



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

DEC 1 2012

MEMORANDUM

SUBJECT: Request for a Time-Critical Removal Action at the Middle Reservoir Road Radiation Site, Pueblo of Laguna, Cibola County, New Mexico

FROM: Warren Zehner, On-Scene Coordinator
Removal Team (6SF-PR)

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Removal Team (6SF-PR)

THRU: Ragan Broyles, Associate Director
Prevention and Response Branch (6SF-P)

TO: Pam Phillips, Acting Director
Superfund Division (6SF)

I. PURPOSE

This memorandum requests approval for a time-critical removal action, pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. § 9601 et seq., at the Middle Reservoir Road Radiation Site (the "Site") in the Village of Paguete, Pueblo of Laguna, located in Cibola County, New Mexico. The action includes the securing, relinquishment of ownership by the current resident/owner to the Village of Paguete, of the historically/culturally significant residential structure (house) contaminated with excess levels of Radon-222 that cannot be feasibly abated, and the construction of a replacement house that is consistent within the meaning of "decent, safe and sanitary" as described in the Uniform Relocation Assistance and Real Property Acquisition Policies for Federal and Federal Assistance Programs (URA), 42 USC §§ 4601 et seq., and its implementing regulations found in 49 CFR § 24.2(a)(8).

As described in Section III of this memorandum, the factors described in Section 300.415 of the National Contingency Plan (NCP), 40 CFR § 300.415, have been considered, and, based on those factors, a determination has been made that a removal action at the Site is appropriate. This Removal Action is not expected to exceed the statutory twelve-month time limit, nor is it expected to exceed the statutory \$2,000,000 cost ceiling.

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID: NMN000607496
Category of Removal: Time Critical
Site ID: A6FU
Latitude: 35.142776 N
Longitude: -107.38053 W

A. Site Description

1. Removal Site Evaluation

Pursuant to the Grants Mineral Belt Five Year Plan, the Environmental Protection Agency (EPA), Region 6, is conducting the overall environmental assessment of the Grants Mineral Belt area of New Mexico. In March 2009, the Region 6 Prevention and Response Branch (EPA PRB) received a verbal request for assistance from the Laguna Environment Department (LED) in the evaluation of the Villages of Paguete, Laguna, Mesita, Encinal, Paraje, and Seama on the Pueblo of Laguna (POL) for a potential removal action. Documentation provided by the LED indicated that the aforementioned Villages are located adjacent to the three historic uranium mines and one uranium mill that composed the uranium production from the Laguna Sub-District of the Grants Mineral Belt. The St. Anthony (SA) open pit uranium mine and the L-Bar underground uranium mine and associated uranium mill are located 2 – 3 miles east of the Site, and the Jackpile (JM) uranium mine is located approximately the same distance to the southeast. All of the mines and the associated mill near the Site have been closed for several years. The SA was operated by United Nuclear Company from 1975 to 1981. The L-Bar mine and mill complex was operated by Sohio Western Mining Company from 1976-1981. The Jackpile mine was operated by Anaconda and its successor ARCO from 1952 – 1982. The villages of the POL were thought to be potentially contaminated with uranium mine/mill waste originating from the uranium mining and milling operations that occurred on the Laguna Sub-District. Based on this request for assistance, the Superfund Technical and Response Team (START) III contractors were tasked by EPA PRB to conduct a Radiation Removal Assessment on the Site. As part of this radiological assessment a quality assurance sampling plan (QASP) was developed for the project documenting standard operating procedures (SOPs), assessment protocols, and a data decision tree consistent with current EPA guidance and other best management practices. Based on the results of the Radiation Removal Assessment, the POL made a written request to the PRB on August 23, 2011 for assistance in conducting a removal action on the affected residential properties on this Site (*See Attachment 2*).

The elevated concentrations of radon-222 (^{222}Rn , hereafter to mean the isotope and progeny) believed to be derived primarily from the mining operations and/or subsequent mine closure operations conducted in the Laguna Sub-District of the Grants Mineral Belt is the principal contaminant of concern on this Site.

