

Air Monitoring Summary Tables

The tables below summarize monitoring data collected using EPA's Viper wireless remote monitoring system. The "Number of Readings" are artificially reduced to manage large quantities of data for this report. Further discussion is provided in the notes section on page 5.



Project Name: Applegate Lane Containers

**From: 10/24/23
7:01 AM**

**To: 10/25/23
7:00 AM**

Station 01 - Tier I							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRAE 1	VOC	No	2674	0	0-0 ppb	0.00 ppb	9000 ppb
	CO	No	2674	0	0-0 ppm	0.00 ppm	83 ppm
	H2S	No	2674	0	0-0 ppm	0.00 ppm	0.51 ppm
	O2	No	2674	2674	20.9-21.2 %	20.91 %	<19.5 or >23 %
	LEL	No	2674	0	0-0 %	0.00 %	10 %
	HCN	No	2674	0	0-0 ppm	0.00 ppm	2 ppm
DustTrak 1	PM2.5	See PM-2.5 Action Levels	1440	1440	5-68 µg/m3	10.76 µg/m3	See PM-2.5 Action Levels
SPM Flex 1	Ammonia (NH3)	No	1439	0	0-0 ppm	0.00 ppm	30 ppm
SPM Flex 2	Nitric Acid (HNO3)	No	1439	0	0-0 ppm	0.00 ppm	0.16 ppm

Station 02 - Tier I							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRAE 2	VOC	No	2676	2048	0-493 ppb	235.79 ppb	9000 ppb
	CO	No	2676	0	0-0 ppm	0.00 ppm	83 ppm
	H2S	No	2676	0	0-0 ppm	0.00 ppm	0.51 ppm
	O2	No	2676	2676	20.9-20.9 %	20.90 %	<19.5 or >23 %
	LEL	No	2676	0	0-0 %	0.00 %	10 %
	HCN	No	2676	8	0-0.3 ppm	0.00 ppm	2 ppm
DustTrak 2	PM2.5	See PM-2.5 Action Levels	1446	1446	12-69 µg/m3	16.15 µg/m3	See PM-2.5 Action Levels
SPM Flex 3	Ammonia (NH3)	No	1440	0	0-0 ppm	0.00 ppm	30 ppm
SPM Flex 4	Nitric Acid (HNO3)	No	1440	0	0-0 ppm	0.00 ppm	0.16 ppm

Station 03 - Tier I							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRAE 3	VOC	No	2681	0	0-0 ppb	0.00 ppb	9000 ppb
	CO	No	2681	2	0-4 ppm	0.00 ppm	83 ppm
	H2S	No	2681	0	0-0 ppm	0.00 ppm	0.51 ppm
	O2	No	2681	2681	20.9-21.3 %	20.94 %	<19.5 or >23 %
	LEL	No	2681	0	0-0 %	0.00 %	10 %
	HCN	No	2681	930	0-0.4 ppm	0.04 ppm	2 ppm
DustTrak 3	PM2.5	See PM-2.5 Action Levels	1440	1440	8-61 µg/m3	12.95 µg/m3	See PM-2.5 Action Levels
SPM Flex 5	Ammonia (NH3)	No	1439	32	0-0.04 ppm	0.00 ppm	30 ppm
SPM Flex 6	Nitric Acid (HNO3)	No	1439	0	0-0 ppm	0.00 ppm	0.16 ppm

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Station 04 - Tier 1							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRae 4	VOC	No	2684	131	0-297 ppb	5.35 ppb	9000 ppb
	CO	No	2684	2	0-2 ppm	0.00 ppm	83 ppm
	H2S	No	2684	0	0-0 ppm	0.00 ppm	0.51 ppm
	O2	No	2684	2684	20.3-20.4 %	20.33 %	<19.5 or >23 %
	LEL	No	2684	0	0-0 %	0.00 %	10 %
	HCN	No	2684	24	0-0.1 ppm	0.00 ppm	2 ppm
DustTrak 4	PM2.5	See PM-2.5 Action Levels	1440	1440	10-29 µg/m3	12.05 µg/m3	See PM-2.5 Action Levels
SPM Flex 7	Ammonia (NH3)	No	1440	31	0-0.06 ppm	0.00 ppm	30 ppm
SPM Flex 8	Nitric Acid (HNO3)	No	1439	0	0-0 ppm	0.00 ppm	0.16 ppm

