Comments on the Sandy Fire NEST Response and Data Summary

The Sandy Fire started on May 18, 2026, and was fully contained on May 27, 2026, Although the fire did not encroach onto the SSFL property, the close proximity to Area IV, prompted Los Angeles County Radiation Management to enlist the assistance of the Department of Energy (DOE) National Nuclear Security Administration (NNSA)[1] Nuclear Emergency Support Team (NEST) Radiological Assistance Program (RAP).

The Sandy Fire NEST Response and Data Summary Report documents results of air monitoring off-site of SSFL (collected during and after the fire) and radiation exposure rates on-site (taken May 21, 2026) and was prepared and dated August 13, 2026. The Sandy Fire NEST Report was posted on DTSC's website at an unknown date some time on or after August 13, 2026.[2]

Appendix A: Map of Vehicle-Borne Background Dose Rates at the Santa Susana Field Laboratory

The objective of this program is articulated in the Sandy Fire NEST Report,

- *"The RAP team performed vehicle-borne radiation surveys to characterize existing levels of ground contamination on the SSFL grounds."*
- *"A RAP vehicle outfit with two large (2"x4"x16") sodium iodide (NaI) detectors was driven along all accessible roads [at SSFL], collecting background radiation data. The data from this survey was used to assess and document background levels of contamination in the area before any fire damage occurred. The results of this survey are shown in Appendix A."*

The gamma exposure rate "data," shown in Appendix A (attached), taken on May 21, 2026,[3] is **not quantitative**. Exposure rate units are claimed to be in mR/hr (milliroentgens per hour) or millirem per hour. Which is it? No quantitative data is provided. The blue line traversing Areas I, II, III and IV is labeled *"consistent with background"* but is meaningless.

[1] On the second line of the Sandy Fire NEST Report, NNSA is incorrectly identified as the National Nuclear **Emergency** Administration.

[2] NNSA NEST RAP Region 7. "Sandy Fire NEST Response and Data Summary: Ventura County, California: May 20-22, 2026." August 13, 2026. https://www.dtsc-ssfl.com/files/lib_wildfires/wildfires/71100_2026.08.13_Sandy_Fire_NEST_Response_and_Data_Summary.pdf

[3] The creation and modified dates on the Appendix A figure are incorrectly stated to be Pacific Standard Time (PST). May 21, 2026, is actually Pacific Daylight Time (PDT).

The blue line is simply the path of the GPS-tracked vehicle-mounted NaI detectors. If the blue line is *"consistent with background,"* then DOE needs to show the measured data and show the DOE estimate of background and compare the two quantitatively. Typical gamma exposure rate at SSFL is between 10 and 20 μR/hr (micro roentgen per hour), is variable, and a function of elevation, geology and potential operational contaminants. The quote above alleges that "*the data from the survey was used to assess and document background levels of contamination.*" No correlation between non-reported exposure rate data and *"background levels of contamination"* is provided. If *"contamination"* had been detected then this would not have been *"background."* The words do not make sense, and in the absence of any data, this section of the RAP report is meaningless.

The 2012 EPA radiological survey of Area IV included a complete surface exposure rate scan using comparable GPS-tracked NaI detectors as used by NEST. In contrast to the NEST conclusion, EPA did identify locations of elevated exposure rates and associated contamination of anthropogenic radionuclides. These locations have not been remediated during the subsequent fourteen years since the EPA Survey.

Nevertheless, the Appendix A figure has **APPROVED** in bold capital red letters, not once, but twice. Therefore, we are led to believe that some anonymous individual[4] of the NNSA Consequence Management Home Team (702-794-1665) reviewed this non-existent data and approved it for public release. On November 19, 2026, the NNSA Consequence Management Home Team was contacted by phone to explain the Appendix A figure. A voice mail was left outlining these issues and a request for a call-back. As of close of business on November 19, 2026, no response has been received.

Appendix B: Air Monitoring Results

Seven locations were chosen for air sampling surrounding SSFL, three in Simi Valley, one in Chatsworth, one in Bell Canyon, one in West Hills, and one in Oak Park. One might have thought that air sample locations surrounding the fire in Simi Valley would have made more sense. SSFL did not burn before, during or after the sampling periods and Boeing/DOE/NASA already had a ring of sixteen air sampling stations at SSFL, eight of which continuously monitor for radionuclides.

[4] David Gragg, NNSS eDC/RO ID: 106481 performed a classification review of the Sandy Fire report. However the author, editor, and/or approver of the report are not identified.