2. Physical Location

The Site is located on approximately 1.3 acres of land on Middle Reservoir Road in the Village of Paguete, on the Laguna Pueblo near Cibola County, New Mexico (*See Attachment 3*). The residential structure located on the Site is approximately 1100 square feet, and of traditional POL construction; rock/mud mortar walls with a stucco plaster coating, dry stack rock foundation, and a dirt floor (*See Attachment 4*). The structure was built in 1932. From 1932 until approximately 1961 the structure was utilized as a communal village “grain house” for the purpose of storing and processing corn. The structure has been used as a residence from 1979 to the present by the current owner and resident. Structural integrity of the residence is poor with several large floor to ceiling cracks in the walls visible along with several visible patches and reinforcing wall structures visible. These conditions prompted a Structural Integrity Survey (SIS) to evaluate the feasibility of safely installing a radon-222 abatement system (*See Attachment 5*). Due to its history and cultural contributions to the Village as a “grain house” this structure has been designated as historically/culturally significant by the officials of the Village of Paguete (*See Attachment 6*).

3. Site Characteristics

The EPA PRB has completed investigating the extent of residential radiological contamination on the POL and this Site. Based on the Removal Assessment for this residence radon-222 levels exceed the acceptable maximum exposure limit established by the EPA and Center for Disease Control. *See Oak Canyon Removal Assessment Report, (Attachment 7)*.

The Laguna Sub-District is a small sub-district on the Grants Mineral Belt located in the western part of the Laguna Pueblo and near-by Cibola County in northwest New Mexico. Based on the review of federal and State government regulatory records, there were three uranium mining operations and one uranium mill operating in the sub-district from the early 1950s until 2002, with most active operations ceasing in the 1980s (*See Attachment 8*). These mines and the associated L-Bar mill were the main source of employment in Cibola County, NM, and the single largest employer for residents of the POL.

Geologically, the Grants Mineral Belt is a reasonably unique uranium mining area as most of the major uranium deposits are tabular as compared to the significantly more prevalent roll-front uranium deposits throughout most of the other uranium mining areas in the United States. In tabular deposits the uranium bearing strata tends to be in horizontal or tabular bands of widths up to 2 -3 miles and of varying thicknesses. The tabular uranium bearing deposits in the Laguna Sub-District are located in the Jackpile Sandstone member of the Morrison Formation. All of the Village of Paguete is underlain by this sandstone (*See Attachment 9*). As discussed in *The Jackpile Sandstone Member of the Morrison Formation in West-Central New Mexico – A Formal Definition* (Owen et al., New Mexico Geology, Volume 6, No. 3, August 1984), the Jackpile Sandstone is a brittle, cross-bedded sandstone with significant occlusions and fractures.

As discussed above uranium mining activities occurred in the Laguna Sub-District from approximately 1952 until approximately 1982. These activities included but were not limited to, surface mining, underground mining, frequent blasting to facilitate ore recovery, geologic borehole installation to define the limits of ore bodies and extent of economic viability. All of these previously described mining and mining related activities are invasive and have a negative effect on the structural integrity of the brittle Jackpile Sandstone primarily in changing the porosity and permeability of the formation through the shafts, tunnels or boreholes and the frequent blasting to facilitate ore removal. It is well documented in the literature that mine shafts, tunnels, and boreholes associated with uranium mines collect and artificially concentrate ^{222}Rn . This artificial concentration becomes exacerbated when the mines are closed due to very limited or no fresh air circulation occurring in the mines. With the historic mining activities altering the porosity and permeability of the Jackpile Sandstone, the artificially concentrated ^{222}Rn has a significantly increased probability of surface discharge at increased concentrations. It appears that the source of the elevated ^{222}Rn present in this residence is directly related to the mining operations altering the porosity and permeability of the uranium-bearing Jackpile sandstone and the overlying Dakota sandstone strata in and around the Site.

