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March 14, 2024

Via Electronic Mail

Clint Chisler
Permit Lead
Mining Act Reclamation Program
New Mexico Energy, Minerals, and Natural Resources Department
clinton.chisler@emnrd.nm.gov

**Re: Response to Comments on Supplemental Characterization Work Plan
Section 27 Mine, McKinley County**

Dear Mr. Chisler:

United Nuclear Corporation (“UNC”) is submitting responses to the comments (“RTCs”) received from the New Mexico Energy, Minerals and Natural Resources Department’s Mining and Minerals Division’s (“MMD”) on UNC’s Supplemental Characterization Work Plan (“Work Plan”) for the Section 27 Mine (Stantec, October 2023). The Work Plan was submitted to MMD on October 31, 2023, and UNC received MMD’s comments on February 5, 2024. UNC’s responses to NMED’s comments are set forth below, preceded by a restatement of each comment.

MMD Comments

Comment 1: Please explain what you mean in the following statement found in Section 1.2. It seems like UNC is saying that they won’t be able to clean up the site to the 5/15 pCi/g level required by the Joint Guidance, although later in the document it says that the Joint Guidance will be followed based off of background readings.

“Based on the widespread impacts of windblown tailings from the Phillips Mill (DOE, 1996) and the fact that DOE cleaned surface areas to a standard of 6.2 pCi/g, UNC is not able to characterize potential impacts from the Site to background levels as recommended by the Joint Cleanup Guidance (MMD and NMED, 2016). UNC intends to characterize surface impacts to the RAL described above.”

Response: The Phillips Mill is adjacent to the Section 27 Mine. The Phillips Mill wind-blown tailings cleanup was conducted to a standard of 6.2 pCi/g Ra-226. Therefore, material associated with the mill containing Ra-226 up to this level, which is well above the background proposed for the Section 27 Mine (1.54 pCi/g), remains on the Phillips Mill Site. UNC is not prepared to characterize the Phillips Mill site, and potentially beyond the Mill site, in order to delineate to the background standard given the cleanup level utilized in the Phillips Mill cleanup. However, UNC does intend to adopt the 5/15 pCi/g Ra-226 plus background cleanup level recommended in the *Joint Guidance for the Cleanup and Reclamation of Existing Uranium Mining Operations in New Mexico* (Joint Guidance).

Comment 2: MMD would like to confirm that the gamma survey data in Figure 2 is post reclamation at the time?

Response: Yes, the data were collected in 2010 and 2011, after UNC completed prior reclamation efforts in 2010.

Comment 3: Section 2.4 mentions differentiating between tailing and waste rock. If material with the tailing signature is found, how will clean-up of the material be dealt with in coordination with DOE?

Response: Until the sampling results are obtained and the extent of potential remaining material attributable to the mill site is known, UNC cannot elaborate on the cleanup of this material. UNC plans to follow up with MMD after the sampling results are obtained to discuss the next steps.

Comment 4: Please provide a map that shows the location of the proposed borrow area.

Response: Attached is a figure showing the borrow area used during 2010 reclamation activities at Section 27 (Figure 1). UNC plans to modify the Work Plan to include a figure showing the location of the proposed borrow area.

Comment 5: MMD recommends that UNC coordinate with the New Mexico Department of Game and Fish when developing and implementing ecological surveys related to wildlife.

Response: UNC will coordinate the ecological surveys with the New Mexico Department of Game and Fish.

Comment 6: The Supplemental Characterization Work Plan does not mention evaluation of radon flux in relation to the future repository. Will this be included in the upcoming Supplemental Closeout Plan?

Response: The data collected from the impacted materials and borrow soils will be used to evaluate radon flux from a future repository. Radon flux will be addressed in the Supplemental Closeout Plan.

Comment 7: Please provide a timeline for anticipated start and completion of the Supplemental Characterization work and report. Also please provide MMD with a tentative date for Supplemental Closeout Plan submittal.