Each of the seven NNSA/NEST/RAP locations were sampled three times. The first set collected by the RAP teams on May 22, 2026, the second and third sets collected by staff of the Los Angeles County Radiation Management team on May 26 and 29, 2026.

Analysis of air samples were performed by two labs at the Lawrence Livermore National Laboratory (LLNL). Gamma spectroscopy (Cs-137 and Th-228) was performed by the Environmental Radioanalytical Monitoring Laboratory (EMRL).[5] Gross alpha/beta analysis was performed by the Radiological Measurement Laboratory (RML).

There was apparently confusion and inconsistent instructions to the two labs. EMRL (gamma spectroscopy) was told to report activity per filter sample *"allowing the end-user to convert the activity to a concentration per volume if required."* RML (alpha/beta) was told to report activity per volume of air. Why were the labs provided inconsistent instructions? Allegedly there was also uncertainty over the air volumes, though air volume data is reported in two tables to 5, 6, and 7 significant places. Volumes in the gross alpha/beta table and the metadata table are inconsistent. Are the volumes credible and usable or not? Which are correct?

In order to compile the Cs-137 and Th-228 data into activity per volume and to facilitate comparison to DOE[6] and NRC[7] regulatory limits, the reported Cs-137 and Th-228 activity/sample (μCi/sample) has been converted to activity/volume (μCi/mL) by dividing both activity and MDA by air volume in Table 1 below.

Missing Cs-137 and Th-228 Data

The 0.00E+00 values for Cs-137 activity and 2σ uncertainty for all 21 air samples are not consistent with industry practice. These zeros have been questioned by a community member during a recent DOE ETEC CONNECT public meeting.[8]

[5] It is uncertain whether the lab name is Environmental Radiological Monitoring Laboratory (ERML) or Environmental Monitoring Radiological Laboratory (EMRL). Both are used in the Sandy Fire NEST Report.

[6] DOE. Derived Concentration Technical Standard. DOE SD-1196-2022. Table 7. December 2022. https://www.energy.gov/sites/default/files/2026-04/DOE-STD-1196-2022.pdf

[7] NRC. 10 CFR 20, Appendix B. Annual Limits on Intake (ALIs) and Derived Air Concentrations (DACs) of Radionuclides for Occupational Exposure: Effluent Concemtrations: Concentrations for Release to Sewerage.
https://www.ecfr.gov/current/title-10/chapter-I/part-20#Appendix-B-to-Part-20

[8] DOE Public CONNECT Meeting. Simi Valley. November 12, 2026.

Reporting of radionuclide air concentrations (or indeed any volumetric radionuclide concentrations in soil or water) should never be zero. Laboratory analyses for specific radionuclides and/or gross alpha/beta **should always** be reported with three values,

(1) a measured value or activity,
(2) an uncertainty or counting error range, usually the +/-1.96σ (2-sided 95% confidence level), or the +/-1σ (2-sided 68% confidence level), and
(3) the minimum detectable concentration (MDC).

If the measured value equals or exceeds the MDC, then the radionuclide is "detected." If the measured value is less than the MDC, then the radionuclide is a "non-detect" and usually flagged/qualified by the lab with a "U." This is a standard convention in the nuclear industry.

See examples of this standard reporting in the Boeing 2024 Annual Air Monitoring Report. Boeing's Fourth Quarter 2024 and 2024 Annual Report. Appendix D, Appendix E, pages 389 and 392.

Occasionally, one may see measured results (activity) reported as MDC or <MDC (meaning less than the detection level) and therefore non-detect. This is common when reporting chemical contaminants but should be avoided when reporting radionuclides. This is referred to as left-censored data. It is likely that non-detect results have been interpreted as zero, by someone not familiar with industry convention. This is inappropriate and misleading and is a surprising failure by the DOE NNSA NEST RAP. A series of results of zero is a physical and statistical impossibility. However, a set of non-detects is always a possibility and would indicate, in this case, that air samples were not contaminated with detectable levels of Cs-137.

Occasionally, laboratories may report a **measured value as a negative number**. This may occur if the sample count is less than the instrument background count. The negative measured value should still be reported, but in the event that multiple sequential measurements are averaged over a quarter (as with the bi-weekly gross alpha/beta measurements in the SSFL Air Monitoring Program), then it is acceptable to replace the negative number with zero. A negative concentration is obviously a physical impossibility, and including negative concentrations in an averaging process would incorrectly bias the average too low. This elimination of negative concentrations is conservative. See footnotes in Appendix D and Table 9 in the Boeing 2024 Annual Report.