4. Release or Threatened Release Into the Environment of a Hazardous Substance, Pollutant or Contaminant

The principal contaminants of concern on this Site is ^{222}Rn , which was detected in the residence on the Site at levels up to 6.3 pico curies per liter (pCi/L) using seven day samplers. In order to be consistent with the recommendations of the EPA Region 6 Regional Health Physicist/Radon Coordinator and the substantive requirements of *Protocols for Radon and Radon Decay Product Measurement in Homes* (EPA 402-R-02-003, May 1993), the more definitive 91 day samplers were placed in the residence since it exceeded the acceptable exposure level on the seven day samplers. EPA has previously determined that the acceptable in-home exposure level for ^{222}Rn is ≤ 4 pCi/L as per the 91 day samplers (*EPA Assessment of Risks from Radon in Homes* (EPA 402-R-03-003, June 2003). The 91 day samplers recorded levels of ^{222}Rn above the ≤ 4 pCi/L exposure level at the residence, with a maximum level of 9.5 pCi/L at this Site.

As previously stated, the primary contaminant of concern at the Site, ^{222}Rn is a hazardous substance as defined in Section 101(14) of CERCLA, 42 U.S.C. § 9601(14) and 40 CFR § 302.4. The following are the known health effects associated with exposure to the aforementioned hazardous substance on the Site.

Radon-222

Radon-222 is a colorless and odorless noble gas that is produced in the decay chains of Uranium and Thorium. Radium-226 is the parent of ^{222}Rn . According to the Agency for Toxic Substance and Disease Registry (ATSDR) *ToxFAQs for Radon* (September 2008) document,

Rn is recognized by the EPA and the Department of Health and Human Services (DHHS) as a human carcinogen. The primary target organ for ^{222}Rn and its alpha ionizing radiation producing progeny are the lungs. Several health organizations have indicated that prolonged exposure to high levels ($> 4\text{pCi/L}$) of ^{222}Rn is the second leading cause of lung cancer in the United States, behind only smoking.

Exposure pathways are the routes that a contaminant can take in order to be assimilated by a human or animal. For example, the inhalation of gases, vapors or contaminated airborne particles (dust) or the incidental ingestion of contaminated soils through direct contact are both exposure pathways. The exposure pathways of concern at the Site for ^{222}Rn are described below:

- Inhalation is the primary exposure pathway at this Site for ^{222}Rn and associated alpha ionizing radiation producing progeny. As discussed above a significant amount of ^{222}Rn is present in the residence on this Site. Inhalation exposure is not limited only to the gaseous phase of ^{222}Rn ; the alpha emitting progeny also readily attach to fine surface soils and related fine particulate matter (dust). Since this Site is in a semi-arid environment and the contaminated soils tend to be fine grained and dusty, they are easily airborne after wind or mechanical disturbance and subject to inhalation by humans or livestock.

5. NPL Status

This Site is not presently on the NPL. However, should the Site rank on the NPL, the current removal action will be consistent with any subsequent remedial activities that might be taken due to the fact that the proposed actions constitute a source control measure.

6. Maps, Pictures and Other Graphic Presentations

- Attachment 1 - Enforcement Addendum (Enforcement Confidential/FOIA Exempt)
- Attachment 2 - POL Removal Action Assistance Letter
- Attachment 3 - Site Location Map
- Attachment 4 - Site Sketch
- Attachment 5 - Structural Integrity Survey (Engineering Report)
- Attachment 6 - ROC of historical/cultural significance by Village of Paguata
- Attachment 7 - Oak Canyon Removal Assessment, October 2012
- Attachment 8 - Laguna Sub-District Historic Mine Locations
- Attachment 9 - Jackpile Sandstone distribution in Laguna Sub-District
- Attachment 10 - ROC of radon abatement system installation feasibility

