

## Hydrogen Sulfide (H<sub>2</sub>S)

Tier	Trigger Level	Time	Action	Trigger Rationale
Baseline	0.001 ppm	Ongoing	-Monitor; gauge whether impacts in the community are reported -If odors are reported, evaluate SO <sub>2</sub> data	EPA Residential RSL for chronic exposure (HI=1)/monitor detection limit
1	0.01 ppm	10-minute average	Notify community that odors may be experienced, but are not likely to cause health effects	AEGL odor threshold (at which >50% of the population may experience odors)
2	0.1 ppm	10-minute average	Investigate source and perform mitigation activities if appropriate and feasible	Near the ATSDR Acute MRL of 0.07 ppm (concentration at which no health effects are expected)
3	1 ppm	10-minute average	- Advise communities to shelter in place, especially schools, elderly care facilities, and health centers to reduce exposure (protecting sensitive populations) -Continue source investigation and perform mitigation activities (if appropriate & feasible)	-Similar to the 10-min AEGL-1 (0.75 ppm) -Half of OSHA's lower end of reported concentrations (2-5 ppm) for lower level effects (i.e., headache, tearing eyes, trouble breathing for asthmatics)
4	10 ppm	10-minute average	-Notify general community that exposure reduction is necessary -Consider possible evacuation (>10 ppm) -Continue source investigation and perform mitigation activities (if appropriate & feasible)	-Serves as a safety warning for the 8-hr AEGL 2 (17 ppm); Gives time for communication and action to take place (within 8 hours). - Equivalent to the NIOSH REL 10-min ceiling for workers (10 ppm) - Half of OSHA's reported level for debilitating impacts at 20 ppm (e.g., dizziness, fatigue, memory loss)

## Sulfur Dioxide (SO<sub>2</sub>)

Tier	Trigger Level	Time	Action	Trigger Rationale
1	0.01 ppm	10-minute average	<ul style="list-style-type: none"> <li>-Monitor; gauge whether impacts in the community are reported</li> <li>-If levels are sustained or continue to rise, investigate source</li> </ul>	ATSDR Acute MRL/Monitor detection limit
2	0.2 ppm	10-minute average	<ul style="list-style-type: none"> <li>- Advise communities to shelter in place, especially schools, elderly care facilities, and health centers to reduce exposure (protecting sensitive populations)</li> <li>-Continue source investigation and perform mitigation activities (if appropriate &amp; feasible)</li> </ul>	AEGL-1 value (applies to all exposures between 10 mins and 8 hours; protective of asthmatics)
3	0.7 ppm	10-minute average	<ul style="list-style-type: none"> <li>- Notify general community that exposure reduction is necessary, and odors may be experienced</li> <li>-Continue source investigation and perform mitigation activities (if appropriate &amp; feasible)</li> </ul>	<ul style="list-style-type: none"> <li>-Low end of AEGL odor threshold (0.67 ppm)</li> <li>-Similar to the AEGL-2 (0.75 ppm) for all exposures between 10 mins and 8 hours; induces moderate respiratory response in asthmatics)</li> </ul>
4	5 ppm	10-minute average	<ul style="list-style-type: none"> <li>-Consider shelter in place or possible evacuation (&gt;5 ppm)</li> <li>-Continue source investigation and perform mitigation activities (if appropriate &amp; feasible)</li> </ul>	<ul style="list-style-type: none"> <li>-Serves as a safety warning for the 8-hr AEGL 3 (9.6 ppm); Gives time for communication and action to take place (within 8 hours)</li> <li>- Equivalent to the NIOSH STEL for workers</li> </ul>

## Instrumentation Detection Levels

Analyte	CAS Number	Instrument	Range	Lower Detection Limit
Hydrogen sulfide (H <sub>2</sub> S)	6/4/7783	SPM Flex	0.001 – 9.999 ppm	0.001 ppm
Sulfur dioxide (SO <sub>2</sub> )	9/5/7446	SPM Flex	0.010 – 2.5 ppm	0.010 ppm
H <sub>2</sub> S	6/4/7783	AreaRAE Pro	0.1 – 100 ppm	0.1 ppm
SO <sub>2</sub>	9/5/7446	AreaRAE Pro	0.1 – 20 ppm	0.1 ppm
H <sub>2</sub> S	6/4/7783	Jerome J605	0.003 – 10 ppm	0.003 ppm
Benzene	71-43-2	Lumex BA-15	0.031 – 156.5 ppmv	0.031 ppmv