

POLLUTANT LEVELS ELEVATED ON HAWAI'I ISLAND RESIDENTS ADVISED TO TAKE PRECAUTIONS

The Hawai'i State Department of Health (DOH) is urging Hawai'i County residents to take precautions to protect their health from elevated levels of sulfur dioxide (SO₂) and fine particulates 2.5 microns or smaller in size (PM_{2.5}). The 24-hour standards for these pollutants are health-based and represent a threshold below which health impacts are not expected. The 3-hour average for SO₂ is a welfare standard which is established to protect against decreased visibility and damage to property, vegetation, and animals.

Results since April 1, 2008 are as follows:

The Pahala station exceeded the SO₂ annual standard of 0.03 ppm in 2008; the annual average was 0.07 ppm.

Date	Big Island Location	SO ₂ 24-hour Average (Standard = 0.14 ppm) ¹	SO ₂ 3-hour Average (Standard = 0.5 ppm)	PM _{2.5} 24-hour Average (Standard = 35 µg/m ³) ²
Dec. 31, 2009	Mtn View	0.21 ppm	-	58 µg/m ³
Dec. 27, 2009	Kona	-	-	48 µg/m ³ (possibly due to another brushfire)
Dec. 19, 2009	Kona	-	-	47 µg/m ³ (due to brushfire)
Dec. 18, 2009	Kona	-	-	63 µg/m ³ (due to brushfire)
Dec. 15, 2009	Pahala	0.17 ppm	-	-
Dec. 11, 2009	Pahala	0.17 ppm	-	-
Dec. 10, 2009	Pahala	0.15 ppm	-	-
Dec. 10, 2009	Kona	-	-	36 µg/m ³
Dec. 9, 2009	Pahala	0.18 ppm	0.6 ppm (3-6 a.m.)	-
Nov. 29, 2009	Pahala	0.15 ppm	-	-
Nov. 25, 2009	Pahala	0.22 ppm	0.6 ppm (12-3 a.m.)	-
Nov. 24, 2009	Pahala	0.17 ppm	-	-
Nov. 18, 2009	Pahala	0.19 ppm	-	-
Nov. 17, 2009	Pahala	0.18 ppm	-	-
Nov. 15, 2009	Pahala	0.20 ppm	-	-
Nov. 9, 2009	Pahala	0.18 ppm	0.6 ppm (3-6 a.m.)	-
Sep. 18, 2009	Pahala	0.16 ppm	-	-
Aug. 25, 2009	Pahala	0.20 ppm	-	-
Aug. 18, 2009	Pahala	0.29 ppm	0.7 ppm (12-3 a.m.) 0.6 ppm (6-9 a.m.)	-
May 24, 2009	Mtn View	-	-	40 µg/m ³

