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**BEFORE THE ADMINISTRATOR
 UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

PRESERVE PEPE'EKEO HEALTH & ENVIRONMENT,)	
)	
Petitioner,)	
)	
v.)	Application for Initial Permit No. 0724-01
)	
LISA P. JACKSON, ADMINISTRATOR of the)	Covered Source Permit No. 0724-01-C
United States Environmental Protection Agency,)	
)	
Respondent.)	
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)	

**PETITION REQUESTING THAT THE ADMINISTRATOR OBJECT TO
 ISSUANCE OF THE PROPOSED TITLE V OPERATING PERMIT FOR
 HU HONUA BIOENERGY, LLC**

Pursuant to Section 505(b)(2) of the Clean Air Act ("CAA"), 40 C.F.R. § 70.8(d), and applicable Federal and State regulations, Preserve Pepe'ekeo Health & Environment ("Petitioner") hereby petitions the Administrator of the U.S. Environmental Protection Agency ("EPA") to object to the Title V operating permit ("Title V permit") issued by the Environmental Management Division of the Clean Air Branch ("CAB"), Hawai'i Department of Health ("DOH" or "the Department"), for the Hu Honua Bioenergy Facility proposed in Pepe'ekeo, Hawai'i. Petitioner urges the EPA Administrator to object to Hu Honua's Permit because evidence in the record establishes that it fails to ensure compliance with the

1 Federal Clean Air Act, the State Implementation Plan (“SIP”), State permitting requirements and other
2 applicable requirements; EPA is under a duty to object under such circumstances. *See* 42 USC § 7661d
3 (b)(1), CAA § 505 (b)(1), 40 C.F.R. § 70.8(c).

4 This petition is timely filed within sixty days following the end of U.S. EPA’s 45-day review
5 period as required by Clean Air Act § 505(b)(2) and 40 C.F.R. § 70.8 (d).

6 It is not permissible for EPA to defer to state authority regarding the adequacy of a Title V
7 permit; if the permit violates the CAA, the Administrator must object. CAA § 505(b)(2); *New York*
8 *Public Interest Research Group v. Whitman* (2d Cir. 2003) 321 F.3d 316, 333, *quoting* 136 Cong. Rec.
9 S16, 895, S16, 944 (1990) (“the Administrator is required to object to permits that violate the Clean Air
10 Act. This duty to object to such permits is a nondiscretionary duty. Therefore, in the event a petitioner
11 demonstrates that a permit violates the Act, the Administrator must object to that permit.”)

12 A Title V permit violates the CAA if it fails to ensure compliance with ‘applicable requirements’
13 (42 USC § 7661c (a), CAA § 504 (a)), including but not limited to: any standard or other requirement
14 under sections 111 and 112 of the Act; any standard or other requirement provided for in the applicable
15 implementation plan; and any standard or other requirement of the regulations promulgated to protect
16 stratospheric ozone under title VI of the Act (40 C.F.R. § 70.2).

17 Hu Honua Bioenergy’s revised draft Title V permit (“Revised Draft Permit”) violates the CAA
18 in that it fails to apply and comply with the requirements for a Prevention of Significant Deterioration
19 (“PSD”) review contained in the Hawai’i Administrative Rules (“HAR”) Title 11, Chapter 60.1, that
20 properly apply to this Project. The draft Permit also fails to ensure compliance with best available
21 control technology (“BACT”) requirements for CO. Moreover, the draft Permit further violates section
22 112 of the CAA, Hawai’i rules limiting emissions of hazardous air pollutants (“HAPs”), and maximum
23 achievable control technology (“MACT”) requirements contained in 40 C.F.R. § 63.43. Additionally,
24 the Permit violates the CAA in failing to provide for monitoring capable of ensuring compliance with
25 emissions limitations for CO and HAPs, and in exempting boiler startup and shutdown emissions from
26 the Permit’s boiler emission limits.

27 In light of these numerous permit deficiencies in Hu Honua’s Revised Draft Permit, construction
28 and operation of the Hu Honua Bioenergy Facility violates the Hawai’i SIP, the State’s Title V

1 permitting program requirements, and the minimum standards for permits established under the Act and
2 Part 70 regulations, and poses a risk to human health and the quality of Hawai'i's environment. Because
3 the Revised Draft Permit is not in compliance with applicable requirements, the EPA is under a duty to
4 object to this Permit, and must direct that this permit application be subject to the state's Title V
5 permitting process as a Major Source.
6

7 **BACKGROUND**

8 The Hu Honua Bioenergy Facility will use mainly eucalyptus wood (approximately 90%) to run
9 a power generating facility; major equipment includes a steam boiler, a steam turbine generator, and an
10 836 kW emergency generator. The Facility also proposes to use 100 percent S15 biodiesel for startups
11 and low loads¹.

12 DOH released the initial draft Covered Source Permit ("CSP") in August of 2010, identifying Hu
13 Honua facility as a synthetic minor instead of a PSD source. After a public hearing on the 2010 Draft
14 CSP in August 2010 and close of the public comment period in October 2010, Hu Honua submitted a
15 Revised Application and a BACT analysis for the boiler in December 2010. Incorporating this new
16 information, DOH then proposed a number of revisions to the draft Permit including the addition of a
17 baghouse, and the removal of 40 CFR Part 63, subpart DDDDD as an applicable Federal regulation.

