

**Environmental Protection & Compliance Division**

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Symbol: EPC-DO: 20-111  
LA-UR: 20-22510  
Locates No: NA  
Date: **MAR 26 2020**

Mr. Kevin Pierard  
Hazardous Waste Bureau  
New Mexico Environment Department  
2905 Rodeo Park Drive East, Building 1  
Santa Fe, NM 87505

**Subject: Technical Area 63 Transuranic Waste Facility Soil Vapor Monitoring System  
Additional Notification, Los Alamos National Laboratory EPA ID  
#NM0890010515**

Dear Mr. Pierard:

The purpose of this letter is to provide notification to the New Mexico Environment Department Hazardous Waste Bureau (NMED-HWB) of the detection of contaminants in a soil vapor monitoring well at the Los Alamos National Laboratory (LANL) Technical Area 63 Transuranic Waste Facility (TA-63 TWF) that have not been previously detected in the well. This notification is submitted in accordance with Section 3.14.3 of the LANL Hazardous Waste Facility Permit (the Permit) by Triad National Security, LLC (Triad), a LANL Permittee in conjunction with the U.S. Department of Energy. The Permit requires that a soil vapor monitoring system for the TWF be sampled for certain volatile organic compounds (VOCs) on a quarterly basis and that a notification be submitted if a new contaminant has been detected. Soil vapor monitoring at the TWF was completed for the tenth quarter of sampling and analysis and the full report for that sampling is due to NMED-HWB by the end of March 2020.

The latest laboratory analytical results for the sixty-foot sampling port of Well VMW-5 indicate the detection of several new VOCs in the duplicate field sample (TWF63-20-193667, see Enclosure 1). The detections were not seen in the original sample collected concurrently from the port (TWF63-20-193666). The VOCs detected include tetrahydrofuran, ethanol, propanol-2 (isopropyl alcohol), and 2-butanone. The compound 2-butanone is included in the constituents of concern identified in Tables 3.14.3.1-3 of the Permit as methyl ethyl ketone. The Permit tables do not list the other three detected compounds. The concentrations for the compounds were all quantified above the report detection limits for the analysis. The concentration for 2-butanone was less than 0.1% of the soil gas screening level (SGSL) given for the constituent in Table 3.14.3.3. A facility review of the documentary record for the sampling and analysis of this well sample completed March 12, 2020 did not indicate a data quality problem or laboratory analysis discrepancy.

There do not appear to be significant factors in the data collected to this point for the sampling and analysis project to support the presence of these constituents in the field duplicate sample. These compounds have not been observed above report detection limits in the last two and a half years of quarterly sampling in any other of the TWF soil vapor monitoring wells. There is no indication of significant differences in the handling of the sample collection. Concentration results for VOCs in the original well sample contain similar compounds that are within the same concentration ranges as the field duplicate sample (i.e., carbon tetrachloride, chloroform, 1,1,1-trichloroethane, dichlorodifluoromethane, and trichloroethylene [TCE]). This indicates that similar sampling conditions existed and similar sample volumes were collected. TCE is the primary VOC of interest detected in these wells during this sampling project and the data have shown a stable trend for the concentrations seen in the wells. The TCE concentration values for both the original and field duplicate well samples fall within the statistical range of two standard deviations for the data collected over the last ten quarters. This supports equivalency of the duplicate samples with the exception of the newly discovered compounds.

There are two nearby soil vapor monitoring wells associated with the Technical Area 50 Material Disposal Area C Solid Waste Management Unit 50-009 (MDA-C). The VOC concentration values from those wells were reviewed through the INTELLUS database for any indication of similar VOC detections since the TA-63 TWF became operational. There have been minor qualified detections of ethanol (2x) and propanol-2 (1x) below report detection limits, but tetrahydrofuran or 2-butanone (the compound included in the Permit tables) have not been detected.

A possible explanation for the additional VOCs is inadvertently introduced contamination but there does not appear to be sufficient information available to support this hypothesis. The low SGSL percentage for the 2-butanone concentration given in Permit Section 3.14.3 and for the other constituents like TCE that are present in the well does not indicate an immediate risk-based requirement for additional re-sampling of the well. Further action for this matter appears to be the need to resolve whether the detection of the four VOCs can be duplicated. Triad proposes that the analytical results for the 60 foot sampling port at Well VMW-5 be evaluated at the next quarterly sampling event and that the field duplicate for the sampling event also be taken at that port. This will generally replicate the physical conditions associated with this tenth quarter sampling event and will provide two additional data points for review.