Station 05 - Tier I							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRae 5	VOC	No	2684	1884	0-598 ppb	230.92 ppb	9000 ppb
	CO	No	2684	0	0-0 ppm	0.00 ppm	83 ppm
	H2S	No	2684	0	0-0 ppm	0.00 ppm	0.51 ppm
	O2	No	2684	2684	20.9-20.9 %	20.90 %	<19.5 or >23 %
	LEL	No	2684	0	0-0 %	0.00 %	10 %
	HCN	No	2684	186	0-0.2 ppm	0.01 ppm	2 ppm
DustTrak 5	PM2.5	See PM-2.5 Action Levels	1440	1440	11-47 µg/m3	15.27 µg/m3	See PM-2.5 Action Levels
SPM Flex 9	Ammonia (NH3)	No	1439	242	0-0.41 ppm	0.01 ppm	30 ppm
SPM Flex 10	Nitric Acid (HNO3)	No	1439	0	0-0 ppm	0.00 ppm	0.16 ppm

Station 06 - Tier I							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRae 6	VOC	No	2683	2683	185-513 ppb	338.07 ppb	9000 ppb
	CO	No	2683	0	0-0 ppm	0.00 ppm	83 ppm
	H2S	No	2683	0	0-0 ppm	0.00 ppm	0.51 ppm
	O2	No	2683	2683	20.1-20.4 %	20.19 %	<19.5 or >23 %
	LEL	No	2683	220	0-4 %	0.28 %	10 %
	HCN	No	2683	0	0-0 ppm	0.00 ppm	2 ppm
DustTrak 6	PM2.5	See PM-2.5 Action Levels	1439	1439	10-23 µg/m3	14.06 µg/m3	See PM-2.5 Action Levels
SPM Flex 11	Ammonia (NH3)	No	1417	467	0-0.35 ppm	0.01 ppm	30 ppm
SPM Flex 12	Nitric Acid (HNO3)	No	1418	0	0-0 ppm	0.00 ppm	0.16 ppm

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Station 07 - Tier I							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRae 7	VOC	No	2683	2683	347-971 ppb	699.50 ppb	9000 ppb
	CO	No	2683	0	0-0 ppm	0.00 ppm	83 ppm
	H2S	No	2683	0	0-0 ppm	0.00 ppm	0.51 ppm
	O2	No	2683	2683	19.9-20.4 %	20.11 %	<19.5 or >23 %
	LEL	No	2683	0	0-0 %	0.00 %	10 %
	HCN	No	2683	0	0-0 ppm	0.00 ppm	2 ppm
DustTrak 7	PM2.5	See PM-2.5 Action Levels	1436	1436	10-42 µg/m3	14.79 µg/m3	See PM-2.5 Action Levels
SPM Flex 13	Ammonia (NH3)	No	1436	262	0-0.4 ppm	0.00 ppm	30 ppm
SPM Flex 14	Nitric Acid (HNO3)	No	1435	0	0-0 ppm	0.00 ppm	0.16 ppm

