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July 26, 2017

Ms. Andrea Kock, Deputy Director
Decommissioning and Uranium Recovery Licensing Directorate
Division of Waste Management and Environmental Protection
Office of Federal and State Materials and Environmental Management Programs
U.S. Nuclear Regulatory Commission
11545 Rockville Pike
Rockville, Maryland 20852-2738

Dear Ms. Kock:

Subject: **Sweetwater Uranium Project – Docket Number: 40-8584**
Source Material License SUA-1350 – Response to the June 26, 2017 Letter Entitled ***Kennecott Uranium Company (KUC), Sweetwater Request for Additional Information Re: The Sweetwater License Renewal***

The U.S. Nuclear Regulatory Commission (NRC) is conducting a review of Kennecott Uranium Company's Sweetwater Uranium Project's (Kennecott) request for a ten-year renewal of Source Material License SUA-1350 that was submitted on July 24, 2014. On June 29, 2017, in the letter entitled *Kennecott Uranium Company (KUC), Sweetwater Request for Additional Information Re: The Sweetwater License Renewal,* the Nuclear Regulatory Commission (NRC) provided a third set of Requests for Additional Information (RAIs) in addition to the first set provided in a letter dated July 13, 2015 (ML15167A373), and a second set provided under cover of letter dated February 12, 2016. In this cover letter dated June 26, 2017, the third set of requests is provided as a follow-up to the licensee's responses dated October 18, 2016 to the draft license conditions. Below please find a preliminary response to the June 26, 2017 requests and a schedule for providing a complete response.

The third (June 2017) set of requests included:

- Two (2) requests addressing air effluent monitoring and;
- two (2) requests addressing groundwater detection monitoring during resumed operations

The following outlines the approach to address and respond to each of the requests. The timeline to complete the responses is presented in Table 1 at the end of this letter.

Compliance with the Requirements of 10 CFR 51.60

RAI #1. The applicant needs to provide the NRC with a copy of Procedure-15 (EP-15) Stack Sampling for NRC review. The applicant also needs to provide the NRC with a methodology that demonstrates that the applicant can reduce operational airborne particulate effluent to levels that are ALARA.

In response to this request, Kennecott Uranium Company will review the appropriate and applicable regulatory guidance regarding stack sampling for air effluent monitoring for particulates and research effective sampling techniques employed by other licensees and will propose monitoring to document that operational airborne particulate effluents will be at levels that are ALARA. The proposed solution will be protective, practicable and in keeping with discussions with the licensee's project manager.

RAI #2. If KUC wishes to use alpha track detectors (ATDs) for stack monitoring of radon emissions during operations, KUC needs to provide additional information on the use of ATDs in the facility stack.

Kennecott Uranium Company will review the appropriate and applicable regulatory guidance regarding ambient air and stack sampling for radon and also research effective sampling techniques used by other licensees as well as those proposed by vendors. Kennecott Uranium Company will propose a monitoring methodology to document that operational radon effluent through stacks will be at levels that are ALARA. The proposed solution will be both protective and practicable.

RAI #3. Regarding KUC's proposed use of a potassium bromide tracer, the NRC staff observes that the proposed alternate detection monitoring program does not provide sufficient detail for the NRC staff to reach a reasonable assurance finding on whether KUC's proposal meets Criterion 7A. In addition, the applicant should acknowledge that conductivity values have continued to exceed the NRC approved detection standard, and propose an alternate to the 350 μmho/cm conductivity standard.

This request is a detailed request regarding the proposed monitoring plan. Kennecott Uranium Company will consider and propose a detailed leak detection monitoring program intended to provide NRC reasonable assurance that Criterion 7(A) will be addressed. Literature review results, volumetric calculations, laboratory analysis of bromide concentrations in background ground waters and mill solutions, travel time calculations, and monitoring procedures (including methods and detection limits) will be provided. Testing for bromide in the existing tailings impoundment fluid and two (2) background wells has begun. A pumpback well and a third background well have been sampled for testing for bromide. Kennecott Uranium Company will acknowledge observed conductivity data and will address whether conductivity or another parameter should be included as an indicator parameter in leak detection monitoring.

RAI #4. Given that KUC also proposes to use a tracer consisting of potassium bromide in the evaporation ponds as an alternate to the detection monitoring requirements in Criterion 7A, the licensee needs to provide a detailed detection program for the evaporation ponds that addresses the same issues as identified for the new tailings impoundment monitoring.

Kennecott Uranium Company will extend the analyses prepared in the response to request #3 to application in leak detection monitoring at the evaporation ponds.

Sincerely yours,

Oscar A Paulson

Oscar Paulson
Facility Supervisor

Cc: James Webb – Project Manager – (2)
Director – USNRC DNMS – Region IV (w/o enc.)
Rich Atkinson

Table 1 **Summary of Approach and Schedule for Responses to RAIs**

RAI Number	RAI Topic	Approach Summary	Scheduled Date for Ultimate Response
1	Air Effluent – Stack sampling for particulate emissions	KUC will provide a copy of Environmental Procedure-15 (EP-15) and will propose stack sampling for particulate emissions in accordance with appropriate regulatory guidance	October 1, 2017
2	Air Effluent – Stack sampling for radon emissions	KUC propose stack sampling for radon emissions in accordance with appropriate regulatory guidance	October 1, 2017
3	Groundwater detection monitoring for new tailings impoundment	Provide a detailed monitoring program using potassium bromide as a tracer in sufficient rigor to demonstrate compliance with Criterion 7(A) for the new tailings impoundment	October 1, 2017
4	Groundwater detection monitoring for new evaporation ponds	Provide a detailed monitoring program using potassium bromide as a tracer in sufficient rigor to demonstrate compliance with Criterion 7(A) for the new evaporation ponds	October 1, 2017