

Air Monitoring Summary Tables

The table below summarize monitoring data collected on using EPA's Viper wireless remote monitoring system.

Project Name: Doral Florida Facility Fire

**From: 2/16/23
7:00 AM**

**To: 2/17/23
6:59 AM**



Explanation of Readings							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
Air monitoring instrument used to collect measurements	Acronym of contaminant being measured. The acronyms are defined in a table on the next page	A simple calculation of whether any single measurement exceeded the action level on the right. NOTE: This uses instant measurements only, NOT a calculated average over time (ex. 8hr).	The number of measurements recorded in the database. Some instruments log averages over a few minutes while others record readings every second.	A simple filter indicating non-zero measurements	The minimum and maximum measurements recorded over the period	The average over the period	The basis for action levels are provided in a table on the next page

Station 1 - South Fenceline							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRAE 1	VOC	No	1222	0	0 - 0 ppb	0 ppb	1000 ppb
	CO	No	1222	3	0 - 8 ppm	0 ppm	83 ppm
	H ₂ S	No	1222	0	0 - 0 ppm	0 ppm	0.51 ppm
	LEL	No	1222	1222	2 - 4 %	3.2 %	10 %
	Cl ₂	No	1222	0	0 - 0 ppm	0 ppm	0.5 ppm
DustTrak 1	PM-2.5	See PM2.5 Action Level Sheet	362	360	0 - 34 µg/m3	Not full 24hr	See PM2.5 Action Level Sheet

Station 2 - Southeast Corner of Stack							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRAE 2	VOC	No	1222	47	0 - 186 ppb	2 ppb	1000 ppb
	CO	No	1222	0	0 - 0 ppm	0 ppm	83 ppm
	H ₂ S	No	1222	0	0 - 0 ppm	0 ppm	0.51 ppm
	LEL	No	1222	1222	2 - 5 %	3.5 %	10 %
	Cl ₂	No	1222	0	0 - 0 ppm	0 ppm	0.5 ppm
DustTrak 2	PM-2.5	See PM2.5 Action Level Sheet	1430	1430	2 - 292 µg/m3	160 µg/m3	See PM2.5 Action Level Sheet

Station 3 - West Fenceline							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRAE 3	VOC	No	1141	23	0 - 98 ppb	0.7 ppb	1000 ppb
	CO	No	1141	181	0 - 7 ppm	0.5 ppm	83 ppm
	H ₂ S	No	1141	0	0 - 0 ppm	0 ppm	0.51 ppm
	LEL	No	1141	0	0 - 0 %	0 %	10 %
	Cl ₂	Yes	1141	74	0 - 0.7 ppm	0 ppm	0.5 ppm
DustTrak 3	PM-2.5	See PM2.5 Action Level Sheet	3219	3209	0 - 1270 µg/m3	27.2 µg/m3	See PM2.5 Action Level Sheet

Station 4 - North Fenceline							
Instrument	Analyte	Action Level Exceedance?	Number of Readings	Number of Detections	Concentration Range	Period Average	Action Level
AreaRAE 4	VOC	Yes	1222	474	0 - 1666 ppb	69.3 ppb	1000 ppb
	CO	No	1222	141	0 - 19 ppm	0.7 ppm	83 ppm
	H ₂ S	No	1222	0	0 - 0 ppm	0 ppm	0.51 ppm
	LEL	No	1222	0	0 - 0 %	0 %	10 %
	Cl ₂	No	1222	0	0 - 0 ppm	0 ppm	0.5 ppm
DustTrak 4	PM-2.5	See PM2.5 Action Level Sheet	35973	35971	0 - 430 µg/m3	38.5 µg/m3	See PM2.5 Action Level Sheet

Notes:

%	Percent
<	Less than
>	Greater than
AEGL	Acute Exposure Guideline Levels for Airborne Chemicals
C/m	Counts (ionization events) per minute
mg/m ³	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
SOG	Standard Operating Guidelines
SPM	Single Point Monitor
TEEL	Temporary Emergency Exposure Limit
TLV	Threshold limit value
µg/m ³	Micrograms per cubic meter
µrem/h	Microrem per hour
α	Alpha radiation (Ludlum 2241-2 can measure α under specific configuration)
β	Beta radiation (Ludlum 2241-2 can measure β under specific configuration)
γ	Gamma-wave radiation