B. Other Actions to Date

1. Previous actions

Based upon data from the Oak Canyon Removal Assessment indicating ^{222}Rn levels in excess of 4 pCi/L (based on 91 day samples) the EPA had determined that current conditions on this Site posed an unacceptable health risk to the residents residing at this Site. Radon-222 abatement activities were scheduled for this residence as part of the Oak Canyon Radiation Site removal action, as documented in the approved Action Memorandum for that Site. During the preparation for abatement under the aforementioned Action Memorandum, several potential structural integrity issues arose, prompting the aforementioned SIS (*See Attachment 5*) and subsequent feasibility review by the ^{222}Rn installation contractor (*See Attachment 10*). As part of the SIS, the structural engineers designed the only structurally safe method to install a radon-222 abatement system in the structure on the Site. However, during the referenced feasibility review, it was determined that while the abatement system could be installed as designed, it would not function effectively or at all in the removal of excess radon-222 from the residence on the Site, for several reasons. Ergo, it was determined that the excess ^{222}Rn levels in this structure could not successfully be abated. The only viable alternative under the circumstances are replacement or compensation, either of which requires an action specific Action Memorandum and EPA Headquarters approval.

2. Current Actions

Based on the Removal Assessment data indicating ^{222}Rn levels in excess of 4 pCi/L (based on 91 day samples) as discussed above in Section II.A.4, the EPA has determined that current conditions on this Site pose an unacceptable health risk to the residents residing at this Site. The only viable operational option to mitigate the unacceptable health risks to the residents at this Site is compensation.

C. Tribal and Local Authorities' Roles

1. Tribal Actions to Date

The POL, through the LED, has been involved in the historic and current regulatory activities associated with the SA and L-Bar mines and the L-Bar mill in the Laguna Sub-District. EPA has coordinated all Removal Assessment activities on this Site with LED.

2. Potential for continued Tribal response

Neither the POL nor the LED will be able to provide a response action to physically address the site conditions described in this memorandum.

III. THREAT TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT

A. Threats to Public Health

The factors described in Section 300.415 of the National Contingency Plan (NCP), 40 CFR § 300.415, have been considered, and, based on those factors, a determination has been made that a removal action is appropriate to address the hazardous substances present in the contaminated wastes at the Site. Any or all of these factors may be present at a site yet any one of these factors may determine the appropriateness of a removal action.

1. Actual or Potential Exposure to Nearby Human Populations, Animals, or the Food Chain from Hazardous Substances or Pollutants or Contaminants.
40 CFR § 300.415(b)(2)(i).

As discussed above, in Section II.A.3-4, the Removal Assessment identified excess levels of ²²²Rn in the residence on the Site in excess of the referenced EPA acceptable exposure, dose and/or risk limit.

2. The Availability of Other Appropriate Federal or Tribal Response Mechanisms to Respond to the Release. 40 CFR § 300.415 (b)(2)(vii).

At this time, there are no other mechanisms available to respond with the actions described in this memorandum in a timely manner so as to effectively reduce the imminent and substantial endangerment to public health posed by the hazardous substance located on the Site. The POL and the LED do not have the resources available to address the current dangerous conditions at the Site. If other mechanisms become available during the conduct of this response action, the EPA will evaluate those mechanisms as appropriate.

B. Threats to the Environment

The actions taken during this response are designed solely to address a public health threat resulting from the hazardous substance present on the Site which appears to be directly related to the mining operations altering the porosity and permeability of the uranium-bearing Jackpile sandstone and the overlying Dakota sandstone strata in and around the Site.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances, pollutants or contaminants from the Site, if not addressed by implementing the response action selected in this Action Memorandum, will continue to present an imminent and substantial endangerment to public health or welfare or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions Taken

1. Proposed Action Description

a. Distinction between Action Levels and Clean-up Levels

The EPA uses the term "action level" to mean the contaminant concentration level in waste or contaminated environmental media (such as soil or groundwater) which triggers the need to take a response action. For example, hazardous wastes under the Resource Conservation and Recovery Act (RCRA), such as a drummed waste at a given site, which are not contaminating an environmental media, are not subject to a specific action level. They may simply be removed to prevent actual or potential exposures rather than treated to achieve a specific action level.