Station 10 - Tier II							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRae 10	VOC	No	2680	0	0-0 ppb	0.00 ppb	9000 ppb
	CO	No	2680	2	0-6 ppm	0.00 ppm	83 ppm
	H2S	No	2680	0	0-0 ppm	0.00 ppm	0.51 ppm
	O2	No	2680	2680	20.9-20.9 %	20.90 %	<19.5 or >23 %
	LEL	No	2680	0	0-0 %	0.00 %	10 %
	HCN	No	2680	4	0-0.5 ppm	0.00 ppm	2 ppm
DustTrak 10	PM2.5	See PM-2.5 Action Levels	1437	1339	0-50 µg/m3	10.50 µg/m3	See PM-2.5 Action Levels
SPM Flex 19	Ammonia (NH3)	No	1439	236	0-0.47 ppm	0.01 ppm	30 ppm
SPM Flex 20	Nitric Acid (HNO3)	No	1439	0	0-0 ppm	0.00 ppm	0.16 ppm

Station 11 - Tier II							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRae 11	VOC	No	2679	2679	89-901 ppb	566.54 ppb	9000 ppb
	CO	No	2679	0	0-0 ppm	0.00 ppm	83 ppm
	H2S	No	2679	0	0-0 ppm	0.00 ppm	0.51 ppm
	O2	No	2679	2679	20.9-20.9 %	20.90 %	<19.5 or >23 %
	LEL	No	2679	0	0-0 %	0.00 %	10 %
	HCN	No	2679	18	0-0.1 ppm	0.00 ppm	2 ppm
DustTrak 11	PM2.5	See PM-2.5 Action Levels	1440	1440	8-32 µg/m3	11.87 µg/m3	See PM-2.5 Action Levels
SPM Flex 21	Ammonia (NH3)	No	1440	33	0-0.02 ppm	0.00 ppm	30 ppm
SPM Flex 22	Nitric Acid (HNO3)	No	1440	0	0-0 ppm	0.00 ppm	0.16 ppm

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7:00 AM**

Station 12 - Tier II							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRae 12	VOC	No	2674	2674	71-579 ppb	373.88 ppb	9000 ppb
	CO	No	2674	4	0-4 ppm	0.01 ppm	83 ppm
	H2S	No	2674	0	0-0 ppm	0.00 ppm	0.51 ppm
	O2	No	2674	2674	20.2-20.9 %	20.47 %	<19.5 or >23 %
	LEL	No	2674	0	0-0 %	0.00 %	10 %
	HCN	No	2674	0	0-0 ppm	0.00 ppm	2 ppm
DustTrak 12	PM2.5	See PM-2.5 Action Levels	1440	1440	14-23 µg/m3	16.52 µg/m3	See PM-2.5 Action Levels
SPM Flex 23	Ammonia (NH3)	No	1439	75	0-0.02 ppm	0.00 ppm	30 ppm
SPM Flex 24	Nitric Acid (HNO3)	No	1439	0	0-0 ppm	0.00 ppm	0.16 ppm

Station 13 - Tier II							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRae 13	VOC	No	2684	2478	0-349 ppb	181.32 ppb	9000 ppb
	CO	No	2684	2	0-2 ppm	0.00 ppm	83 ppm
	H2S	No	2684	0	0-0 ppm	0.00 ppm	0.51 ppm
	O2	No	2684	2684	20.9-20.9 %	20.90 %	<19.5 or >23 %
	LEL	No	2684	0	0-0 %	0.00 %	10 %
	HCN	No	2684	0	0-0 ppm	0.00 ppm	2 ppm
DustTrak 13	PM2.5	See PM-2.5 Action Levels	1439	1439	7-315 µg/m3	13.25 µg/m3	See PM-2.5 Action Levels
SPM Flex 25	Ammonia (NH3)	No	1439	3	0-0.02 ppm	0.00 ppm	30 ppm
SPM Flex 26	Nitric Acid (HNO3)	No	1439	0	0-0 ppm	0.00 ppm	0.16 ppm

