land Use

There is one BLM grazing lease that includes the portion of ECC under consideration. Possible future uses of the near-by area could include gas or oil exploration. The cattle and other animals using the ECC were considered in Umetco's analysis as discussed below.

Vegetation and Wildlife

Vegetation and insect samples taken by Umetco along the creek bed and bank indicate that there has been minor uptake of uranium, thorium, and radium but the source (milling, mining, or natural) can not be determined. The most sensitive receptor, small mammals, was calculated to be potentially exposed to 1.2 mrad/day. The accepted safe level is 100 mrad/day.

The average soil Ra-226 values for six segments of the ECC below (downstream of) the site, using the creek channel soil above (upstream of) the site as background, are less than the limits in 10 CFR Part 40, Appendix A, Criterion 6(6). Individual samples did go as high as 17 pCi/g Ra-226 but the highest background sample was 102 pCi/g. The residual radium levels in the channel should not present a health hazard to plants or animals. Soil sample data for the non-radiological contaminants (mainly the heavy metals in byproduct material) also indicate a low potential for harm to the plants and animals that exist in or use the creek area (Umetco, September 17, 1999).

Radiological Dose Modeling and Assessment of Non-Radiological Contaminants

Umetco concluded that the future land use around the ECC section under consideration is limited to free-range cattle grazing, and any likely resident would be seasonal. This is reasonable as for years, the nearest residence to the site, 5 miles (8 km) away, has been occupied only 2 weeks a year, and the nearest full-time resident is 8 miles (13 km) away (Umetco, annual reports). To estimate the potential dose to humans due to the ECC radiological contamination, Umetco assumed a rancher would spend 30 days each year for 30 years in the creek channel and that the meat supply would be obtained from animals drinking from the ECC. The model also assumed the rancher drank two liters of creek water, even though the water is impacted by cattle excrement. The measured radiation levels for five different areas along the ECC were used and the source thickness was conservatively assumed to be 6.5 feet (2 m). The total doses were calculated at 0, 300, and 1000 years. The major dose pathway was gamma exposure. The maximum calculated dose values were from 2 to 6 mrem/year at 300 years from now (Umetco, September 15, 2000).

The Umetco assessment of non-radiological hazards examined six metals associated with byproduct material. The maximum measured concentration for each was compared to the U.S. Environmental Protection Agency's Risk-Based Concentration Tables (EPA, 1998). The only metal that exceeded the value in the table was arsenic. Further evaluation of the potential health risk from arsenic was performed considering the soil ingestion and inhalation pathways. The calculated cancer risk for the seasonal rancher was no greater than 1 in 100,000 and within the EPA acceptable risk level.

The NRC staff determined that adequate measurements and analysis had been performed. Reasonable or conservative assumptions were made for the dose modeling and non-radiological hazard assessment. The public dose limit for a released site for other types of nuclear facilities is 25 mrem/year. As discussed above, the estimated dose for ECC was substantially lower. Since nation's background dose is approximately 300 mrem/year, there will be no significant impact from the byproduct material in ECC, to human health or the environment under foreseeable circumstances.



Cultural Resource Site Mitigation in East Canyon Creek

FIGURE 4

Cultural Resources

The recent uncovering and study of cultural materials such as fire stones and stone weapons (resource site 48NA465, Figure 4) along the east bank of the ECC adjacent to the Umetco site, and the other known resource sites along the ECC, indicate that additional cultural resource sites should be expected along the creek. The cost of investigating and mitigating these sites before contaminated soil removal, was considered by the licensee to approximate \$5,280,000 (Umetco September 15, 2000). As of the date of the estimate, approximately \$100,000 had been spent on site 48NA465 with an estimated \$100,000 necessary to complete the required treatment and mitigation work to the satisfaction of the BLM and Wyoming SHPO. For the subject 4-mile section of ECC, it was estimated to cost \$200 per linear foot of streambed to cover archeology surveys, archeological monitoring of excavation, development of treatment/mitigation plans, execution of treatment/mitigation plans, construction delays associated with cultural resource areas, report preparation, etc. Costs associated with potential work in the ECC drainage that are not direct costs for treatment and mitigation, include cost of construction delays, stream diversions with associated wetland mitigation, stabilization of adjacent streambeds, etc.