Analyte	Definition	Action Level Reference
VOC	Volatile Organic Compounds	TEEL-0,15 minute TWA for Benzene
CO	Carbon Monoxide	AEGL-2 1hr
H ₂ S	Hydrogen Sulfide	AEGL-1 1hr
O ₂	Oxygen	29 CFR 1910.146, Confined Spaces
LEL	Lower Explosive Limit	29 CFR 1910.146, Confined Spaces
NH ₃	Ammonia	AEGL-1 1hr
SO ₂	Sulfur Dioxide	AEGL-1 1hr
Cl ₂	Chlorine	AEGL-1 1hr
HCN	Hydrogen Cyanide	AEGL-1 1hr
NO	Nitric Oxide	PAC-1 (compare Cl ₂ and H ₂ S PAC-1 to AEGL-1)
γ	Gamma-wave Radiation	Lowest 3x median (background) for RAEs in period
PM-2.5	Particulate Matter <2.5 microns	
α/β/γ	Alpha, Beta and Gamma Radiation	Lowest 3x median (background) for Ludlums in period

DATA REVIEW

****NOTE*** This data summary report covers a timeframe from 7am to 7am between 2/16 and 2/17. There is an overlap of two hours with the previous Data Summary Report which ended at 9am on 2/16.*

Station 1 – South Fenceline

PM2.5 instrument was removed from this location to conduct downwind monitoring during the day. Data collected 7am-10am averaged below 20 µg/m³ with no peaks above 34 µg/m³. Data collected 11pm-7am averaged below 20µg/m³ with no peaks above 29 µg/m³. A 24-hour average for this location cannot be calculated. For PM2.5 data comparisons see Community Action Threshold Levels table (attached)

H₂S, Cl₂ and VOC remained at zero. CO had two single measurements at 8ppm and 3ppm but neither was sustained beyond an instantaneous reading.

Station 2 – Southeast Corner of Stack

PM2.5 remote live-view data was disconnected. Data was recovered from the instrument. The 24-hour average for this location was 160 µg/m³ which corresponds to a “Very Unhealthy” level of health concern. Please note that this location is on-site on the waste stack and is not at the fenceline.

H₂s, Cl₂, and CO remained at zero. VOC had a sustained rise and fall 9pm-10pm with a maximum concentration of 0.186ppm (action level for VOC is 1ppm).

Station 3 – West Fenceline

PM2.5 two sustained rise and fall events 7pm-8pm and 10pm-midnight with peak concentrations over 1000µg/m³ and most concentrations below 500 µg/m³. The pattern of concentrations at this station are consistent with lower wind velocities at night and shifting wind direction towards the southwest, west and northwest. Most concentrations outside of these events were at or below 15µg/m³. The 24-hour average for this location was 27.2µg/m³ which corresponds to a “Moderate” level of health concern

H₂S, CO, and VOC remained at zero. Four instantaneous and non-sustained Cl₂ readings were recorded at 0.1ppm. Data from previous days indicates there may be a sensor drift with Cl₂ and the sensor will be re-calibrated on 2/17/2023.

Station 4 – North Fenceline

PM2.5 showed fourteen intermittent but unsustained peaks around 100µg/m³ and three peaks over 200µg/m³ between 8:30am-5:30pm; concentrations in-between these peaks were below 20µg/m³. A sustained rise and fall event at 3am-6am peaked above 400µg/m³ with most concentrations above 200µg/m³. Concentrations before and after this event were below 20 µg/m³. The 24-hour average for this location was 38.5µg/m³ which corresponds to a “Unhealthy for Sensitive Groups” level of health concern.

H₂S and Cl₂ remained at zero. Frequent but non-sustained detections of CO occurred throughout the monitoring period, mostly below 10ppm from 7am-9pm but with several above 10pm up to 19pm from midnight-4am. The 24-hour average of CO for this location was 0.7ppm. VOC showed a sustained rise and fall from 11am-7pm with a peak of 0.361ppm. A generator near this station has been relocated and values will be evaluated to determine if CO readings are due to generator exhaust.

PM_{2.5} (Particulate Matter ≤ 2.5 microns) Community Action Threshold Levels

1-Hour Average (µg/m ³)	24-Hour Average (µg/m ³)	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.