Three detectable Th-228 air samples are reported with the implication that the remaining 18 air samples were non-detect for Th-228. However this non-detect data is not reported.

The text states, *"outside of this, no other Naturally Occurring Radioactive Material (NORM) or man-made nuclides were detected."* This begs the question, what other gamma emitting radionuclides were requested from EMRL. Data should be presented that demonstrates the above statement. Was alpha spectroscopy analysis requested for isotopic uranium. thorium and plutonium? If not, why not?

Detection limits of any measurement should always be below the relevant regulatory limit. The MDC (µCi/mL) calculations for Cs-137 in Table 1 demonstrates that the MDCs are all orders of magnitude below the DOE and NRC regulatory limits. Even if the air volumes are not super accurate the MDC is a factor of ~1,000 below the DOE regulatory limit and ~5,000 below the NRC regulatory limit. Therefore the allegation from a community member that air sample Cs-137 MDCs are too high is incorrect.[9,10]

Interestingly, the three Th-228 detects are less clear. Both the activity and MDC are barely less than the DOE regulatory limit of 1.00E-13 µCi/mL. While both activity and MDC exceed the NRC regulatory limit of 2.00E-14 µCi/mL.

Gross Alpha/Beta

The statement, *"gross alpha/beta analysis found samples were consistent with background levels of NORM"* is not supported without additional isotopic specific analyses and reporting of data. *"Background levels of [airborne] NORM"* have not been established. Comparison of gross alpha results to the conservative alpha emitter, Pu-239 regulatory limit (1.1E-13 µCi/mL) and comparison of gross beta results to the conservative beta emitter, Sr-90 limit (9.6E-12 µCi/mL) ensures that dose limits to the public are met. See comparison to regulatory limits in Table 1 below.

Gross alpha activities are a mixture of detects and non-detects. All MDCs are less than both DOE and NRC regulatory limits. All activities are less than both DOE and NRC regulatory limits.

Gross beta activities are all detects. All MDCs are less than both DOE and NRC regulatory limits. All activities are less than both DOE and NRC regulatory limits.

[9] DOE Public CONNECT Meeting. Simi Valley. November 12, 2026.

[10] DTSC Virtual Meeting on Boeing's Groundwater Draft CMS. November 18, 2026.

Editorial Issues

The CRBN ID No. of SCN-063-000013 in the Cs-137 table appears to have been mis-identified. It should be SCN-06E-000013.

The CRBN ID No. of SCN-06E-000005 in the gross alpha table shows the +/-2σ uncertainty to be -5.23E-16 μCi/mL. A negative confidence limit is not physically meaningful.

Activity, uncertainty and MDC for both samples SCN-06E-000004 and SCN-06E-000006 are all identical which is highly unlikely. Transcription of the original laboratory data reports is likely in error.

Conclusions

This Sandy Fire "report" concludes by stating, *"As expected, the results of samples and measurements were consistent with natural levels of background radiation."* There is no reason to expect that air sampling of Simi Valley generated smoke from the Sandy Fire should indicate any other conclusion. However the less than professional presentation of air data leaves DOE open to criticism.

The objective of the on-site exposure rate measurements is puzzling. Why was it done? The lack of any reported data makes it hard to understand how DOE expects the public to accept that exposure rates are *"consistent with background."* Why does DOE wish to use a Sandy Fire NEST Report to inappropriately argue that SSFL (in particular Area IV) is *"consistent with background"* when it is not?

"The Nuclear Emergency Support Team (NEST) is NNSA's multi-mission nuclear emergency response capability that leverages the Department of Energy's world-class scientists and technical experts to contend with the Nation's most pressing radiological and nuclear challenges."[11]

The lack of quality control by an organization whose mission is to protect the health and safety of the American public, after serious nuclear threats, is surprising. The off-site air sample collections and on-site field exposure rate measurements by RAP personnel, and air sample analysis by the LLNL labs is assumed to have been conducted and documented according to established procedures and quality control. However the public sees none of that in the subject report. The failure has been the generation of the "Sandy Fire NEST Response and Data Summary" report that appears to have been slapped together without much thought by an intermediary.

[11] DOE NEST Website. https://www.energy.gov/nnsa/nuclear-emergency-support-team-nest

It is suspected that the above criticisms may have been one reason for the following DTSC disclaimer attached to the Sandy Fire NEST Report.

