

Response to Comments

Reference: Letter from Jill Lipoti, New Jersey Department of Environmental Protection, to Christopher Clayton, U.S. Department of Energy, December 23, 2008

NJDEP Comment:

- The NJ Department of Environmental Protection (NJDEP) believes that the US Department of Energy (DOE) should assume responsibility for this site under the FUSRAP program and perform a complete characterization and cleanup. The contamination that was discovered outside the original remediated portion does not meet NJDEP's release criteria.
- For the two locations where sampling was performed at greater than 6 inches, the concentration of radionuclides increased. It is also stated in the report that at most locations, radiation levels increased slightly with depth. Therefore, the NJDEP cannot agree that the lateral and vertical extent of contamination at this site has been defined. As such, no judgment can be made as to whether the site meets release criteria.

DOE response: DOE concurs in the assessment that the contamination outside the remediated area does not meet State cleanup criteria. DOE will therefore refer the site to the U.S. Corps of Engineers for further assessment to determine if the occurrence meets criteria for remediation under FUSRAP.

NJDEP Comment:

Executive Summary and Introduction

It is stated that the State of New Jersey contracted for a radiological survey of the entire former Landfill site. This is not correct. Middlesex Borough contracted for an investigation of the site, both chemical and radiological. This statement is in the Introduction (Section 1.0) as well.

DOE response: This statement will be corrected.

NJDEP Comment:

3.0 Site Description

The report states that the current site use is recreational. This sentence should be deleted, as ATV use and foot traffic are from trespassers on the site. The Borough does not sanction these activities.

DOE response: The intent of this statement was to indicate that a recreational use scenario is the best model of exposure to receptors, which supports the last paragraph of Section 8.0, "Summary." that there are no unacceptable risks to casual users. The report will clarify that the intended future use, not the current use, is recreational.

NJDEP Comment:

5.4 Integrated Survey Strategy Sampling

The report states that localized shallow sampling, guided by monitoring of direct gamma level, was performed at five locations of elevated direct surface radiation. Sample locations are shown on Figure 4. Figure 5 then gives different locations of elevated surface radiation identified by gamma walkover. It is unclear why there are two separate maps with different locations on each (but using the same numbering system). The text indicates that the same instrument system was used for both scans. This is confusing.

The outline of Figure 3 should be displayed on Figure 4 and shaded. Another map should be prepared to indicate the gamma readings on all accessible areas. Only a tiny portion of the surveyed area is represented in Figure 3 when the coordinates are transposed onto Figure 4.

DOE response: DOE is developing a gamma scan map that will show anomaly locations, gamma activities, and sample locations.

NJDEP Comment:

Gamma Scans

The NJDEP requests a complete gamma scan map covering all areas that were surveyed. What is the area of the elevated readings on the southern portion of the landfill? This report gives no indication of the extent of the contamination because all the scan data is not presented.

DOE response: A gamma survey map is being prepared.

NJDEP Comment:

6.1 Sampling

The report states that "A sample from the generally elevated area in the northwest portion of the site contained 39.4 pCi/g of Ra-226, 22.3 pCi/g of U-238, and 35.0 pCi/g of Th-232." It should specify that this is sample number 5 on Figure 4.

DOE response: This will be clarified in the report.

NJDEP Comment:

7.0 Discussion

The report states that current use of the property is recreational and industrial. Because the Borough is currently investigating the site for chemical and radiological contamination, there is no current use of the property.

DOE response: The report will clarify that the intended future use, not the current use, is recreational.

NJDEP Comment:

There is a typo in the sentence that begins "Several years later, DOE implemented..." The abbreviation 'DOE' should be removed at the end of that sentence.

DOE response: The typo will be corrected.

NJDEP Comment:

Since the contaminated areas identified were outside of the original DOE FUSRAP remediated area, the DOE's guidelines at the time of the original remedial action at the Landfill are not applicable.

DOE response: DOE concurs in the assessment that the contamination outside the remediated area does not meet State cleanup criteria. DOE will therefore refer the site to the U.S. Corps of Engineers for further assessment to determine if the occurrence meets criteria for remediation under FUSRAP.

NJDEP Comment:

The elevated measurement criterion used in this report is outdated. MARSSIM methodologies should be used to determine if elevated areas meet criteria, but only after a complete characterization, remediation, and final status survey are performed.

DOE response: DOE concurs in the assessment that the contamination outside the remediated area does not meet State cleanup criteria. DOE will therefore refer the site to the U.S. Corps of Engineers for further assessment to determine if the occurrence meets criteria for remediation under FUSRAP.

NJDEP Comment:

The DOE's assessment of radiation exposure to site occupants ignores the inhalation and soil ingestion pathways. Determination of dose should not be limited to the external exposure pathway. Even so, 40 mrem per year does not meet the NJDEP release criterion of 15 mrem/y.

DOE response: DOE ignored the inhalation and ingestion pathways because they have not been significant risk drivers under industrial or recreational use scenarios, based on work with uranium mill tailings in soil. The 40 mrem/yr total effective dose equivalent (TEDE) calculation is for an industrial exposure scenario that would not occur at the site, is conservative with regard to the actual doses received by the maximally exposed receptor, and is offered in the survey report as a point of reference. A recreational use exposure would result in a much lower TEDE because the time on site would be less. The entire discussion is offered to indicate there has been no unacceptable risk to casual users under current site conditions.

DOE will refer the site to the U.S. Corps of Engineers for further assessment to determine if the occurrence meets criteria for remediation under FUSRAP.

NJDEP Comment:

8.0 Summary

The report states that the contamination at the southern portion of the Landfill does not appear to be uranium or thorium ore, as was the contaminant identified by previous surveys of the northern portion. The NJDEP believes that the contamination at the southern end of the property is consistent with samples taken at the Middlesex Sampling Plant (MSP), where disequilibrium between Uranium and Radium was commonplace. The U-238 concentration for sample 1 is reported as 12.6 pCi/g. This is twelve times background concentration and the ratio between U and Ra is within the range of ratios at MSP considering counting, sampling, and preparation uncertainties.

DOE response: DOE will refer the site to the U.S. Corps of Engineers for further assessment to determine if the occurrence meets criteria for remediation under FUSRAP.