Action levels should not be confused with "cleanup levels." The cleanup level is the contaminant concentration level which the response action is designed to meet. That is, once the EPA has identified an environmental medium which contains concentrations of hazardous substance which exceeds the action level, the removal action calls for continued response until the concentration of the contaminant in the contaminated medium are below the established cleanup level

For this removal action, both the action level and cleanup level for ^{222}Rn is ≤ 4 pCi/L in indoor air based on 91 day samples.

In developing the action levels and cleanup levels for the Site, EPA Region 6 considered the *Establishment of Cleanup Levels for CERCLA Sites with Radioactive Contamination*, August 22, 1997 (OSWER Directive 9200.4-18), *EPA Assessment of Risks from Radon in Homes* (EPA 402-R-03-003, June 2003, and consulted with NMED to determine whether there were potential state Applicable or Relevant and Appropriate Requirements (ARARs) within the meaning of CERCLA Section 121, 42 U.S.C. § 9621. After the action levels and cleanup levels for this Site were reviewed and found to be consistent with historic action levels and cleanup levels used by the EPA on similar sites, the OSC decided to utilize the aforementioned maximum exposure concentration as the action level and cleanup level for the radon-222 contamination on this Site.

b. Middle Reservoir Road Radiation Site

The EPA proposes to mitigate the imminent and substantial threats to human health, welfare, or the environment by taking the only operationally feasible steps to attain the objectives discussed below to prevent direct human contact and exposure to excess indoor radon-222 present on the Site:

- Current owner/resident will relinquish ownership of the on-site structure to the Village of Paguata for conservation as a non-residential historically/culturally significant structure with the disclosure of excess radon-222 levels.
- EPA will secure access to the contaminated structure on the Site.
- Compensation of contaminated structure resident (owner) to secure permanent alternative housing or construction of a replacement residential structure that is consistent within the meaning of “decent, safe and sanitary” (DSS) as described in the aforementioned URA, 42 USC §§ 4601 *et seq* and its implementing regulations found at 49 CFR § 24.2(a)(8).
- Conduct confirmation radon-222 sampling and analysis to ensure that the radon-222 levels in the replacement structure are below established the EPA action level.

As discussed below, demolition and reconstruction of a contaminated residential structure, is one of the preferred compensation methods utilized by the EPA. However, due to the set of unique circumstances and the designation of the contaminated structure as historically/culturally significant by the Village of Paguata, demolition has been forbidden by the Village (*See Attachment 6*). Site-specific compensation options to achieve the stated goal of this removal action, to abate radon-222 exposure to the residents of this Site to less than the EPA aforementioned action/cleanup level established for this Site, are discussed in detail below.

c. Compensation of Structure Owner

The current owner of the structure is a full-time resident on the Site. The residence is also occupied by the owner’s spouse and adult son. Since the contaminated residence has been designated as historically/culturally significant, EPA will endeavor to maintain the integrity of the structure by erecting the replacement home at an alternate location on the existing 1.2 acre homesite at a sufficient distance from the existing structure. Since the residents can stay in the existing structure during the replacement process, EPA's April 2002 OSWER Directive 9230.0-97, *Superfund Response Actions: Temporary Relocations Implementation Guidance* (Temporary Relocation Guidance) and the definition of a “displaced person” and subsequent requirements of the URA found at 49 CFR 24.2(9)(i)-(ii) do not apply to this removal action. As part of the Sun Clan Road Site removal action, also located on the POL, EPA Region 6 developed and documented an appropriate and consistent method of compensation for a structure owner. In developing EPA Region 6's approach to compensating the owner of a residential structure that will be demolished as part of an EPA proposed removal action to address radiological contaminated structures within the Laguna Pueblo, Region 6 staff consulted: 1) EPA's July 30, 2004 OSWER Directive 93603-24, *Analyzing Compensation Alternatives for Partially or Completely Demolished Structures* (Compensation Policy); 2) the Uniform Relocation Assistance and Real Property Acquisition Policies for Federal and Federally Assisted Programs, 42 U.S.C. §§ 4601 *et seq.*, and its implementing regulations, 49 C.F.R. Part 24 (collectively URA); and 3) Region 9 personnel involved with similar removal actions with cultural sensitivity

issues on the Navajo Nation and the *Region 9 Operating Principles: Access, Temporary Relocation and Compensation, Navajo Nation Radioactive Structures Removal Sites*, June 25, 2009.