Threatened and Endangered Species

Several raptor nests and bird species currently listed by the FWS as being migratory birds of high federal interest (MBHFI) were recorded in the creek area (Figure 3). The golden eagle, prairie falcon, and red-tailed hawk were raptors observed successfully nesting and fledging young along ECC in 1998 and 2000. Other MBHFI species commonly observed on the area included the loggerhead shrike, northern harrier, Brewer's sparrow, lark bunting, and ferruginous hawk. Male sage grouse were observed along the creek in 1998 and may use the area for watering. Sage grouse are currently under study for potential listing as threatened and endangered.

4.3 Cumulative Effects

The construction activities at the site that should occur over the next few years are rock (riprap) placement on the Above-Grade Impoundment and Heap Leach Cell during the spring and summer of 2001, soil excavation north-northeast of the site in 2001, and placement of the radon barrier portion of the cover for the A-9 Repository and site grading in 2002. These activities are not different from what has occurred in the past and are not expected to damage the environment in the long-term. Areas disturbed by Umetco's operations will be re-vegetated and restored, as much as is reasonably possible, to pre-milling condition.

In 2000, Umetco started operating a rock quarry 5 miles (8 km) from the mill site. There is an EPA Air Quality Permit (with opacity limits) for the crusher. The dirt roads and crusher area were covered with rock and are sprayed with water to control dust (Umetco site personnel, conversation of October 3, 2000).

Other activities or facilities within a 5-mile (8-km) radius consist of a gas compressor station, the inactive PRI mine support facility, and traffic of approximately ten to thirty vehicles per day along the dirt road on the north side of the site. The Lucky Mc uranium mill site, approximately 6 miles (9 km) away, is also reclaiming tailings and evaporation ponds. For the next few years, these activities would contribute similar amounts of noise and dust to the general area as the

Umetco operation. The in situ leach facility that may be built just south of the Umetco site is unlikely to begin construction before Umetco has completed surface decommissioning and reclamation. The staff determined that the Umetco soil decommissioning activities will not be a major contributor to significant unmitigated environmental impacts.

4.4 Conclusions

The planned scope of activity for the windblown tailings removal is not different than past construction activities on this site. Fewer personnel and less equipment are on site now than when the mill was in operation. The staff considers that any additional environmental effects at the site, as a result of the requested activity, will be minor and short-term, considering all the mitigation efforts that Umetco will perform.

For the contaminated areas of East Canyon Creek that Umetco proposes to leave in place, the potential health and environmental impacts of remediation versus no remediation have been examined. Umetco indicated that the impacts to vegetation, wetlands habitat, wildlife, and channel stability associated with any major disturbance of the ECC drainage would be severe, and would far exceed any potential benefit of contaminant removal. The NRC staff review determined that the proposed “no action” alternative protects the sensitive ecological conditions in the creek. Also, the proposed alternative will achieve a level of protection for public health, safety, and the environment from the radiological and non-radiological hazards of byproduct material which is equivalent to, to the extent practicable, the requirements of Criterion 6(6). The NRC staff considers that there is no significant health impact to the public or biota that could occur due to the residual contamination remaining in place. The long-term ecological damage, potential harm to threatened and endangered species, and economic costs of remediation are not justified by any benefit that would result from soil remediation in ECC.

5.0 ALTERNATIVES

The action that the NRC is considering is approval of an amendment request to Source Material License SUA-648 issued pursuant to 10 CFR Part 40. The alternatives available to the NRC are:

1. Approve the license amendment request as submitted; or
2. Amend the license with such additional conditions as are considered necessary or appropriate to protect public health and safety and the environment; or
3. Deny the request.

Based on its review, the NRC staff has concluded that the environmental impacts associated with the proposed action do not warrant either the limiting of Umetco’s future operations or the denial of the license amendment. The NRC staff has concluded that there are no significant environmental impacts associated with the proposed action. Therefore, alternatives with equal or greater impacts need not be evaluated. Additionally, in the Technical Evaluation Report being prepared for this action, the staff has reviewed the licensee's proposed action with respect to the criteria for decommissioning, specified in 10 CFR Part 40, Appendix A, and has

no basis for denial of the proposed action. Therefore, the staff considers that Alternative 1 is the appropriate alternative for selection.