18 Pepe'ekeo is a small town on the Hamakua Coast, located north of Hilo on the Island of Hawai'i.
19 The Hu Honua Bioenergy Facility would operate near this residential community that has become
20 densely populated after the sugar facility shut down, the area rezoned into five new subdivisions over a
21 hundred residential parcels. Hu Honua proposes to use an ancient, shut down industrial boiler to create
22 a new, relatively dirty electrical generating facility. As evidenced from the public comments and
23 testimony, many residents of Pepe'ekeo oppose the proposed permitting of the facility, citing concerns
24 about health, safety, welfare and overall quality of life concerns. Many residents of Pepe'ekeo are
25 elderly, and considerable portions of the community are ethnic and/or cultural minorities. Exhibit 1,
26 U.S. Census Bureau, American FactFinder, 2005-2009 Data for Pepeekeo Hawaii. Many residents
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28 ¹ While the Revised Draft Permit and Permit Review Summary Project Description appears to contemplate use of biodiesel during low fire periods, the Permit itself does not allow these emissions. Biodiesel is limited only to startup operations under the Permit, however if used part of regular firing, emissions will be considerably greater.

1 experience respiratory discomfort and distress from periodic exposure to emissions from the Kilauea
2 volcano, known colloquially as volcanic smog or VOG.² Hawaii County experiences the highest rates
3 of asthma incidence in the state, with over 12% of its youth population affected, compared to 9.7%
4 statewide. Hawaii Asthma Plan, 2006-2010, Asthma in Hawaii, p. 10, figure 1
5 (<http://hawaii.gov/health/family-child-health/chronic-disease/asthma/downloads/asthmaplan.pdf>). The
6 community of Pepe'keo reflects these statistics. The Hu Honua facility threatens the quality of
7 Pepe'ekeo's air, the integrity of its natural ecosystems, and the health of its population. Significantly,
8 additional permit controls mandated by Federal and State authority could alleviate these concerns.

9 Petitioner Preserve Pepe'ekeo Health and Environment is an organization dedicated to
10 preserving the environment from the air quality threat posed by Hu Honua's proposed facility, and
11 ensuring that energy production is truly sustainable and does not increase air pollution. Its members are
12 residents of Pepe'ekeo who are deeply concerned that deficiencies in the Title V operating permit for the
13 Hu Honua facility does not ensure compliance with requirements of the CAA and the Hawai'i
14 permitting program and that emissions from the Hu Honua facility under the Permit conditions as
15 reviewed by EPA will adversely and disproportionately impact air quality in Pepe'ekeo, unnecessarily
16 endangering the health, safety and welfare of themselves and their community. Petitioner and other
17 concerned residents of Pepe'ekeo raised numerous objections to the adequacy of the Title V permit
18 proposed for the Hu Honua facility during state proceedings. Petitioner retained Dr. Petra Pless
19 (D.Env), an environmental engineer with extensive experience reviewing and commenting on CAA
20 permits for industrial facilities including biomass-fired power plants, to review and comment upon Hu
21 Honua's Draft Permit and Revised Draft Permit. *See* Pless Environmental, Comments on Revised Draft
22 Covered Source Permit for Hu Honua Bioenergy, LLC 10/8/10 and 3/21/11 (Exhibits 3 and 4). This
23 petition is based on those objections that were raised with reasonable specificity during the public
24 comment period.

25
26 ² Pepe'keo is exposed to VOG during certain meteorological conditions. "Kona winds" blow from the south
27 during periods when easterly "Trade Winds" are not present. "when light "kona" winds . . . blow, much of the
28 vog is concentrated on the eastern side of the island." U.S. Geological Survey Fact Sheet 169-97, Online Version
1.1, revised June 2000, <http://pubs.usgs.gov/fs/fs169-97/>, attached as Exhibit 2. Additionally, residents of
Pepe'keo travel all over the island for work and social purposes and thus, like all Big Island residents, they are
exposed to VOG to varying degrees.

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GROUNDS FOR OBJECTION

Following are the specific objections that Petitioner has to the adequacy of Hu Honua's proposed Title V permit. Notably, the Facility's calculated Potential to Emit ("PTE") for both criteria pollutants and HAPs are extraordinarily close and just below the thresholds for Major Source review, and Hu Honua impermissibly underestimates facility emissions to stay clear of these thresholds, to avoid PSD review and a case-by-case MACT determination. These and the additional objections discussed below make clear that the permit is not in compliance with the Clean Air Act and the state's Title V permitting program, and therefore EPA must object to the proposed permit. 40 C.F.R. § 70.8(c); *Whitman, supra*, 321 F.3d at 333.

1. The Administrator Must Object Based on Issues Raised by the EPA Itself

EPA Region IX submitted a letter commenting on the Draft Permit dated June 30, 2011, which "identified significant concerns regarding the need for practically enforceable permit conditions to limit the source's potential to emit (PTE) to ensure the source is not a major source under the Prevention of Significant Deterioration (PSD) program or a major source of hazardous air pollutants (HAPs) subject to case-by-case Maximum Achievable Control Technology (MACT)." Exhibit 5. The EPA letter falls short of "objecting" to Hu Honua's Draft Permit, rather deferring to CAB to add final permit conditions including source testing to ensure, on an on-going basis, that Hu Honua is not a major source of CO and HAPs, and that if the testing determines that the facility will be a major source, PSD and MACT would apply at that juncture. This approach however, EPA notes, would "make it more difficult for CAB to ensure that all Clean Air Act (CAA) requirements are implemented correctly".