The EPA's Compensation Policy (OSWER 93603-24) offers the following alternatives for compensating owners of partially or completely demolished structures: 1) property acquisition and permanent relocation (except at non-NPL sites under removal authority, such as this removal site); 2) providing the owner a financial settlement for the replacement value of the structure or demolished components, where the owner restores or rebuilds; 3) providing the owner "the appraised value of the property [e.g., the structure] but not the estimated cost to restore or rebuild" where the owner "prefers to receive the appraised value of the structure or the demolished components, and not rebuild but retain the land"; and 4) EPA restores or rebuilds the structure using government contractors (*See Compensation Policy at p.4, including fn.6*).

The EPA Compensation Policy requires prior Headquarters' approval if the Region selects options 2, 3, or 4 for completely demolished structures. Option 1 is not applicable at this removal site. The generally preferred EPA compensation under removal authority is to provide the owner with funds to manage the rebuild themselves, and the Policy emphasizes that rebuilding or conducting major restoration of the structures using government contractors is the least preferred method that should be done only in the "rarest of circumstances."

Importantly, the EPA Compensation Policy notes that there "is clearly no single compensation mechanism that works best for every situation." It adds that while "EPA strives to include consideration of the owner(s)' preference in the final [compensation] decision, **the owner(s)' preferences should be balanced with the Agency's responsibility to manage public funds appropriately and within its expertise. The [compensation] determination should be made on a case-by-case basis and is at the discretion of the Agency.**" In other words, the EPA is not required to provide owners with all of the options referenced in the Compensation Policy, and the EPA must take into consideration the particular circumstances of the site when selecting the type/form of compensation it will offer. The Compensation Policy also states that:

The EPA is not responsible for providing an exact replica of the original structure, essentially "like for like." Rather, appropriate replacement housing should be consistent with the URA: decent, safe, and sanitary; meet applicable housing and occupancy codes; be functionally equivalent to the previous house; be adequate in size to accommodate the occupants; and be within the financial means of the displaced persons.

The EPA Region 6 relied heavily on the EPA Compensation Policy, the Region 9 Operating Principles (referenced above) and the existing compensation options which were developed for the Sun Clan Road Site removal action (referenced above), when developing its compensation options for this removal action. In developing these options certain modifications

were needed to address the unique land ownership and real estate market that exists in the Laguna Pueblo. Notably, EPA Region 6 did not conduct an appraisal of the existing residential structure, as the structure is built upon real property that cannot be sold by the individual because the United States owns most of the Laguna Pueblo in Trust for the Laguna Pueblo. The Laguna Pueblo, as the beneficiary of the Trust Land, has the authority to issue or allocate homesites to individuals for residential use of the property. While the individuals do not own the underlying property in fee simple, they do own the "structures" or "improvements" that they build on the homesite. In addition to the aforementioned modifications, EPA Region 6 had to further modify its existing compensation options for this removal action to address the unique factual circumstances. The only viable operational option which is feasible and protective of public health regarding the historically/culturally significant contaminated structure on this Site is to include relinquishment of ownership of the structure to the Village and securing of the said structure as an alternative to demolition.

While it is possible for individuals to sell or rent their homes to another Laguna Pueblo enrollee (Pueblo ordinance) and to obtain mortgages under certain circumstances either through the Laguna Housing Development and Management Enterprise (LHDME) or for modular or pre-fabricated homes, most of the existing residential structures are passed down to family members as per cultural tradition. Based on these circumstances, there is not an active real estate market in the area as contemplated by EPA's Compensation Policy amenable to securing a fair market value appraisal. Accordingly, Region 6, in consultation with ORC and OGC, determined that the resources required to conduct individual appraisals, assuming EPA could even locate professionals willing to conduct them, would not yield reliable results. In lieu of using appraisals, the EPA Region 6 based the value of the home to be demolished on its own market research and estimates for the "materials" (40% of total rebuild cost estimate) and "labor" (60% of total rebuild cost estimate) to rebuild a comparable DSS replacement structure. This value assessment methodology is very similar and consistent with the Region 9 Operating Principles referenced above.

