



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

October 12, 2021

Mr. Rob Hunt
Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

SUBJECT: RESPONSE TO MISSOURI DEPARTMENT OF NATURAL RESOURCES' COMMENTS REGARDING THE DECOMMISSIONING OF THE SIGMA-ALDRICH FORT MIMS SITE, MARYLAND HEIGHTS, MISSOURI (DOCKET NO. 030-10716)

Dear Mr. Hunt:

Thank you for providing the comments from the Missouri Department of Natural Resources (MDNR) on the decommissioning of the Sigma-Aldrich (Sigma) Fort Mims site in Maryland Heights, Missouri, in your August 10, 2021 letter (Agencywide Documents Access and Management System [ADAMS] Accession No. ML21258A322). The U.S. Nuclear Regulatory Commission's (NRC's) responses to the MDNR's comments are included in the Enclosure.

In accordance with Title 10 of the *Code of Federal Regulations* Part 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's ADAMS. ADAMS is accessible from the NRC Web site at <https://www.nrc.gov/reading-rm/adams.html>.

If you have any further questions, please contact me at (301) 415-6755 or via email at George.alexander@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "George Alexander".

Signed by Alexander, George
on 10/12/21

George Alexander, Risk Analyst
Risk and Technical Analysis Branch
Division of Decommissioning, Uranium Recovery,
and Waste Programs
Office of Nuclear Materials Safety
and Safeguards

R. Hunt

2

Docket: 030-10716

License No. 24-16273-01

Enclosure:

Response to MDNR Comments

**Response to Missouri Department of Natural Resources Comments on the Draft
Environmental Assessment for the Decommissioning of the
Sigma-Aldrich Fort Mims Site, Maryland Heights, Missouri**

1. Comment: The Environmental Assessment (EA) does not include a summary of the activity concentrations found in these areas or explain if these areas are above the Environmental Protection Agency (EPA)/U.S. Nuclear Regulatory Commission (NRC) Memorandum of Understanding (MOU) Table 1 values for residential soil concentrations.

NRC Response: The Safety Evaluation Report (SER) describes the residual radionuclide activities in the soil and groundwater. These activities are below the EPA/NRC MOU values for industrial/commercial land use. The SER also provides justification that industrial and commercial activities are the reasonably foreseeable land uses at the site. Therefore, consultation with the EPA EPA/NRC MOU was not triggered.

2. Comment: The EA states that anticipated future land use is industrial. If the residual contamination exceeds residential values, we recommend an institutional control to ensure future land use is restricted to industrial use and that any contaminated soils are properly managed.

NRC Response: In addition to evaluating the most likely scenario of industrial and commercial land use, the NRC staff also evaluated the less likely but plausible scenario of suburban resident. The NRC staff concluded that industrial worker and suburban resident scenarios do not exceed the criteria of 0.25 mSv/y (25 mrem/y) for unrestricted use in section 20.1402 of Title 10 of the *Code of Federal Regulations*.

In addition, the NRC staff evaluated a resident farmer scenario, which NRC staff determined to be very unlikely in the near future, as a bounding scenario. For the resident farmer scenario, the NRC concluded that the potential dose could exceed the criteria in the near future, but that dose would quickly decrease to less than the regulatory criteria. In the SER, the NRC concluded that after 10 years, the dose to a resident farmer is projected to be less than 1 mrem/yr. In other words, for the period of time that the dose to a resident farmer could exceed the criteria, the NRC staff do not think a resident farmer scenario is plausible based on current land use and local zoning restrictions. Furthermore, the dose projections were based on earlier site characterization data. More recent soil sampling data indicates that the potential dose to a resident farmer would be significantly less due to migration of C-14 that has occurred since the earlier soil sampling event. Accordingly, NRC staff does not require institutional controls for this site.

3. Comment: We further recommend the EA, or the SER describe the residual contamination in more detail and explain how it will be managed if future excavation disturbs the soil, or if land use changes.

NRC Response: The SER describes the residual contamination at the site, including the location and activity of radionuclides. NRC determined that the site meets the criteria for unrestricted use. Accordingly, the site does not require ongoing management.

U.S. Nuclear Regulatory Commission's Response to Missouri Department of Natural Resources' Comments on Sigma Aldrich Draft Environmental Assessment DATE October 12, 2021

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ADAMS Accession No.: Ltr ML21277A027

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