6.0 SUMMARY AND CONCLUSIONS

Based on an evaluation of the environmental impacts of the Umetco amendment request, the NRC has determined that the proper action is to issue a FONSI in the Federal Register. The following statements support the FONSI and summarize the conclusions resulting from the EA.

1. An acceptable environmental monitoring program is in place to monitor releases and to detect if applicable regulatory limits will be exceeded. Radiological effluents from site decommissioning operations have been, and are expected to continue to remain below the regulatory limits. Also, an annual audit of the ALARA program will be performed by the licensee and the audit report will be provided to the NRC.
2. Present and future potential risks were assessed. Given the remote location, limited activities requested, the small area of impact, the commitments by the licensee, and the past activities on the site, the staff has determined that the potential health and environmental hazards associated with the proposed actions will have no significant impact.

7.0 FINANCIAL SURETY

The licensee provided detailed cost estimates for the soil decommissioning and associated work on August 9, 1999. The estimates were made in accordance with good engineering practice and the surety was increased to include this amount on February 17, 2000. The staff will document its review of this cost estimate with the Umetco site annual surety update review when the soil decommissioning plan is approved. The updated surety amount for the entire site would be adequate to complete reclamation and decommissioning of the site according to the approved plans, by a third party if necessary.

8.0 CONSULTATION AND SOURCE INFORMATION

In completing this licensing action, the NRC staff held discussions or corresponded with representatives of the Wyoming SHPO, WDEQ Land Quality Division and Solid & Hazardous Waste Division, Wyoming Fish and Game Department, FWS, and the BLM (Casper, Wyoming office), as documented below. Some preliminary consultations on the proposed soil remediation were done at the same time as the consultation for the A-9 and/or Above-Grade Impoundment enhanced reclamation plans in 1998 and 1999. The BLM Casper Office staff were authorized to do the initial consultations (e.g., SHPO and Native American groups) for the cultural resource sites because of their location and expertise.

The draft EA was sent on November 15, 2000, to the above agencies and to the Wyoming Outdoor Council to solicit comments. The BLM provided comments to NRC that were addressed by letter and in this final EA. The primary sources of information for the EA were the licensee and the agency personnel that were consulted, as documented below.

9.0 REFERENCES and RECORDS OF CONSULTATION (by date)

Submittals and correspondence are available through the NRC public documents.

U.S. Nuclear Regulatory Commission, "Final Environmental Statement for the Gas Hills Uranium Project," NUREG-0702, July 1980.

Umetco, Supplement to the Existing Environmental Report, January 11, 1993.

Umetco, Supplement to Applicant's Environmental Report, January 23, 1995.

U.S. Environmental Protection Agency, "Risk Based Concentration Table, Technical Background Information, 1998.

Letter From Judy K. Wolf, Wyoming State Historic Preservation Office, to M. Karbs, BLM (cc: E. Brummett, NRC), comments on Umetco's cultural survey report, January 23, 1998.

Letter (with enclosure) from T. Gieck, Umetco, to J. Holonich, NRC, transmitting the "Class III Cultural Resources Inventory" with drawings of restricted area, borrow areas, borrow permit information, February 4, 1998.

Letter from J. Holonich, NRC, to Field Supervisor, U.S. Fish and Wildlife Service, Cheyenne, Wyoming, requesting information on protected plant and animals in the vicinity of Umetco site, February 13, 1998.

Letter from Michael M. Long, U.S. Fish and Wildlife Service, to J. Holonich, NRC, suggesting precautions to protect black-footed ferrets, candidate species (swift fox, mountain plover), and migratory birds, March 14, 1998.

Letter from T. Gieck, Umetco, to J. Holonich, NRC, responding to comment on potential environmental impacts to borrow areas, clean-up areas, and East Canyon Creek drainage, April 1, 1998.

Letter from Don Whyde, BLM, to Elaine Brummett, NRC, concerning completed assessment of mitigation needs for cultural resources at the Umetco site, October 23, 1998.

Letter from N.K. Stablein, NRC, to Judy K. Wolf, Wyoming Deputy State Historic Preservation Officer, providing information on the assessment of mitigation needs for cultural resource at the Umetco site, January 4, 1999.