Response: If UNC receives MMD's approval of the Supplemental Characterization Work Plan and USEPA's concurrence by April 12, UNC will initiate the field work with the gamma survey in May 2024 and estimates completion of the field work and associated geochemical laboratory analyses in September 2024. This timeline includes time to address NMED's request in Comment 5 below.

As MMD is aware, UNC is proposing to implement an investigation of the other UNC mines located in close proximity to Section 27 under USEPA oversight. UNC plans to evaluate construction of a single repository on or near Section 27 for placement of material from all the UNC mines. At this time, the schedule for the assessment of the other UNC mines has not been determined. Once it is known, UNC will provide a schedule for the Supplemental Closeout Plan.

Comment 8: Please coordinate with the USEPA Region 6 to ensure that no data gap occurs between characterization work that is being done for the EPA and this Permit.

Response: UNC will coordinate with Region 6 to confirm that there are no data gaps. UNC is providing a draft figure showing the proposed Section 27 Investigation Area alongside the proposed Removal Site Evaluation Investigation Area of UNC's nearby mines.

Mining Environmental Compliance Section (MECS) Comments

MECS has the following comments on the Supplemental Characterization Work Plan.

General Comments

Comment 1. Section 1.2, Page 2 – UNC states it is not able to determine site background due to impacts from the adjacent Phillips Mill. However, it states it will determine soil cleanup by the Reclamation Action Level, which requires site background being known. Please state specifically what the site soil cleanup level will be in picocuries per gram.

Response: As presented in Section 2.4.1 of the Work Plan, UNC proposes to use the site background value of 1.54 pCi/g radium-226 determined for the background reference area identified as part of the Tronox Area Uranium Mines West Geographic Sub-Area (GSA). Based on this value and the 5/15 pCi/g radium-226 cleanup guidance values in the Joint Guidance, the cleanup level for the top 15 centimeters of the surface is 6.54 pCi/g and 16.54 pCi/g below this depth.

As discussed in the Work Plan, the conditions in the proposed background reference area are representative of background for the Section 27 Mine consistent with the Joint Guidance and the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM). As MMD is aware, UNC has proposed to use the West GSA background area and associated Ra-226 value to evaluate UNC's other mines in the draft Statement of Work submitted to USEPA. On February 12, USEPA sent UNC and MMD an email indicating that they will accept UNC's use of this background value. A copy of the email is attached. The use of the same background value for neighboring mines will ensure a consistent cleanup approach.

Comment 2. Section 2.1, Page 4 – NMED and MMD have previously approved a site background and reference area. Please provide the new evidence that suggests the reference area is not representative of background concentrations.

Response: The prior site background area is located partially within the limits of the DOE Phillips Mill wind-blown material cleanup area and partially within the impacted area at the Section 27 Mine (see Figure 1). Our review of the prior scanning results from this background area indicates that the estimated mean Ra-226 concentration is 6.1 pCi/g. Based on this information, the prior site background area is not considered representative of natural background.

Comment 3. Section 2.3, Page 5 – “The mine Phillips Mill Cleanup Verification Estimated Ra-226 Concentrations in Grid Locations Near Section 27 Site waste material will be characterized for strength and compaction and will be used in the design of the onsite repository to determine the long-term stability as well as developing technical specifications for placement of the material.” – Please clarify this statement. Is this characterization going to be performed on the Phillips Mill or associated mines? Please indicate how this information will inform the work at Section 27.

Response: Additional text was inadvertently added to Section 2.3. This text will be removed from this paragraph as shown below:

The samples will be collected onsite to characterize the geotechnical properties of borrow source material and mine waste materials that are planned for placement in the consolidation area. Upon completion of the field program, Stantec will review and select samples for laboratory testing to evaluate geotechnical properties of the materials. As these materials have not been characterized previously, this laboratory data is necessary for repository design. ~~The mine Phillips Mill Cleanup Verification Estimated Ra-226~~

~~Concentrations in Grid Locations Near Section 27~~ Site waste material will be characterized for strength and compaction and will be used in the design of the onsite repository to determine its long-term stability as well to develop technical specifications for placement of the material. The characterization of the borrow material is necessary for the cover design to inform aspects of the design including radon modeling, cover thickness, compaction requirements for placement, and growth media requirements for cover vegetation.