> *"This report was prepared by the US Department of Energy (DOE) Radiological Assistance Program team. DTSC is providing the report solely for the purpose of making the air monitoring results publicly available. DTSC does not offer a position on, nor does DTSC's release of this report constitute agreement with, the non-technical narrative contained in the report, including, but not limited to, the description of response actions taken by DTSC, local governments, and state agencies."*

Appendix A: Map of Vehicle-Borne Survey Results

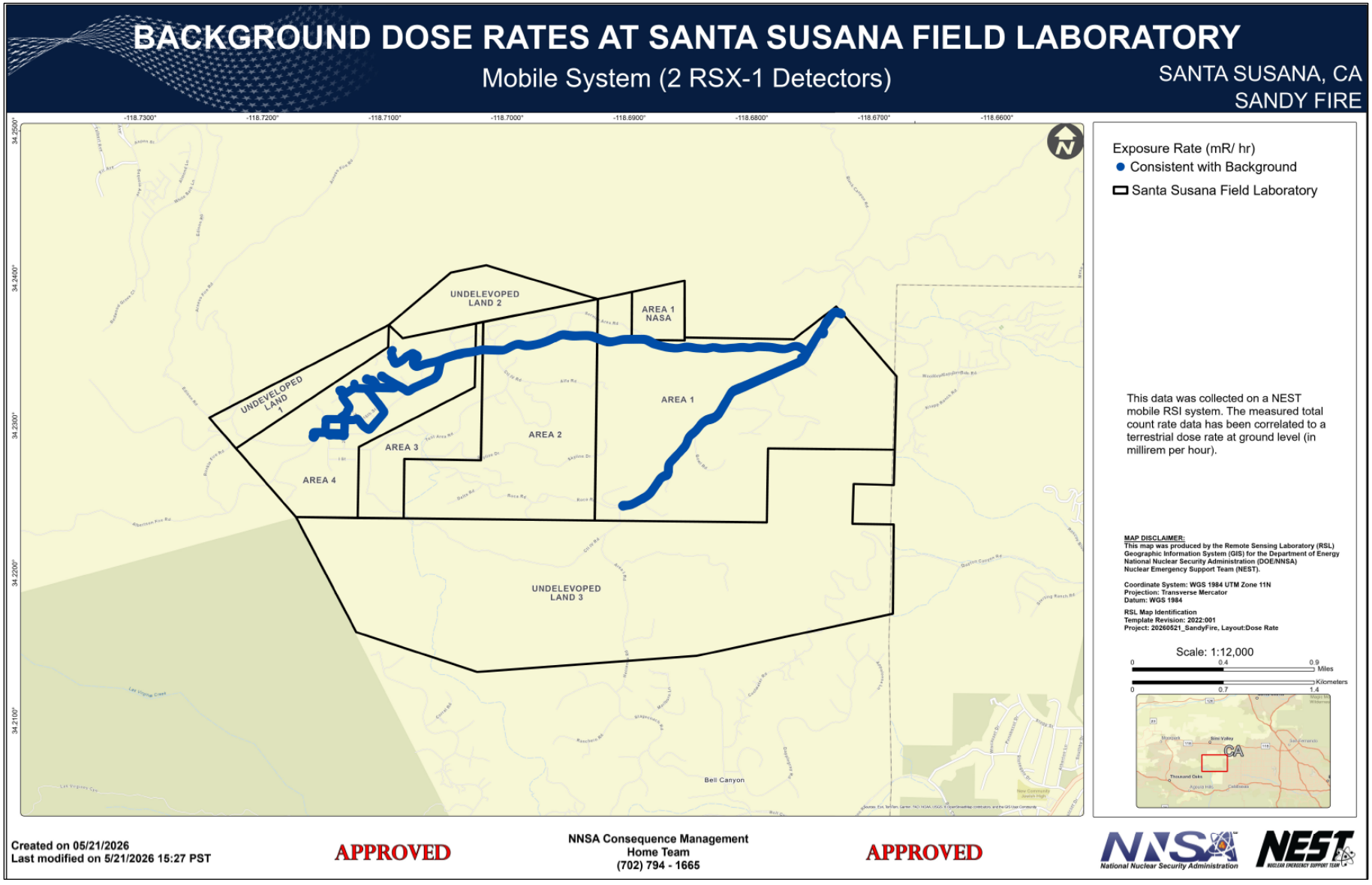


Table 1. Compilation of NNSA/NEST/RAP Air Monitoring Data During the Sandy Fire

		Cs-137						Th-228						Gross Alpha				Gross Beta			
CBRN ID No.	Air volume	Activity	MDA	Activity	MDC	DOE[1]	NRC[2]	Activity	MDA	Activity	MDC	DOE[1]	NRC[2]	Activity	MDC	DOE[1,3]	NRC[2,3]	Activity	MDC	DOE[1,4]	NRC[2,4]
	liters[5]	µCi/sample	µCi/sample	µCi/mL	µCi/mL	µCi/mL	µCi/mL	µCi/sample	µCi/sample	µCi/mL	µCi/mL	µCi/mL	µCi/mL	µCi/mL	µCi/mL	µCi/mL	µCi/mL	µCi/mL	µCi/mL	µCi/mL	µCi/mL
SCN-004-004 501	98,062.5	?	2.57E-06	?	2.62E-14	3.80E-11	2.00E-10	8.47E-06	3.49E-06	8.64E-14	3.56E-14	1.00E-13	2.00E-14	4.27E-16	2.09E-15	1.10E-13	2.00E-14	3.28E-14	4.84E-15	9.60E-12	6.00E-12
SCN-004-004 502	96,496.0	?	5.22E-06	?	5.41E-14	3.80E-11	2.00E-10	8.65E-06	4.20E-06	8.96E-14	4.35E-14	1.00E-13	2.00E-14	1.25E-15	2.12E-15	1.10E-13	2.00E-14	3.03E-14	4.92E-15	9.60E-12	6.00E-12
SCN-004-004 503	91,909.5	?	4.84E-06	?	5.27E-14	3.80E-11	2.00E-10	6.53E-06	3.72E-06	7.10E-14	4.05E-14	1.00E-13	2.00E-14	1.88E-15	2.22E-15	1.10E-13	2.00E-14	3.14E-14	5.17E-15	9.60E-12	6.00E-12
SCN-004-004 508	93,632.0	?	2.85E-06	?	3.04E-14	3.80E-11	2.00E-10	ND	NR	ND	NR	1.00E-13	2.00E-14	1.57E-15	2.18E-15	1.10E-13	2.00E-14	2.57E-14	5.07E-15	9.60E-12	6.00E-12