May 23, 2009	Mtn View	-	0.6 ppm (9-12 p.m.)	47 µg/m ³
May 22, 2009	Mtn View	-	-	46 µg/m ³
May 17, 2009	Hilo	-	-	36 µg/m ³
	Mtn View	-	-	58 µg/m ³
	Pahala	-	-	38 µg/m ³
May 7, 2009	Pahala	0.18 ppm	0.7 ppm (6-9 a.m.)	-
May 4, 2009	Kona	-	-	39 µg/m ³
May 3, 2009	Kona	-	-	36 µg/m ³
May 2, 2009	Kona	-	-	49 µg/m ³
May 1, 2009	Kona	-	-	44 µg/m ³
April 27, 2009	Pahala	-	-	51 µg/m ³
April 21, 2009	Pahala	-	-	42 µg/m ³
April 20, 2009	Mtn View	-	-	39 µg/m ³
Feb. 2, 2009	Pahala	-	-	38 µg/m ³
Feb. 1, 2009	Pahala	0.16 ppm	0.6 ppm (6-9 a.m.)	-
Jan. 27, 2009	Mtn View	-	-	51 µg/m ³
Jan. 21, 2009	Pahala	0.16 ppm	-	-
Jan. 16, 2009	Pahala	-	-	46 µg/m ³
Jan. 13, 2009	Mtn View	0.18 ppm	-	80 µg/m ³
Jan. 11, 2009	Mtn View	-	-	36 µg/m ³
Dec. 11, 2008	Mtn View	-	-	42 µg/m ³
Dec. 10, 2008	Mtn View	-	-	45 µg/m ³
Dec. 4, 2008	Kona	-	-	44 µg/m ³
	Pahala	0.20 ppm	0.6 ppm (6-9 a.m.)	38 µg/m ³
Dec. 3, 2008	Hilo	-	0.7 ppm (6-9 p.m.)	-
	Kona	-	-	36 µg/m ³
Dec. 1, 2008	Mtn View	-	-	48 µg/m ³
Nov. 28, 2008	Pahala	0.28 ppm	0.9 ppm (3-6 a.m.) 1.0 ppm (6-9 a.m.)	44 µg/m ³
Nov. 26, 2008	Pahala	-	0.7 ppm (6-9 p.m.)	-
Nov. 25, 2008	Pahala	0.16 ppm	-	-
Nov. 22, 2008	Mtn View	-	-	51 µg/m ³
Nov. 8, 2008	Pahala	0.18 ppm	0.6 ppm (6-9 a.m.)	-
Nov. 7, 2008	Pahala	0.22 ppm	-	-
Nov. 6, 2008	Pahala	0.16 ppm	-	-

Oct. 23, 2008	Pahala	0.15 ppm	-	-
Oct. 9, 2008	Pahala	0.24 ppm	0.9 ppm (6-9 a.m.)	-
August 24, 2008	Pahala	0.27 ppm	0.7 ppm (3-6 a.m.) 0.9 ppm (6-9 a.m.)	-
August 21, 2008	Pahala	0.19 ppm	-	-
August 15, 2008	Pahala	0.17 ppm	0.6 ppm (6-9 a.m.)	-
August 13, 2008	Pahala	0.31 ppm	0.6 ppm (12-3 a.m.) 0.9 ppm (3-6 a.m.) 0.6 ppm (6-9 a.m.)	43 $\mu\text{g}/\text{m}^3$
August 9, 2008	Pahala	0.23 ppm	0.7 ppm (6-9 a.m.)	56 $\mu\text{g}/\text{m}^3$
August 8, 2008	Pahala	0.17 ppm	-	-
August 3, 2008	Kona	-	-	44 $\mu\text{g}/\text{m}^3$
August 3, 2008	Pahala	-	-	38 $\mu\text{g}/\text{m}^3$
August 2, 2008	Pahala	0.17 ppm	0.8 ppm (6-9 a.m.)	44 $\mu\text{g}/\text{m}^3$
August 1, 2008	Pahala	0.15 ppm	-	-
July 25, 2008	Pahala	0.18 ppm	-	-
July 24, 2008	Pahala	-	-	37 $\mu\text{g}/\text{m}^3$
July 22, 2008	Pahala	0.22 ppm	-	41 $\mu\text{g}/\text{m}^3$
July 18, 2008	Kona	-	-	36 $\mu\text{g}/\text{m}^3$
	Pahala	0.23 ppm	0.6 ppm (12-3 p.m.)	42 $\mu\text{g}/\text{m}^3$
July 17, 2008	Pahala	0.15 ppm	-	-
July 11, 2008	Pahala	0.15 ppm	-	39 $\mu\text{g}/\text{m}^3$
July 10, 2008	Pahala	0.16 ppm	0.6 ppm (3-6 a.m.)	58 $\mu\text{g}/\text{m}^3$
July 7, 2008	Pahala	0.22 ppm	0.7 ppm (3-6 a.m.)	-
July 6, 2008	Pahala	0.21 ppm	0.8 ppm (3-6 a.m.)	-
July 1, 2008	Kona	-	-	43 $\mu\text{g}/\text{m}^3$
June 28, 2008	Pahala	0.16 ppm	0.6 ppm (3-6 a.m.) 0.7 ppm (6-9 a.m.)	76 $\mu\text{g}/\text{m}^3$
June 26, 2008	Pahala	0.16 ppm	-	-
June 12, 2008	Mtn View	-	-	39 $\mu\text{g}/\text{m}^3$
June 7, 2008	Pahala	0.31 ppm	0.6 ppm (12-3 a.m.) 1.0 ppm (3-6 a.m.) 0.6 ppm (6-9 a.m.)	72 $\mu\text{g}/\text{m}^3$
May 27, 2008	Kona	-	-	37 $\mu\text{g}/\text{m}^3$
May 1, 2008	Pahala	0.19 ppm	0.6 ppm (6-9 a.m.)	-
April 30, 2008	Pahala	0.16 ppm	0.8 ppm (9 p.m. - 12 midnight)	-