The CAA precludes EPA from deferring to state authority regarding the adequacy of a Title V permit. CAA § 505(b)(2); *Whitman*, 321 F.3d at 333. The June 30, 2011 EPA letter represents an impermissible deferral to CAB to determine, on a post-hoc basis, whether the facility is subject to PSD and MACT. HAR § 11-60.1-90 (1) specifically requires that permits contain "emission limitations and standards, including operational requirements and limitations to assure compliance with all applicable requirements at the time of permit issuance" (emphasis added). The Revised Draft Permit that the EPA

1 and the public reviewed does not contain operational requirements and limitations to assure compliance
2 with all applicable requirements, and EPA's comments acknowledge this fact in identifying additional
3 conditions that CAB "must add to the final permit to ensure on an on-going basis that Hu Honua is not a
4 major source of CO or HAPs". Where, as here, the draft permit is inadequate, EPA has a duty to object.
5 (CAA § 505(b)(2); *Whitman*, 321 F.3d at 333).
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7 **2. The Permit Fails to Ensure Compliance with Criteria Air Pollutant Emission Limits**

8 A facility qualifies as a Major Stationary Source where it "emits, or has the potential to emit two
9 hundred fifty tons per year or more of any air pollutant subject to regulation approved pursuant to the
10 Act". HAR § 11-60.1-131 (2). Major Sources are then subject to the requirements of the PSD program.
11 The Revised Permit Application for the Hu Honua facility provides that "controlled emissions of
12 regulated air pollutants will remain under 250 tons per year so the facility will not be a major stationary
13 source subject to PSD" (Revised Permit Application, 12/23/2010, p. 19). The 250 tons per year (tpy)
14 major source threshold however would be triggered had Hu Honua utilized a more accurate emission
15 factor for CO.
16

17 a. **The Draft Permit Underestimates CO Emissions**

18 The Revised Permit Application for the Hu Honua facility identifies the facility's potential to
19 emit CO at 246.4 tpy, only 3.6 tpy under the 250 ton major source threshold. Permit Application,
20 12/23/2010 ("Revised Permit Application"), p. 11 (Table 3-3). EPA Region IX expressed significant
21 concerns regarding the accuracy of the CO emission limit in its comment letter of June 30, 2011.
22 Specifically, the EPA comments criticize the "failure to provide any documentation or justification of
23 the CO emission factor used to calculate the CO PTE". The EPA comments also note that the "CO
24 emission limit proposed by CAB would be among the lowest EPA has ever seen nation-wide for
25 biomass-fired boilers, including boilers with add-on CO control devices". Overall "EPA believes that
26 CAB has not sufficiently documented that this boiler will not be a new major source of CO." Petitioner
27 concurs with EPA's comments, but disagree that providing CAB with additional documentation is
28

1 adequate. For the reasons discussed below, we believe EPA must object to Hu Honua's Revised Draft
2 Permit.

3
4 i. CO Emission Factor for Biodiesel

5 The Revised Permit Application calculates the facility's PTE as the "sum of the annual emissions
6 listed under boiler peak load and startup." Revised Permit Application, p. 11. Boiler startup emissions
7 of CO are based on an emission factor for CO reported in the Minnesota Air Pollution Biofuels Report
8 ("MN Biofuels Report")³. Use of this emission factor drastically underestimates CO emissions during
9 startup. First, the MN Biofuels Report determined the CO emission factor based on steady-state
10 operational conditions, not during startup. Emission rates fluctuate during boiler startup and shutdown
11 conditions, and may be dramatically higher than those determined for steady-state conditions. *See*, Pless
12 Comments, Exhibit 4, p. 4. Specifically,

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14 Emissions of CO, in particular, are sensitive to boiler operating conditions, particularly during
15 boiler startup because the boiler itself is relatively cool and the low air flow rates make it
16 difficult to obtain good air/fuel mixing. Because of unstable combustion conditions, CO emission
17 rates can fluctuate dramatically. For these reasons, CO emissions can "spike" when transient
18 conditions occur during boiler startup and shut down. For example, a recent permit application
19 for a state-of-the-art circulating 800 MMBtu/hr biomass-fired fluidized bed boiler estimated that
20 uncontrolled CO emissions during startup would be on the order of 800 pounds per hour
21 ("lb/hour"). [We Energies Biomass Energy Project, Revised Control Technology Review for
22 Carbon Monoxide Emissions for the Biomass-Fired Boiler, September, 2010, p. 26.] In another
23 recent permit application for a 354 MMBtu/hr biomass-fired boiler, the applicant proposed a
24 startup/shutdown CO emission rate limit of 400 lb/hour (1-hour average). [Sierra Pacific
25 Industries, Biomass-Fired Cogeneration Project, Anderson, California, Prevention of Significant
26 Deterioration and Authority to Construct Permit Application, May 2007, p. 6.] In comparison,
27 the Applicant's calculation of startup emissions for the 407-MMBtu/hr boiler is based on CO
28 emissions of 5.6 lb/hour.

29 Further compromising the accuracy of Hu Honua's calculated CO emissions, the MN Biofuels
30 Report itself rates this emission factor as "D" because it is considered "[l]ow-quality data, and extremely
31 limited number of data points from a single source, or a single data point." MN Biofuels Report, pp. 4-7

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38 ³ Minnesota Pollution Control Agency, *Emission Factors for Priority Biofuels in Minnesota* (June 30, 2007),
selected pages attached as Exhibit 6.