Comment 4. Section 2.3, Page 5 –MECS recommends measuring water holding capacity on any materials proposed to be used as final cover at the site.

Response: UNC will include water holding capacity on materials proposed for use as final cover.

Comment 5. Section 2.4, Page 6 – NMED requests the gamma scan results be submitted in draft form, once the additional surveys are complete and the proposed number of samples is known, a month prior to the additional field work beginning. Depending on the results, NMED may request additional sampling.

Response: UNC will submit the gamma scan results and proposed sample locations to MMD in draft form one month prior to commencement of the additional field work.

Comment 6. Section 2.4, Page 6 – Please address how Stantec intends to incorporate the Th 230/Ra 226 results as part of the site characterization, and ultimately, how this informs clean-up. MECS is aware of current investigations at neighboring sites in the region that were not able to conclusively separate mine and mill impacts in soil and groundwater due to the comingling of groundwater that was later applied to the ground surface and other intermingled processes. Regardless of these results, UNC shall address all soil impacts within their current permit boundary and associated with their mining-related impacts.

Response: Stantec plans to analyze samples for uranium, thorium and radium and assess respective ratios to evaluate whether mill impacts are present. Until the potential impacts are understood, it is uncertain how cleanup of mill impacts on the Section 27 Mine will be addressed. The Work Plan text will be modified to clarify that all applicable ratios will be assessed.

Comment 7. Section 2.5, page 7 – MECS would support adoption of the Tronox Central and West GSA background concentration, with the understanding that the EPA has not finalized or adopted these as the final clean-up or background concentrations. UNC should demonstrate that this proposed value is reasonable by comparing the approved background concentration to the EPA background concentration and why this value is representative for the Section 27 Mine. Furthermore, MECS would support the Section 27 Mine as a site for a regional repository location for all UNC uranium mine waste. NMED requests an update on any discussions with EPA Region 6 regarding UNC uranium mine cleanup in Ambrosia Lake.

Response: See UNC responses to MECS Comments 1 and 2. Based on its location relative to historical milling and mining activities and the estimated Ra-226 concentrations in soil, the prior site background area is not considered representative of background for the Section 27 Mine. As noted above, USEPA has concurred with UNC's proposal to use the West GSA background area and associated Ra-226 value as background in this area.

UNC supports exploring the feasibility of utilizing the current mine waste repository at Section 27 to allow the placement of additional mine waste from other UNC mines. In December 2023, UNC submitted comments to USEPA on a Statement of Work for conducting Removal Site Evaluations at other UNC mines and is awaiting feedback from USEPA.

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New Mexico Environment Department (NMED)-Surface Water Quality Bureau (SWQB) Comment

SWQB recommends that the Work Plan describe how the unnamed arroyo will be surveyed so that the lateral and vertical extent and volume of mining-related materials that may have been transported by surface runoff is accurately represented by the survey.

Response: The Work Plan will be updated to provide details on surveying the arroyo extending south-southwest from the site to evaluate the lateral and vertical extent of mining-related materials within the arroyo within the area of the Public Land Survey System section of Section 27. The portion of the arroyo that extends into Section 34 will be addressed as part of UNC's SOW with USEPA. The Section 27 characterization will include conducting a gamma survey with a collimated/shielded detector and, where needed, collection of surface and shallow subsurface samples for ex-situ gamma analysis and confirmation sampling of Ra-226. A collimated detector must be used because the arroyo is incised, and an unshielded detector may pick up shine from the arroyo walls.