SCN-004-004 509	92,550.0	?	4.34E-06	?	4.69E-14	3.80E-11	2.00E-10	ND	NR	ND	NR	1.00E-13	2.00E-14	4.53E-16	2.21E-15	1.10E-13	2.00E-14	3.36E-14	5.13E-15	9.60E-12	6.00E-12
SCN-004-004 510	93,300.0	?	3.31E-06	?	3.55E-14	3.80E-11	2.00E-10	ND	NR	ND	NR	1.00E-13	2.00E-14	1.57E-15	2.19E-15	1.10E-13	2.00E-14	2.89E-14	5.09E-15	9.60E-12	6.00E-12
SCN-004-004 511	97,014.0	?	2.58E-06	?	2.66E-14	3.80E-11	2.00E-10	ND	NR	ND	NR	1.00E-13	2.00E-14	9.72E-16	2.11E-15	1.10E-13	2.00E-14	2.72E-14	4.89E-15	9.60E-12	6.00E-12
SCN-06E-000001	219,754.0	?	9.66E-06	?	4.40E-14	3.80E-11	2.00E-10	ND	NR	ND	NR	1.00E-13	2.00E-14	7.52E-17	9.44E-16	1.10E-13	2.00E-14	2.36E-14	2.18E-15	9.60E-12	6.00E-12
SCN-06E-000002	151,025.0	?	1.02E-05	?	6.75E-14	3.80E-11	2.00E-10	ND	NR	ND	NR	1.00E-13	2.00E-14	6.31E-16	1.37E-15	1.10E-13	2.00E-14	1.50E-14	3.16E+15	9.60E-12	6.00E-12
SCN-06E-000003	215,229.0	?	6.01E-06	?	2.79E-14	3.80E-11	2.00E-10	ND	NR	ND	NR	1.00E-13	2.00E-14	5.66E-16	9.60E-16	1.10E-13	2.00E-14	2.48E-14	2.22E-15	9.60E-12	6.00E-12
SCN-06E-000004	158,592.5	?	1.17E-05	?	7.38E-14	3.80E-11	2.00E-10	ND	NR	ND	NR	1.00E-13	2.00E-14	4.40E-16	1.32E-15	1.10E-13	2.00E-14	1.18E-14	3.05E-15	9.60E-12	6.00E-12
SCN-06E-000005	203,105.0	?	9.04E-06	?	4.45E-14	3.80E-11	2.00E-10	ND	NR	ND	NR	1.00E-13	2.00E-14	-5.23E-17	1.02E-15	1.10E-13	2.00E-14	2.23E-14	2.36E-15	9.60E-12	6.00E-12
SCN-06E-000006	156,402.5	?	6.10E-06	?	3.90E-14	3.80E-11	2.00E-10	ND	NR	ND	NR	1.00E-13	2.00E-14	4.40E-16	1.32E-15	1.10E-13	2.00E-14	1.04E-14	3.05E-15	9.60E-12	6.00E-12
SCN-06E-000007	238,415.0	?	1.07E-05	?	4.49E-14	3.80E-11	2.00E-10	ND	NR	ND	NR	1.00E-13	2.00E-14	9.65E-16	8.76E-16	1.10E-13	2.00E-14	1.87E-14	2.02E-15	9.60E-12	6.00E-12
SCN-06E-000008	139,425.0	?	8.40E-06	?	6.02E-14	3.80E-11	2.00E-10	ND	NR	ND	NR	1.00E-13	2.00E-14	1.09E-15	1.52E-15	1.10E-13	2.00E-14	1.29E-14	3.50E-15	9.60E-12	6.00E-12