1 (Table 4-6) and 4-5. Specifically the CO emission factor of 0.055lb /MMBtu is based on only two data
2 points, 0.006 and 0.104 lb/MMBtu. *Id.*

3 Not only do Hu Honua's calculated CO emissions underestimate startup emissions, they also
4 omit emissions during shutdown or upset conditions (discussed further in section 4, below). Total
5 annual emissions of CO are estimated at 246.4 tons/year, just 3.6 tons or 7,200 pounds per year shy of
6 the 250 tons/year PSD significance threshold for major source determination. Actual emissions of CO
7 are likely to exceed the PSD threshold when accounting for startup, shutdown and upset conditions.
8

9 b. The Draft Permit Fails to Include Emissions Limitations and Monitoring for SO₂

10 Title V permits must incorporate emissions limitations and standards, including operational
11 requirements and limitations to assure compliance with all applicable requirements at the time of permit
12 issuance. HAR § 11-60.1-90 (1). Title V permits must also contain periodic monitoring sufficient to
13 yield reliable data from the relevant time period that are representative of the source's compliance with
14 the permit. 40 C.F.R. §§70.6 (a)(3) and 71.6 (a)(3); EPA Periodic Monitoring Guidance, pp. 3-4; *see*
15 HAR § 11-60.1-90 (7)(B). The Draft Permit contains neither emission limits nor monitoring provisions
16 for emissions of the criteria pollutant sulfur dioxide ("SO₂"), which would be emitted from biofuel
17 combustion in the boiler. Hu Honua stated that uncontrolled SO₂ emissions are expected to be 0.045
18 lb/MMBtu based on an average sulfur content of 0.001% in the wood but would vary depending on the
19 wood. Hu Honua stated that controlled SO₂ emission rate of 0.028 lb/MMBtu would be achieved
20 through trona or lime injection as needed. Revised Permit Application, Table 3-2, footnote 3, p. 9. Hu
21 Honua then calculated annual SO₂ emissions, based on a controlled SO₂ emission rate of 0.028
22 lb/MMBtu and a maximum fuel input of 2,800,000 MMBtu/year for the boiler, of 39.2 tons/year, just
23 0.8 tons/year shy of the 40 tons/year significance threshold set in HAR §11-60.1-1 for determining
24 major source status. Revised Permit Application, p. 11. However, the Draft Permit contains no
25 provisions to monitor SO₂ and, thus, lacks a trigger for the adjustment of sorbent injection if the SO₂
26 emission rate of 0.028 lb/MMBtu were exceeded. Without emission limits and adequate compliance
27 monitoring provisions for SO₂ emissions from the Facility, emissions may exceed the major source
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1 significance threshold for SO₂ emissions of 40 tons/year set in HAR §11-60.1-1, which would require a
2 BACT analysis for SO₂.

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4 c. The Permit Lacks Enforceable Conditions Limiting Biodiesel Usage

5 Permit Review Summary expressly allows for the use of biodiesel (S15) for both startup and as
6 “supplemental fuel” during low-load operation of the boiler. The Revised Draft Permit conditions
7 however only limit biodiesel usage during startup, and not as part of regular firing. See Condition D.c.i.
8 Additionally, conditions in section E of the Revised Draft Permit fails to include a condition for
9 determining the heat input of biodiesel (in MMBtu/gallon) and a condition specifying how total
10 biodiesel (S15) heat input to the boiler is determined and calculated (gallons per month x heat content).
11 See Pless Comments, Exhibit 4, p. 3. Absent adequate fuel usage limits and monitoring provisions, the
12 Revised Draft Permit fails to ensure that the facility is a synthetic minor source.

13
14 d. Post-Issuance Testing and Controls to Limit CO and NO_x Emissions Are Not
15 Federally Enforceable

16 EPA guidance documents address appropriate strategies to artificially limit PTE for otherwise
17 major sources to allow them to enjoy minor source status. See EPA’s Potential to Emit Guidance is
18 found in three Memoranda dated January 25, 1995 and restated August 25, 1996 and July 10, 1998.
19 EPA must have a “direct right” to enforce these limitations, and they “must be enforceable as a
20 practicable matter”. The Hu Honua facility cannot qualify as a synthetic minor source because the
21 Revised Draft Permit lacks federally enforceable conditions to ensure compliance with emissions
22 limitations for CO and NO_x. The EPA letter explains:

23 If Hu Honua is permitted as a synthetic minor instead of a PSD source, the final synthetic minor
24 permit that CAB issues must make the facility’s CO and NO_x PTE limits practically enforceable.
25 The proposed permit is missing conditions that are necessary to make the CO and NO_x PTE
26 limits practically enforceable and allow the source to avoid PSD, in accordance with EPA
27 guidance on limiting PTE. EPA’s longstanding guidance to permitting authorities and the
regulated community has been that to effectively limit a source’s PTE, permit conditions must be
practically enforceable.

28 See Exhibit 5, ¶ 2. The EPA letter then recommends extensive additional after the fact testing and then

1 imposition of subsequent controls. This approach is inappropriate because permit conditions must be
2 federally enforceable, and using the approach outlined in the EPA letter, the facility's emissions will not
3 be known, and permit limitations cannot be enforced until well after initial startup and after a violation
4 occurs. After-the-fact enforcement does not remedy the air pollution or human health consequence, and
5 Petitioner is gravely concerned if this facility is operated even initially, the operator would seek to
6 achieve permit modifications to allow the much higher actual emissions. Since the State has failed to
7 properly quantify projected emissions and secure adequate initial and on-going emissions, and to impose
8 practically and federally enforceable emissions limitations, EPA cannot adequately enforce these
9 limitations and thus must object to this permit.