April 29, 2008	Pahala	0.21 ppm	-	37 $\mu\text{g}/\text{m}^3$
April 27, 2008	Kona	-	-	42 $\mu\text{g}/\text{m}^3$
April 26, 2008	Kona	-	-	36 $\mu\text{g}/\text{m}^3$
April 25, 2008	Mtn View	0.16 ppm	0.7 ppm	39 $\mu\text{g}/\text{m}^3$
April 24, 2008	Mtn View	-	-	40 $\mu\text{g}/\text{m}^3$
April 16, 2008	Kona	-	-	37 $\mu\text{g}/\text{m}^3$
April 15, 2008	Kona	-	-	37 $\mu\text{g}/\text{m}^3$
April 13, 2008	Pahala	0.18 ppm	-	-
April 6, 2008	Pahala	0.15 ppm	-	-
April 5, 2008	Pahala	0.16 ppm	-	-
April 4, 2008	Pahala	0.25 ppm	0.6 ppm	-
April 3, 2008	Pahala	0.24 ppm	0.7 ppm	-
April 1, 2008	Pahala	0.15 ppm	-	-

¹ ppm = unit of the standard is in parts per million

² $\mu\text{g}/\text{m}^3$ = unit of the standard is in micrograms per cubic meter of air

Communities near the Kilauea volcano are particularly affected by increased levels of SO₂ caused by the recent volcanic activity. Communities farther away from the volcano, such as Kona, will more likely be affected by PM_{2.5}. The DOH is monitoring the SO₂ and PM_{2.5} levels in Kona, Hilo, Mountain View, and Pahala. SO₂ is also being monitored in Pahoa.

As required by rule, public notice will be issued following an exceedance of a National Ambient Air Quality Standard. To see a list of the standards, please visit this site: http://hawaii.gov/health/environmental/air/cab/cabmaps/pdf/federal_and_state_ambient_air_quality_standards.pdf

Elevated levels of pollutants such as SO₂ and PM_{2.5} can cause breathing problems in individuals especially those with pre-existing respiratory conditions, such as asthma, emphysema, and bronchitis. If you have respiratory conditions and live or work in an area impacted by volcanic emissions, consider taking precautionary measures. The following are general recommendations from the American Lung Association:

- Stay indoors and use an air conditioner, if available.
- Do not smoke and avoid second-hand smoke.
- Limit physical exertion.
- Drink plenty of fluids to loosen mucus. Warm beverages seem to work best.
- If you take medications, make sure you have an adequate supply and keep them readily available in a convenient place.
- Contact your physician as soon as any respiratory problem develops.

While these recommendations are intended primarily for persons having respiratory or chronic lung disease, they are also useful for healthy persons during vog episodes. For

additional information on respiratory health, contact your personal physician or the American Lung Association of Hawaii at (808) 537-5966.

If you have any questions, please contact the Clean Air Branch

Phone: (808) 586-4200

Fax: (808) 586-4359

e-mail: cab@doh.hawaii.gov

Revised & Posted January 8, 2010