Additionally, the EPA Region 6 decided to use its discretion and not to offer a financial settlement option based on the estimated cost to the EPA for the "materials and labor" for a comparable-sized structure when the resident opts to self rebuild. As such it would be very difficult for the owner to contract an acceptable local builder and conduct the rebuilding operations in a timely manner. Further, in consultation with the POL and LHDME there appears to be no licensed and bonded general construction contractors on POL. All qualified contractors would be from off the POL which leads to historic trust issues which are prevalent between the native and non-native communities. Additionally, the anticipated several month owner rebuild process would put an unreasonable demand on the On-Scene Coordinator's time monitoring the progress and appropriateness of the rebuilding process being conducted by the owner. Further, there is a substantial risk to the Government of not being able to ensure that the replacement home is built using quality materials and any defects in the home are corrected in a timely manner. Although this option is the preferred option in the EPA Compensation Policy, the EPA

Region 6 has deemed this option to be inappropriate, impracticable, and not in the best interest of the Government based on the aforementioned, unique set of conditions associated with this removal action. The EPA Region 9 reached a similar conclusion after implementing this option on their first round of removal actions on the Navajo Nation, and no longer offers this option as part of their compensation package for many of the reasons discussed above.

Based on the unique set of circumstances, facts, and severely limited viable operational options regarding this removal action, the EPA Region 6 has elected to use its discretion within the EPA Compensation Policy to make the following compensation offer to the owner of this residential structure that must be abandoned and relinquished to the Village as part of this removal action:

1) Owner does not want a rebuild – If the owner of the residential structure chooses not to return to the existing homesite, described above, and elects to establish a permanent residence at alternate homesite, the EPA Region 6 will offer a financial settlement based on the estimated cost of the “materials” for a comparable-sized DDS replacement structure (modular home). Based on market research, the EPA Region 6 has found that a comparable-sized DSS replacement structure and foundation would be \$120,000 (taxes and fees not included). As noted below, the total cost estimate for a comparable DSS replacement structure includes estimates for materials (40%) and labor (60%). The Region 6 financial settlement offer to the structure owner would therefore be \$48,000 for the materials costs of the replacement structure.

2) Owner wants a rebuild - If the owner of the residential structure chooses to return to the homesite to re-establish permanent residence, a comparable-sized, functionally equivalent DSS structure (modular home) with a one year warranty on any defects will be built and/or installed by the EPA contractors. The estimated cost of \$130,000 for this option includes the home, foundation, installation, utility hook ups, etc., for turn-key replacement of the residence.

After completion of this removal action, the Site will be referred back to the POL for any further needed conservation, including long term Operation and Maintenance actions on the historic and culturally significant structure on the Site. Further, EPA will request that the structure be designated by the Village of Pagate as non-residential.

d. Other Requirements

Other requirements under the Occupational Safety and Health Act (OSHA) of 1970, 29 U.S.C. § 651 *et. seq.*, and under the laws of States with plans approved under section 18 of the State's OSHA laws, as well as other applicable safety and health requirements, will be followed. Federal OSHA requirements include, among other things, Hazardous Materials Operation, 29 CFR Part 1910.120, as amended by 54 Fed. Reg. 9317 (March 5, 1989), all OSHA General Industry (29 CFR Part 1910) and Construction (29 CFR Part 1926) standards wherever they are relevant, as well as OSHA recordkeeping and reporting regulations, the EPA regulations set forth

in 40 CFR Part 300, and other EPA policies/guidelines relating to the conduct of work at Superfund sites.

2. Contribution to Remedial Performance

The actions described above for the Site will contribute to any presumed remedial cleanup alternative given that the response actions to be taken will constitute contaminant source removal.

3. Description of Alternative Technologies

At this time, there are no other proven alternative technologies that could be feasibly applied at this Site. The appropriate action is to conduct the removal action on the Site as described in this memorandum. If an equally protective and less expensive technology is later identified, it may be considered.