10
11 **3. The Permit Fails to Ensure Compliance with BACT Requirements for CO**

12 Hu Honua's CO calculated emissions of 245.4 tons/year exceed the significance level of 100
13 tons/year established by HAR § 11-60.1-1, and accordingly BACT is required for CO. The Revised
14 Draft Permit sets a CO emission limit for the boiler at 0.176 lb/MMBtu based on a 30-day rolling
15 average except during startup and shutdown, as demonstrated by the CO CEMS. Discussed below, this
16 emission limit is not BACT. Best Available Control Technology (BACT) is defined in HAR § 11-60.1-
17 1 as:

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19 ...an emission limitation based on the maximum degree of reduction for each pollutant subject to
20 regulation under the Act which would be emitted from any proposed major stationary
21 source...which the director, on a case-by-case basis, taking into account energy, environmental,
22 and economic impacts and other costs, determines is achievable for such source...

23 *See also* CAA § 169(3), 42 U.S.C. § 7479(3).

24 "EPA has developed a "top-down" process that permitting authorities use to ensure that a BACT
25 analysis satisfies the applicable legal criteria." *In re. Louisville Gas and Electric Company* (Trimble
26 County Generating Station) (Order on Petition)(September 10, 2008) pg. 6. Under this top-down
27 approach, "the most stringent control technology is established as necessary to achieve BACT-level
28 emission limits unless the applicant demonstrates, and the permitting authority determines, that technical
considerations, or energy, environmental, or economic impacts justify a conclusion that the most
stringent technology is not achievable in that case." *Id.* "An incomplete BACT analysis, including

1 failure to consider all potentially applicable control alternatives, constitutes clear error.” *Id.*, citing
2 *Prairie State*, slip op. at 19; *In re Knauf Fiber Glass, GmbH*, 8 E.A.D. 121, 142 (EAB, February 4,
3 1999); *In re Masonite Corp.* 5 E.A.D. 551, 568-569 (EAB, November I, 1994).

4 The Revised Draft Permit identifies Good Combustion Practices (“GCP”) combined with
5 overfire air (“OFA”) to reach an emission limitation of 0.176 lb/MMBtu as BACT for CO. Top-Down
6 BACT Analysis for Biomass-Fueled Boiler (ERM, December 2010), p. 12. While Hu Honua’s BACT
7 Analysis purports to follow the “top-down” process, the BACT analysis of CO is incomplete. First, the
8 emission limitation identified as BACT excludes startup and shutdown. Hu Honua has not
9 demonstrated, in the BACT Analysis or elsewhere, why BACT would not include limiting emissions
10 during startup and shutdown necessary to achieve the maximum degree of reduction (*see* section 4,
11 below for further discussion of startup and shutdown). Further, the analysis identifies significantly
12 lower CO emission limits at another facility (Aspen Power – Lufkin Generating Plant (TX)) of 0.0750
13 lb/MMBtu (30-day average) achieved through GCP but does not describe the specifics of the GCPs
14 utilized at that facilities, or why Hu Honua could not achieve comparable emissions. Top-Down BACT
15 Analysis, pp. 10, 12.

16 Because the BACT analysis does not demonstrate why including startup and shutdown emission
17 limitations, and/or GCP to achieve an emission limit of 0.0750 lb/MMBtu (30-day average) are not
18 achievable, the analysis is legally inadequate. *Louisville Gas and Electric, supra*, pg. 6.

19
20 **4. The Permit Fails to Ensure Compliance with Hazardous Air Pollutant Emission**
21 **Limits**

22 A Major Source of hazardous air pollutants is “any stationary source . . . that emits or has the
23 potential to emit . . . 10 tons per year of any hazardous air pollutant or 25 tons per year or more of any
24 combination of hazardous air pollutants [“HAPs”].” HAR § 11-60-1 (defining “Major Source”); 42
25 USC § 7412 (a)(1); CAA § 112 (a)(2). Hu Honua estimated the facility’s HAPs emissions at 23.8 tpy,
26 just 1.2 tpy under the major source threshold. While Hu Honua applied AP-42 emission factors to all
27 other HAPs from wood combustion, it chose different emission factors for HCl and acrolein. Using the
28 AP-42 emission factors for HCl, acrolein, or both would result in the facility exceeding the 25 tpy major

1 source threshold. Hu Honua's manipulation of emissions factors results in the facility avoiding
2 numerous requirements applicable to major HAP sources, which are necessary and applicable to ensure
3 that HAP emission levels do not exceed safe levels. The failure of the Permit to include such
4 requirements results in a seriously flawed permit that is wholly incapable of ensuring compliance with
5 section 112 of the CAA and protecting the health and welfare of the residents of Pepe'ekeo.
6