Closing

UNC appreciates the opportunity to respond to MMD's comments and will submit a final Work Plan with the changes described above within two weeks of receiving MMD's concurrence on our responses. Consistent with our prior correspondence, it is imperative that a mechanism is established to ensure that the work UNC completes for MMD satisfies the requirements of USEPA and moots the need for additional investigation under CERCLA. Therefore, UNC plans to request USEPA's concurrence that the Work Plan meets CERCLA requirements prior to proceeding with the characterization efforts under State jurisdiction. UNC will update MMD as we proceed with efforts to obtain this concurrence.

Please contact the undersigned if you have any questions or would like to discuss in further detail.

Sincerely,



Lance M. Hauer, P.E.
Legacy Site Team Leader

Enclosures: 2/12/2024 Email from EPA
Figure 1

Cc: David Ennis, MMD
Kevin Shade, USEPA
Kelly Johnson, Stantec
Monique Mooney, GE
Kate Campbell, Manko

From: [Shade, Kevin](#)
To: [Chisler, Clinton, EMNRD](#); [Hauer, Lance M \(GE Aerospace, US\)](#); [Maurer, Anne, ENV](#); [Ennis, David, EMNRD](#)
Cc: [Rheubottom, Amber, ENV](#)
Subject: EXT: RE: St. Anthony State/EPA/UNC Discussion
Date: Monday, February 12, 2024 1:47:15 PM

WARNING: This email originated from outside of GE. Please validate the sender's email address before clicking on links or attachments as they may not be safe.

Good afternoon all,

EPA has had further discussions on UNC's proposal to use the background developed during the Tronox field work. At this time we are comfortable with the approach. EPA will continue to review UNC's December 22 draft SOW and we hope to have comments back to UNC in the next couple of weeks.

Regards,
Kevin

-----Original Appointment-----

From: Chisler, Clinton, EMNRD <Clinton.Chisler@emnrd.nm.gov>
Sent: Thursday, February 8, 2024 10:06 AM
To: Chisler, Clinton, EMNRD; Hauer, Lance M (GE Corporate); Shade, Kevin; Maurer, Anne, ENV; Ennis, David, EMNRD
Cc: Rheubottom, Amber, ENV
Subject: St. Anthony State/EPA/UNC Discussion
When: Friday, February 9, 2024 10:30 AM-11:30 AM (UTC-07:00) Mountain Time (US & Canada).
Where: Microsoft Teams Meeting