Station 14 - Tier II							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRae 14	VOC	No	2682	0	0-0 ppb	0.00 ppb	9000 ppb
	CO	No	2682	8	0-4 ppm	0.01 ppm	83 ppm
	H2S	No	2682	0	0-0 ppm	0.00 ppm	0.51 ppm
	O2	No	2682	2682	20.9-21.1 %	20.90 %	<19.5 or >23 %
	LEL	No	2682	0	0-0 %	0.00 %	10 %
	HCN	No	2682	0	0-0 ppm	0.00 ppm	2 ppm
DustTrak 14	PM2.5	See PM-2.5 Action Levels	1440	1440	9-27 µg/m3	17.14 µg/m3	See PM-2.5 Action Levels
SPM Flex 27	Ammonia (NH3)	No	1439	39	0-0.11 ppm	0.00 ppm	30 ppm
SPM Flex 28	Nitric Acid (HNO3)	No	1439	0	0-0 ppm	0.00 ppm	0.16 ppm

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From: **10/24/23**
7:01 AM

To: **10/25/23**
7:00 AM

Notes:

Air monitoring instruments around the site are continuously operating 24-hours per day and transmitting to a central location. When elevated readings are detected, response personnel at the Site are automatically notified so that confirmation and appropriate actions can take place. Each day, these instruments collect 44 million records and 5GB of data. To generate this summary report, the number of records have been artificially reduced by using one reading per minute from each instrument - this does not affect the period average has no significant effect on the concentration range. No data is lost and elevated concentrations of any analyte being measured at the Site would be sufficiently represented within the data shown here.

Ammonia Detections: Multiple instruments show low levels of Ammonia detections below 1.0 ppm. This is below the action level of 30 ppm based on the most protective Acute Exposure Guideline Levels for a 1-hour average exposure. EPA has provided this data to the Agency of Toxic Substances and Disease Registry (ASTDR) for review and an assessment of these data have been provided in the Air Monitoring Data Summary Report for Oct 17 at 0700 to Oct 18 at 0700.

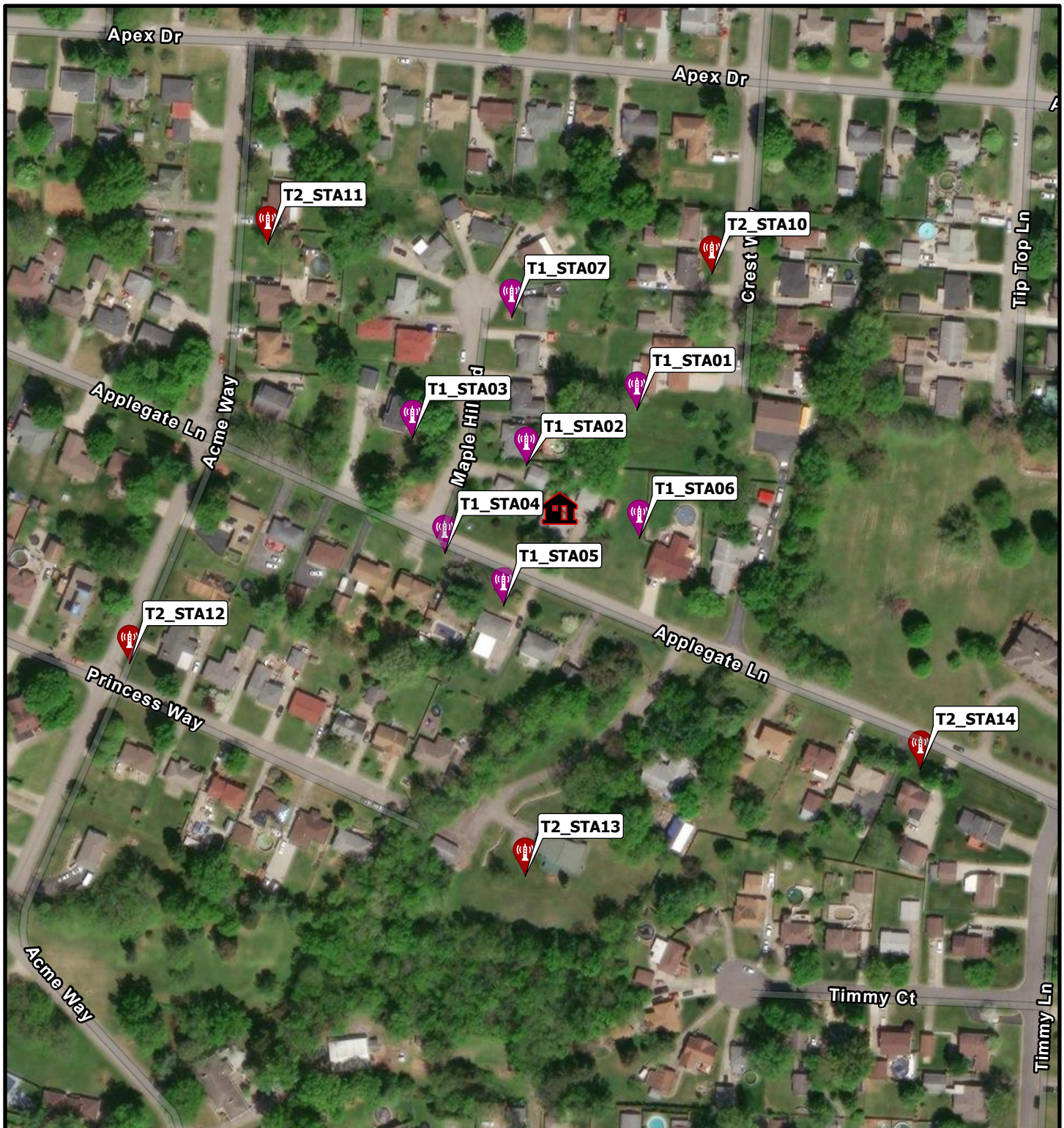
Hydrogen Cyanide (HCN) Detections: On October 23 and again on October 24, multiple instruments recorded HCN above 0 ppm but below 0.4 ppm, below the action level of 2 ppm. Unlike October 23, the readings on October 24 were fewer, sporadic, and did not occur within a single timeframe during the day. Despite begin below action levels, EPA requested assistance from ATSDR to review these readings to determine whether health effects could occur:

A substance released from a large area, such as an industrial plant, or from a container, such as a drum or bottle, it enters the environment. These releases do not always lead to exposure. You are only exposed to a substance when you come in contact with it - by breathing, eating, drinking the substance, or by skin contact. If you are exposed to cyanide, many factors will determine whether you will be harmed, including: dose (how much), duration (how long), and method of contact. Other factors are also important: other chemical exposures, age, sex, diet, family traits, lifestyle, and state of health.

Hydrogen cyanide (HCN), sodium cyanide, and potassium cyanide are the forms of cyanide most likely to be in the environment as a result of industrial activities. HCN is a colorless gas with a bitter, almond-like odor. The concentration of HCN in unpolluted air is less than 0.2 ppm. Smoking is one major source of cyanide exposure for people who do not work in cyanide-related industries. Breathing smoke-filled air during fires may also be a source of cyanide exposure. People who live near hazardous waste sites that contain cyanide may be exposed to higher amounts of cyanide than the general population. Other sources include vehicle exhaust, releases from certain chemical industries, burning of municipal waste, and use of cyanide-containing pesticides.

The action level at the Site of 2 ppm for HCN is based on Acute Exposure Guideline Levels (AEGL-1), defined as the airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could experience notable discomfort, irritation, or certain asymptomatic non sensory effects. However, the effects are not disabling and are temporary and reversible upon end of the exposure.