7 a. Hydrogen Chloride Emissions

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9 Hydrogen chloride ("HCl") (also referred to as hydrochloric acid or chloride) is a hazardous air
10 pollutant listed in section 112 (b)(1) of the Clean Air Act. The permit application identifies the facility's
11 HCl PTE at 5.5 tpy. Revised Permit Application, 12/23/2010, p. 13. However the emission factor used
12 to calculate the 5.5 tpy PTE was calculated by picking favorable, low chlorine numbers from the range
13 of test surveys. Hu Honua's Application for New Covered Source Permit (8/2009) Appendix D
14 ("Appendix D") surveyed 4 sets of eucalyptus wood test data. The permit limits are based on chlorine
15 concentration of 0.03%, when an average of the 6 eucalyptus samples included in Table 2-A of
16 Appendix D showed an average chlorine concentration of 0.12%, and a high of 0.434% in rose gum
17 bark. Hu Honua skewed the chlorine concentration of Project feedstock and emissions by omitting the
18 highest concentration feedstock - rose gum bark - and including the lowest concentration - rose gum
19 without bark - even though the Revised Draft Permit includes bark in the boiler's feedstock. Permit
20 Condition D.1.b.ii ("Wood fuel shall consist of chips or pellets of uncontaminated whole tree wood,
21 including stumps, branches, bark, chips, and sawdust"). Rose gum eucalyptus is a common species in
22 the Project region and a probable fuel source. Appendix D, *supra*. Utilizing a higher emission factor
23 that is more representative of the boiler's feedstock would increase the HCl PTE considerably, and is
24 likely to result in the facility exceeding the major source threshold for HAPs of 25 tpy.

25 b. Acrolein

26
27 Acrolein is a hazardous air pollutant listed in section 112 (b)(1) of the Clean Air Act. Hu Honua
28 calculated all boiler emissions using EPA AP-42 emission factors with the exception of HCl and
acrolein. Instead, the acrolein emissions are based on emission factors from Maine Department of

1 Environmental Protection (DEP), Bureau of Air Quality. Permit Application, p. 12. It is common
2 knowledge that tropical eucalyptus does not grow in Maine and thus is not a common feedstock for
3 Maine biomass boilers, making the exclusive reliance on Maine's data highly questionable. The AP-42
4 emission factor is nearly 50 times higher than the Maine DEP emission factor used by Hu Honua and
5 CAB to calculate the Facility's acrolein emissions. EPA Region IX expressed serious concern regarding
6 the accuracy of the Maine DEP emission factor for the Hu Honua facility, and notes that "the permit
7 does not contain source test requirements for acrolein to verify that the proposed emission factor is
8 accurate for wood combustion at Hu Honua." *Id.* The choice of emission factor is significant here,
9 because "[i]f the HAP calculation had been based on the AP-42 factor for acrolein, acrolein emissions
10 would be 5.6 tpy and total HAPs would be 29 tpy, which exceeds the HAP major source threshold."
11 EPA Comments, ¶ 4. Because the accuracy of the Maine DEP emission factor with respect to the
12 eucalyptus feedstock for Hu Honua is not verified, the more conservative AP-42 emission factor must be
13 used in PTE calculations.

14
15 c. Proposed HAPs Testing Fails to Ensure Compliance with Applicable Regulations

16 Requirements established at 40 C.F.R. §§70.6 (a)(3) and 71.6 (a)(3) "specifically note that each
17 permit shall contain periodic monitoring sufficient to yield reliable data from the relevant time period
18 that are representative of the source's compliance with the permit." EPA Periodic Monitoring Guidance,
19 pp. 3-4; *see* HAR § 11-60.1-90 (7)(B). The Revised Draft Permit fails to include adequate assurances
20 that the irregular fuel source, principally eucalyptus wood and eucalyptus wood scraps, will be
21 monitored at sufficient frequencies to assure achievement of the emissions limitations. EPA Region IX
22 commented that an initial source test and annual source testing is required to ensure that emissions from
23 Hu Honua do not exceed the major source thresholds of 10 tpy for each HAP and 25 tpy for all HAPs.
24 Exhibit 5, ¶ 4. However, because the wood fuel stock is naturally variable, more frequent source testing
25 - preferably continuous - is required for all HAPs (not only HCl - see Special Condition E.7). These
26 type of permit adjustments are necessary to achieve the Clean Air Act's requirement that methods
27 "provide sufficiently reliable and timely information for determining compliance" comparable to
28 continuous emissions monitoring. 42 U.S.C. § 7661c(b). Further, because the Revised Draft Permit

1 proposes testing that is highly unlikely to yield reliable data representative of the facility's compliance
2 with permit conditions, it fails to ensure the facility's compliance with emission limits.
3

4 d. The Facility is a Major Source Based on Total HAPs

5 Hu Honua's permit application reported total facility HAPs emissions of 23.8 tpy, very close to
6 the HAP Major Source threshold of 25 tons. Permit Application, 12/23/2010, p. 13. Discussed above,
7 Hu Honua applied the AP-42 emission factors to all HAPs from wood combustion with the exception of
8 HCl and acrolein, without demonstrating the accuracy of the alternative emission factors used. If Hu
9 Honua had applied the AP-42 emission factors to HCl, acrolein, or both, the facility's emissions would
10 exceed the 25 tpy major source threshold for MACT applicability.
11