SCN-06E-000009	202,860.0	?	7.70E-06	?	3.80E-14	3.80E-11	2.00E-10	ND	NR	ND	NR	1.00E-13	2.00E-14	1.25E-15	1.02E-15	1.10E-13	2.00E-14	2.01E-14	2.35E-15	9.60E-12	6.00E-12
SCN-06E-000010	145,656.0	?	7.99E-06	?	5.49E-14	3.80E-11	2.00E-10	ND	NR	ND	NR	1.00E-13	2.00E-14	1.99E-15	1.47E-15	1.10E-13	2.00E-14	1.26E-14	3.39E-15	9.60E-12	6.00E-12
SCN-06E-000011	234,920.0	?	1.12E-05	?	4.77E-14	3.80E-11	2.00E-10	ND	NR	ND	NR	1.00E-13	2.00E-14	4.10E-16	8.89E-16	1.10E-13	2.00E-14	1.46E-14	2.05E-15	9.60E-12	6.00E-12
SCN-06E-000012	154,368.0	?	4.17E-06	?	2.70E-14	3.80E-11	2.00E-10	ND	NR	ND	NR	1.00E-13	2.00E-14	4.63E-16	1.39E-15	1.10E-13	2.00E-14	1.55E-14	3.21E-15	9.60E-12	6.00E-12
SCN-06E-000013	235,617.5	?	8.99E-06	?	3.82E-14	3.80E-11	2.00E-10	ND	NR	ND	NR	1.00E-13	2.00E-14	7.59E-16	8.98E-16	1.10E-13	2.00E-14	1.77E-14	2.07E-15	9.60E-12	6.00E-12
SCN-06E-000014	148,212.0	?	1.02E-05	?	6.88E-14	3.80E-11	2.00E-10	ND	NR	ND	NR	1.00E-13	2.00E-14	6.58E-16	1.43E-15	1.10E-13	2.00E-14	1.38E-14	3.00E-15	9.60E-12	6.00E-12
Average			7.04E-06		4.52E-14	3.80E-11	2.00E-10			8.24E-14	3.99E-14	1.00E-13	2.00E-14	8.50E-16	1.50E-15	1.10E-13	2.00E-14	2.11E-14	1.50E+14	9.60E-12	6.00E-12

1. DOE-STD-1196-2022 – Table 7: Derived concentration standards (DCS) for members of the public for inhalation of particles. Limiting, lowest standard chosen.
2. NRC Air Effluent Concentration for mebers of the public. 10 CFR 20 Appendix B. Table 2. Column 1.
3. Pu-239 chosen as conservative limit for alpha emitters.
4. Sr-90 chosen as conservative limit for beta emitters.
5. Volumes taken from metadata table.

?. Reported as a non-detect in the text but reported as 0.00E+00 in the table.

ND. Implied as a non-detect in the text and not reported in the table.

NR. Not reported in the table.

+/- confidence limits are omitted to simplify the table.