Analyte	Definition	Action Level Reference
VOC	Volatile Organic Compounds	AEGL-1 8hr for Benzene
CO	Carbon Monoxide	AEGL-2 1hr
H2S	Hydrogen Sulfide	AEGL-1 1hr
O2	Oxygen	29 CFR 1910.146, Confined Spaces
LEL	Lower Explosive Limit	29 CFR 1910.146, Confined Spaces
NH3	Ammonia	AEGL-1 1hr
HNO3	Nitric Acid	AEGL-1, 1hr
SO2	Sulfur Dioxide	AEGL-1 1hr
Cl2	Chlorine	AEGL-1 1hr
HCN	Hydrogen Cyanide	AEGL-1 1hr
NO	Nitric Oxide	PAC-1 (compare Cl2 and H2S PAC-1 to AEGL-1)
PM 2.5	Particulate Matter 2.5	See PM-2.5 Action Levels Sheet
%	Percent	
<	Less than	
>	Greater than	
AEGL	Acute Exposure Guideline Levels for Airborne Chemicals	
mg/m3	milligrams per cubic meter	
min	Minute	
PAC	Protective Action Criteria	
PEL	Permissible exposure limit	
ppb	Parts per billion	
ppm	Parts per million	
PM	Particulate Matter	
SPM	Single Point Monitor	
µg/m3	Micrograms per cubic meter	