12 5. The Baghouse Is Not Adequately Described or Monitored

13 Hu Honua relies on the installation and operation of a baghouse to control particulate matter
14 ("PM") exhaust emissions from the boiler.⁴ CSP Review Summary (3/21/11), p. 3. The Revised Draft
15 Permit however fails to include an adequate description of the baghouse (e.g. number of bags, capacity)
16 or any conditions specifying maintenance and inspection requirements for baghouse operations. Exhibit
17 4, p. 6. Compliance with PM emission limits would only be determined by an initial and annual source
18 tests (Conditions A.1.a.i and D.2) and boiler exhaust would be monitored by the continuous opacity
19 monitoring system ("COMS"), which would indicate exceedences of the 20% opacity limit set in
20 Condition C.4. *Id.* Under these circumstances the Revised Draft Permit fails to ensure continuous
21 compliance with the proposed BACT limits for PM as required by Condition C.4. *Id.*
22

23 6. The Permit Fails to Ensure Compliance with Applicable HAR and SIP Requirements

24 HAR §11-60.1-179 prohibits the emission of HAPs from any stationary source in quantities that
25 contribute to an ambient air concentration that endangers human health, and provides that provides that
26 any new major source of hazardous air pollutants must demonstrate that emissions of HAPs from the
27

28 ⁴ The baghouse is also relied upon to reduce HCl emissions (CSP Review Summary (3/21/11), p. 3, Equipment Description).

1 source will not contribute to any significant ambient concentrations of HAPs. Additionally, Hawai'i's
2 SIP similarly prohibits any person from permitting or causing air pollution, defined as "the presence in
3 the outdoor atmosphere of one or more air pollutants in such quantities and duration as is or tends to be
4 injurious to human health or welfare . . ." HAR §§ 11-60-17, 11-60-1 (def. "Air Pollution"). Discussed
5 throughout this Petition, Hu Honua severely underestimated its emissions of both HAPs and criteria air
6 pollutants, and accordingly the modeling underestimated the facility's health risk. Additionally, the
7 accuracy of the meteorological data used in the modeling is questionable, given that it was collected at
8 the Hilo International Airport and not Pepe'ekeo. The Revised Permit Application (on page 29)
9 summarily states that the "wind flow patterns are comparable", however provides no support for that
10 assertion. Because the Permit fails to ensure that the Facility will not emit HAPs and criteria air
11 pollutants at levels injurious to human health, it does not comply with the above requirement of HAR
12 §11-60.1-179 and Hawai'i's SIP.

13
14 **7. The Permit Fails to Ensure Compliance with MACT Requirements**

15 A Major Source of HAPs, Hu Honua is required to obtain from the permitting authority (DOH),
16 an approved MACT determination according to one of the review options specified in the applicable
17 regulation. 40 C.F.R. § 63.43; HAR §§ 11-60.1-174 and 11-60.1-175. Because Hu Honua has
18 artificially reduced its HAP emission thresholds to avoid Major Source classification, no MACT
19 determination was sought.

20
21 **8. The Permit Impermissibly Exempts Startup and Shutdown from Emission Limits**

22 It is well established that permit limitations must embrace all facility emissions, including those
23 associated with equipment startup, shutdown and malfunction. *See Sierra Club v. EPA* (D.C. Cir. 2008)
24 551 F.3d 1019; EPA Memorandum re. Vacatur of Startup, Shutdown, and Malfunction (SSM)
25 Exemption (July 22, 2009). Federal law requires all project emissions be quantified and reported,
26 including all startup, shutdown, maintenance and malfunction emissions. 42 U.S.C. §§ 7410(a);
27 7661c(a). Additionally HAR §11-60.1-16 requires reporting of "deviations". The Revised Draft Permit
28

1 violates these federal and state requirements because it fails to require compliance with boiler emission
2 limits during boiler startup and shutdown. Specifically, Condition C.2 of the Revised Draft Permit
3 provides:
4

5 The NO_x, VOC and HCl emission limits shall be complied with at all times, except during boiler
6 startup, shutdown. The CO emission limit shall be based on a 30-day rolling average, and shall
7 be complied with at all times, except during boiler startup and shutdown, as demonstrated by the
8 continuous emissions monitoring system.

9 This condition improperly excludes a significant portion of the facility's emissions that must be included
10 in the permit for purposes of calculating the potential to emit and the applicability of Major Source
11 procedures and requirements, including PSD and MACT requirements. By excluding these emissions,
12 the Revised Draft Permit fails to ensure compliance with applicable requirements.

13 **9. The Facility's Biomass Handling, Chipping, and Storage Operation Does Not Qualify**
14 **As an "Insignificant Activity"**

15 The Permit Review Summary identifies the electric chipper operating within an enclosed chipper
16 building with building dust collector as an "insignificant activity" pursuant to HAR §11.60.1-82(f)(7).
17 CSP Review Summary, p. 3 ("Insignificant Activities"). As demonstrated below, the Facility's biomass
18 handling and chipping operations do not qualify as an "insignificant activity" pursuant to HAR §11.60-
19 82(f)(7) and associated emissions must therefore be included in the Facility's PTE.

20 *Definition of Insignificant Activities Pursuant to HAR §11.60-82(f)(7)*

21 HAR §11.60-82(f)(7) defines insignificant activities based on size, emission level, or production
22 rate as those which emit less than:

- 23 (A) 500 pounds per year of a hazardous air pollutant;
24 (B) twenty-five percent of significant amounts of emission as defined in section 11-60.1-1,
25 paragraph (1) in the definition of "significant;"
26 (C) five tons per year of carbon monoxide; and
27 (D) two tons per year of each regulated air pollutant other than carbon monoxide;
28

1 and which the director determines to be insignificant on a case-by-case basis.