4. Applicable or Relevant and Appropriate Requirements (ARARs)

The proposed removal action will be conducted to eliminate the actual or potential exposure to hazardous substances pursuant to CERCLA, in a manner not inconsistent with the NCP. As per 40 CFR Section 300.415(j), Superfund-financed removal actions under CERCLA § 104 and § 106 shall, to the extent practicable considering the exigencies of the situation, attain the applicable or relevant and appropriate requirements (ARARs) under Federal environmental law.

a. Chemical-specific ARARs - There were no chemical-specific Federal or State ARARs identified that were applicable to this removal action.

b. Location-specific ARARs - All proposed activities at the Site are compliant with any location-specific ARARs including the requirements of, the National Historical Preservation Act 16 USC Section 470 *et seq.* and its implementing regulations found at 36 CFR Part 800, Native American Graves Protection and Repatriation Act, 25 USC Section 3001 *et seq.* and its implementing regulations, 43 CFR Part 10, Archeological Resources Protection Act of 1979, 16 USC Section 47000 *et seq.* and its implementing regulations, 43 CFR Part 7 and the American Indian Religious Freedom Act, 42 USC Section 1996 *et seq.*

c. Action-specific ARARs - There were no action-specific Federal or State ARARs identified that were applicable to this removal action.

d. To-be-considered (TBCs) - In addition to ARARs, other advisories, criteria, or guidance that may be useful in developing the remedy were, as appropriate, identified and

considered.

5. Project Schedule

The proposed actions for this time critical removal action are expected to be completed in 90 days.

B. Estimated Costs

Extramural Costs

Removal Contractors.....	\$ 413,000
START III Contractors.....	\$ 100,000
Subtotal, Extramural Costs	\$ 513,000
Extramural Costs Contingency (20%)	\$ 102,600
TOTAL, EXTRAMURAL COSTS.....	\$ 615,600

VI. EXPECTED CHANGE IN THE SITUATION SHOULD NO ACTION BE TAKEN OR ACTION BE DELAYED

Should the actions described in this Action Memorandum be delayed or not taken, the excess radon-222 inside the residence will continue to pose an imminent and substantial endangerment to the residents occupying the structure.

VII. OUTSTANDING POLICY ISSUES

There are no outstanding policy issues associated with this removal action.

VIII. ENFORCEMENT

See the Enforcement Confidential Attachment #1, for details regarding potentially responsible parties (PRPs) associated with this Site. The total cost to EPA for this removal action, consisting of replacement of the contaminated residential structure with a DSS structure, and securing the existing contaminated historically/culturally significant residential structure for Tribal management is **\$963,608**.

(Direct Cost) + (Other Direct) + (42.63% of Total Direct {Indirect Cost}) =
Estimated EPA Cost for a Removal Action

$$\$615,600 + \$60,000 + (42.63\% \times \$675,600) = \mathbf{\$963,608}$$

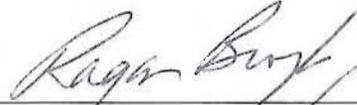
Direct costs include direct extramural costs and direct intramural costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site-specific direct costs, consistent with the Superfund full cost accounting methodology effective October 2, 2002. These estimates do not include pre-judgment interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of a removal action.

IX. RECOMMENDATION

This decision document represents the selected removal action for the Middle Reservoir Road Radiation Site, in the Village of Pagate, Pueblo of Laguna and is developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9601 *et seq.*, and is not inconsistent with the National Contingency Plan (NCP), 40 CFR Part 300. This decision is based on the administrative record for the Site.

Conditions at the Site meet the NCP criteria for a removal found at 40 CFR § 300.415 (b) (2). We recommend your approval of the proposed removal action request. The total estimated EPA cost for the removal is \$963,608. Of this, an estimated \$615,600 comes from regional funds.

APPROVED: _____


Pam Phillips, Acting Director
Superfund Division

DATE: _____

12/12/12

Attachments