Legend



6213 Applegate Lane



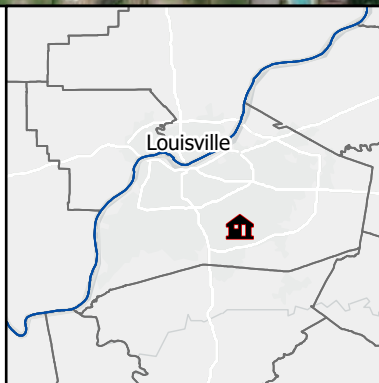
Tier I



Tier II



0 100 200
Feet



United States
Environmental Protection Agency
Region 4

Applegate Lane Container Site Air Monitoring Station Locations

City:
Louisville

County:
Jefferson

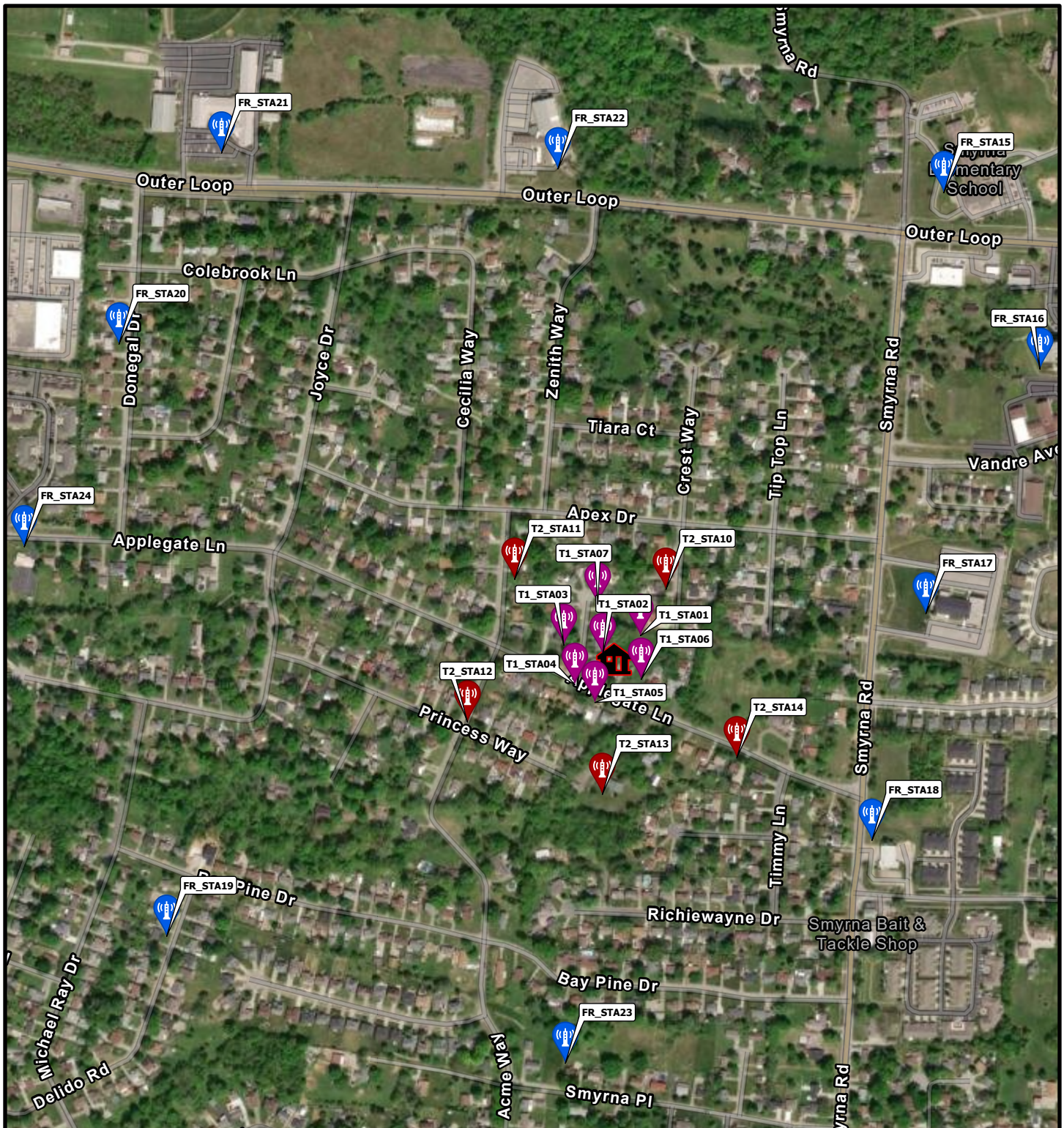
State:
Kentucky







TETRA TECH

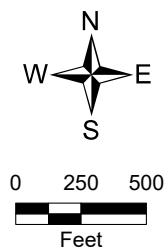
Date:
10/10/2023

Analyst:
MORGAN.TORRES



Legend

-  6213 Applegate Lane
-  Tier I
-  Tier II
-  Contingency



United States
Environmental Protection Agency
Region 4

Applegate Lane Container Site Air Monitoring Station Locations

City: Louisville County: Jefferson State: Kentucky



TETRA TECH

Date: 10/10/2023
Analyst: MORGAN, TORRES

PM2.5 (Particulate Matter ≤ 2.5 microns) Community Action Threshold Levels				
For Unified Command Use				
1-Hour Average (µg/m3)	24-Hour Average (µg/m3)	Level of Health Concern	Meaning	Action
0.0 - 40.0	0.0-12.0	Good	Air Quality is considered satisfactory, and air pollution poses little or no risk.	Implement communication plan.
40.1 - 80.0	12.1 - 35.4	Moderate	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.	Issue public announcement about health effects. Stay out of areas with visible smoke.
80.1 - 175.0	35.5 - 55.4	Unhealthy for Sensitive Groups	Members of sensitive groups may experience health effects. The general public is not likely to be affected.	Recommend evacuation or shelter-in-place for sensitive populations.
175.1 - 300.0	55.5 - 150.4	Unhealthy	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.	Consider closing schools and cancelling outdoor events. Recommend shelter-in-place for affected neighborhoods.
300.1 - 500.0	150.5 - 250.4	Very Unhealthy	Health warnings of emergency conditions. The entire population is more likely to be affected.	Consider closing schools and cancel all outdoor events. Recommend shelter-in-place and/or evacuation for affected neighborhoods.
> 500.0	> 250.5	Hazardous	Health alert: everyone may experience more serious health effects.	Recommend closing schools & cancel outdoor events. Recommend closing workplaces and evacuating affected neighborhoods.

See The National Ambient Air Quality Standards for Particle Pollution REVISED AIR QUALITY STANDARDS FOR PARTICLE POLLUTION AND UPDATES TO THE AIR QUALITY INDEX (AQI) (https://www.epa.gov/sites/default/files/2016-04/documents/2012_aqi_factsheet.pdf)