Letter from N.K. Stablein, NRC, to Judy K. Wolf, Wyoming Deputy State Historic Preservation Officer, concerning areas to be protected and areas needing mitigation, January 4, 1999.

Memorandum from T. Gieck, Umetco, to E. Brummett, NRC, transmitting drawing showing boundaries of threatened and endangered species survey, January 5, 1999.

Letter from Judy K. Wolf, Wyoming Deputy State Historic Preservation Officer, to N. King Stablein, NRC, stating no objection to the reclamation projects, conditional to appropriate mitigation of cultural resources, January 14, 1999.

Letter (with enclosures) from N.K. Stablein, NRC, to Field Supervisor, U.S. Fish and Wildlife Service, requesting information on protected plants and animal species in the site area, including area to be cleaned; and enclosing September 1998 Umetco species survey, January 26, 1999.

Letter from Michael M. Long, U.S. Fish and Wildlife Service, to J. Holonich, NRC, suggesting precautions for the mountain plover, raptors, and wetlands/riparian areas, February 24, 1999.

Letter (with enclosures) from NRC to Director, Wyoming Game and Fish Department, providing Umetco's threatened and endangered species survey, February 1, 1999.

Letter (with enclosures) from T. Gieck, Umetco, to N.K. Stablein, NRC, regarding cultural resource sites, wildlife, and wetlands, April 14, 1999.

Letter from Umetco to NRC providing the reports "Final Status Survey Plan" and "Human Health and Ecological Risk Assessment, East Canyon Creek Streambed, Gas Hills, Wyoming," September 17, 1999.

Telephone conversation with Steve Platt, Land Quality Division, Wyoming Department of Environmental Quality, October 15, 1999. The State has not approved the grading/drainage plan for the State permit area, but significant problems are not anticipated.

Telephone conversation with Roberta Hoy, Land Quality Division, Wyoming Department of Environmental Quality, October 15, 1999. She has no concerns.

Letter from T. Gieck, Umetco to T. Essig, NRC, transmitting the "Final Background Characterization Report, Gas Hills, Wyoming Site," January 12, 2000.

Letter from T. Essig, NRC to C. Sealy, Umetco requesting additional information concerning potentially impacted cultural sites and identification of any specific environmental impacts that have not been addressed, March 6, 2000.

Letter from the Field Manager of the BLM Casper Office, to E. Brummett, NRC, indicating that they are reviewing evaluative testing proposal from Umetco for six potential cultural resource sites in or near the windblown tailings cleanup area, May 4, 2000.

Letter from P. Ting, NRC, to Judy K. Wolf, Wyoming Deputy State Historic Preservation Officer, indicating status of Umetco investigation and mitigation activities related to area of planned soil remediation, July 20, 2000.

NRC memo to P. Ting from J. Lusher providing a Trip Report including the results of an examination of East Canyon Creek near the Umetco site, August 8, 2000.

Letter from Judy K. Wolf, Wyoming Deputy State Historic Preservation Officer, to P. Ting, NRC requesting clarification related to area of planned soil remediation, August 11, 2000.

Letter from C. Sealy, Umetco, to P. Ting, NRC, transmitting the "Annual Report and Corrective Action Program Review," August 29, 2000.

Letter from T. Gieck, Umetco, to P. Ting, NRC, transmitting revised soil decommissioning plan (three binders) and response to NRC comments, September 15, 2000.

Letter from P. Ting, NRC, to Judy K. Wolf, Wyoming Deputy State Historic Preservation Officer, providing clarification on lead agency and area of impact for the planned soil remediation, November 16, 2000.

Letter from S. Facciani, Deputy Director, Wyoming Game and Fish Department, to P. Ting, NRC, providing concurrence on the conclusions of the draft EA, November 21, 2000.

Letter from P. Moore, Field Manager, BLM Casper Office, To P. Ting, NRC, providing comments and questions on the draft EA, December 19, 2000.

Telephone conversation with P. Moore, D. Whyde, and R. Specht (BLM), T. Gieck (Umetco), and E. Brummett (NRC), concerning the draft EA, January 8, 2001.

Letter from T. Gieck, Umetco, to P. Ting, NRC, providing information in response to many of the BLM comments on the draft EA, January 24, 2001.

Letter from P. Ting, NRC, to P. Moore, BLM, responding to comments on the draft EA, February 8, 2001.