Permit Section 3.14.3 requires that this written notification "...shall be submitted to the Department in a letter report that includes, at a minimum, in table format, the date or dates of the sampling event, the well designation, the location of the well, a list of the analytical data that triggered the reporting requirement, any known issues with sample quality, and the specific category for which the data is reported under this Section..." Enclosure 1 of this letter includes this information. The information in this notification and the full sampling and analytical data will also be included with the forthcoming tenth quarter sampling report to be submitted to NMED-HWB.

If you have questions or comments concerning this notification, please contact Patrick L. Padilla, Triad, at (505) 667-3932 or [plpadilla@lanl.gov](mailto:plpadilla@lanl.gov).  
Sincerely,

E. Torres for J.  
Payne

Digitally signed by E. Torres for J.  
Payne  
Date: 2020.03.25 14:23:34 -06'00'

Jennifer E. Payne  
Division Leader  
Environmental Protection & Compliance Division  
Triad National Security, LLC

JEP/KEA/PLP:gab

Enclosure: 1) Technical Area 63 Transuranic Waste Facility Soil Vapor Monitoring System  
Additional Information

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# **ENCLOSURE 1**

**TA-63 Transuranic Waste Facility  
Soil Vapor Monitoring System  
Additional Information  
Los Alamos National Laboratory  
EPA ID #NM0890010515**

EPC-DO-20-111  
LAUR-20-22510  
Unclassified

Date: MAR 26 2020

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## Additional Volatile Organic Compounds in TA-63 Transuranic Waste Facility Soil Vapor Monitoring System Well VMW-5

Date of Sampling Event	January 29, 2020
Well Designation	VMW-5, 60-foot sampling depth
Location of Well	Los Alamos National Laboratory, Technical Area 63 North of Puye Road, Structure Number: 63-2013 Northing: 1768398.7080, Easting: 1627039.3635
Known Issues with Sample Quality	None
Reporting Data Category for LANL Hazardous Waste Facility Permit Section 3.14.3	Additional VOC compounds not previously detected in soil vapor monitoring well

Well	Sample ID	Sample Port Depth (ft)	Analyte/Constituent	Listing in Permit Tables	Result (ug/m <sup>3</sup> )	EPA Data Qualifier	Report Detection Limit (ug/m <sup>3</sup> )	Soil-Gas Screening Level (ug/m <sup>3</sup> )	Percentage Of SGSL (%)
VMW-5 63-2013	TWF63-20-193666	60	Carbon Tetrachloride	Carbon tetrachloride	22.6	J	55.3	2.13E+05	<0.1
			Chloroform	Chloroform	23.4	J	42.9	4.44E+04	<0.1
			Trichloroethane[1,1,1-]	1,1,1-Trichloroethane	47.4	J	48.0	2.34E+08	<0.1
			Dichlorodifluoromethane	Dichlorodifluoromethane	79.1	NQ	43.5	5.38E+06	<0.1
			Trichloro-1,2,2-trifluoroethane[1,1,2-]	1,1,2-Trichloro-1,2,2-trifluoroethane	18.4	J	67.4	1.38E+09	<0.1
			Trichloroethene	Trichloroethylene	1503	NQ	47.3	9.27E+04	1.6
VMW-5 63-2013	TWF63-20-193667 Field Duplicate	60	<b>Tetrahydrofuran</b>	NA	943	NQ	27.7	NA	NA
			Carbon Tetrachloride	Carbon tetrachloride	17.6	J	59.1	2.13E+05	<0.1
			<b>Ethanol</b>	NA	104	NQ	69.7	NA	NA
			<b>Propanol[2-]</b>	NA	95.8	NQ	90.9	NA	NA
			Chloroform	Chloroform	19.5	J	45.9	4.44E+04	<0.1
			Trichloroethane [1,1,1-]	1,1,1-Trichloroethane	46.3	J	51.3	2.34E+08	<0.1
			Dichlorodifluoromethane	Dichlorodifluoromethane	79.1	NQ	46.5	5.38E+06	<0.1
			<b>Butanone[2-]</b>	Methylethylketone (2-butanone)	162	NQ	109	2.27E+08	<0.1
			Trichloroethene	Trichloroethylene	1340	NQ	50.5	9.27E+04	1.4
			Trimethylbenzene[1,2,4-]	1,2,4-Trimethylbenzene	10.3	J	46.2	4.12E+05	<0.1

EPA Data Qualifier "J" indicates analytes that are detected but results are estimated as less than the report detection limit.  
EPA Data Qualifier "NQ" indicates analytes that are detected above the report detection limit with no data qualifiers.  
NA" indicates the analyte is not included in the LANL Hazardous Waste Facility Permit, Tables 3.14.3.1-3 for soil-gas screening levels.