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Microsoft Teams meeting

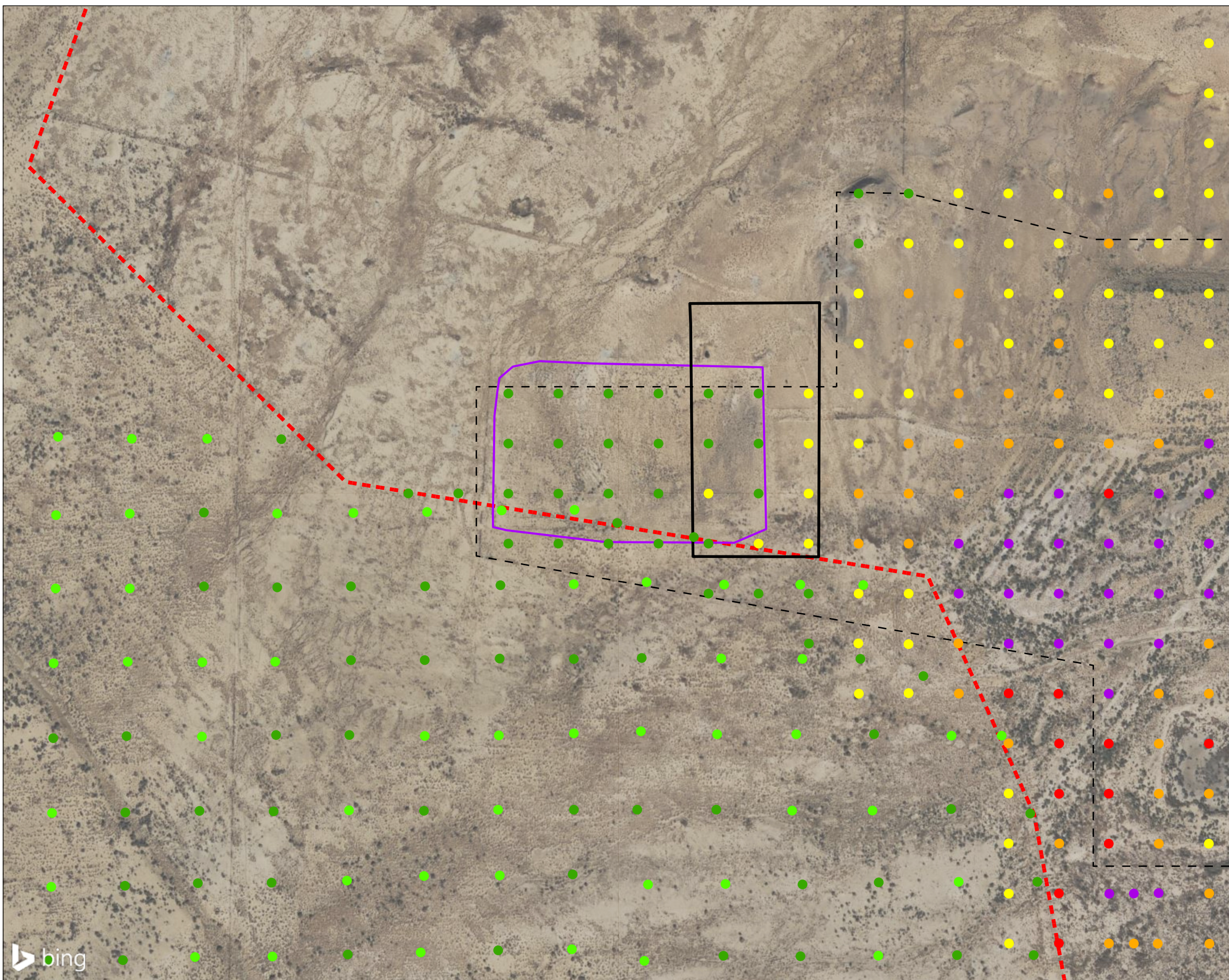
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Passcode: VdD3ms
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Or call in (audio only)

[+1 505-312-4308,,371027380#](#) United States, Albuquerque

J:\182922679_ArcPro\MyProject\3.0New_Mexico_Gamma_Radiation - Copy.aprx - Section 27 Historical Background and Borrow Areas - Revised: 2024-02-13 - By: jallied

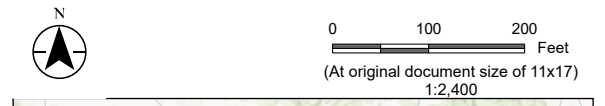


Theoretical Gamma Scan Results in Picocuries Per Gram (pC/g)

- 0 - 1.5
- 1.6 - 6.5
- 6.6 - 10
- 10.1 - 20
- 20.1 - 30
- 30+

- 2010 Approximate Borrow Area
- 2007 Background Area
- Section 27 Permit Boundary
- Phillips Mill Limit of Excavation (Approximate)

- Notes**
1. Coordinate System: NAD 1983 StatePlane New Mexico West FIPS 3003 Feet
 2. Data Sources: Stantec
 3. Background: Bing Imagery



Project Location: Chinle County, NM
 Prepared by JA on 2024-02-13
 TR by CB on 2024-02-13
 IR by KJ on 2024-02-13

Client/Project: General Electric Company
 Project: Section 27 Mine Permitting Support
 182922679

Figure No.
1

Title
Section 27 Historical Background and Borrow Areas