2
3 The Permit Review Summary fails to quantify emissions from the Facility's chipper operations
4 and, thus, fails to demonstrate that the Facility's chipper operations would indeed satisfy the conditions
5 of HAR §11.60-82(f)(7), specifically that emissions of particulate matter would not exceed the specified
6 thresholds pursuant to Subsections (B) and (D).

7 Any emissions from the biomass fuel handling system that can be reasonably captured and
8 vented through a stack (*i.e.*, non-fugitive emissions), *e.g.*, particulate matter emissions from the building
9 dust collector on the enclosed chipper building, must be quantified and included in the Facility's PTE.
10 Pless Comments, Exhibit 3, pp. 4-5.

11 a. Facility Chipping Operations Would Exceed the Two Ton/Year Significance Threshold
12 pursuant to HAR §11.60-82(f)(7)(D) for Particulate Matter

13 As discussed above, neither the Permit Review Summary nor the Draft Permit provide any
14 information for the Facility's electric biomass chipping operation beyond stating that the chipper would
15 operate within an enclosed chipper building with building dust collector. CSP Review Summary
16 (3/21/11), p. 3). Due to this utter lack of information, it is impossible to estimate emissions from these
17 activities. However, review of other similar facilities reveals that the PTE for PM10 from wood chipping
18 activities would by far exceed the two-tons/year threshold specified HAR §11.60-82(f)(7)(D). For
19 example, the recently permitted Adage Hamilton, LLC, biomass-fired power plant in Hamilton County,
20 Florida, which has approximately twice the capacity as the Hu Honua facility (834 MMBtu/hour boiler)
21 estimates emissions of 15.7 tons/year of PM and 7.4 tons/year of PM10.⁵ Since this will be a new
22 facility that only receives wood chips and will have no on-site chipping of logs, emissions will likely be
23 considerably lower than at the Hu Honua facility. Thus, a low estimate of biomass handling, chipping,
24 and handling for the Hu Honua can be made of about 7.8 tons/year of PM and 3.7 tons/year of PM10.
25 These emissions clearly exceed the two-ton/year threshold set forth in HAR §11.60 82(f)(7)(D). Thus,

26
27 ⁵ ADAGE Hamilton LLC, Hamilton County, Project: Application for Air Permit to Construct a Nominal 50-
28 Megawatt (MW) Woody Biomass Power Plant, Location: Hamilton County, Florida 32053, State Road 6 at
County Road 146, May 20, 2009, Table 2-1;
http://www.dep.state.fl.us/Air/emission/bioenergy/adage/adage_hamilton_co.pdf.

1 the Revised Draft Permit is flawed for failing to include emissions from the biomass handling, storage,
2 and chipping operation in the Facility's PTE. Pless Comments, Exhibit 3, p. 5.

3
4 **10. The Permit Fails to Address Emissions from Trona or Lime and Ash Handling**

5 The Permit Review Summary did not include emissions from trona or lime handling or from ash
6 handling. Emissions that can be reasonably captured and vented through a stack (*i.e.*, non-fugitive
7 emissions) *e.g.*, particulate matter emissions from a storage silo captured via a vent filter, must be
8 quantified and included in the Facility's PTE. Pless Comments, Exhibit 3, p. 13.

9
10 **11. CAB Failed to Address Ammonia Slip and Sulfuric Acid Mist Emissions**

11 Neither the Application nor the Permit Review Summary or the Draft Permit mention the
12 ammonia slip emissions that would be associated with the proposed Nalco ROTAMIX selective non-
13 catalytic reduction system (or equivalent) or the sulfuric acid mist emissions associated with biomass-
14 firing. These emissions must be quantified, permit limits must be set, and enforceable permit conditions
15 must be developed. Pless Comments, Exhibit 3, p. 13.

16
17 **12. DOH Failed to Directly Regulate and Evaluate the Impacts of PM 2.5 Emissions**

18 The Department may issue a permit for construction of a stationary source only after evaluating
19 all regulated air pollutants that the source would emit in a significant amount. 45 CSR §§ 13-2.24.b
20 (defining "stationary source"), § 13-8.3 (requiring publication of "the type and amount of air pollutants
21 that will be discharged"); at 14-2.79 and 14-21.1.b. The promulgation of a National Ambient Air
22 Quality Standard ("NAAQS") for fine particulate matter, also known as PM 2.5, on July 18, 1997
23 triggered the duty to apply the NSR requirements to fine particulate matter. 70 Fed. Reg. 65,984,
24 66,043, November 1, 2005; 45 CSR § 13-2.20.b (defining "regulated air pollutant" as "[a]ny air
25 pollutant for which a national ambient air quality standard has been promulgated..."). In issuing the
26 final NSR PM2.5 implementation rule in May 2008, EPA stated that states are obligated to address
27 direct PM2.5 and precursor emissions from both major and minor sources. 73 Fed. Reg. 28,321, 28,344,
28

1 May 16, 2008. As such, the Department must directly assess and regulate PM 2.5 emissions from the
2 Facility, even if it determines that the Facility is not major source of PM2.5 or any other pollutant. Fine
3 particulate matter poses serious health risks; by limiting it, the Department would protect the public
4 health and save Hawaii substantial health care costs, as discussed below. Pless Comments, Exhibit 3, p.
5 13.

6
7 a. PM2.5 Emissions Have Significant Public Health Impacts

8
9 PM 2.5 emissions are widely known to cause significant public health and environmental
10 impacts. According to the U.S. EPA, the PM2.5 fraction of particulate matter is distinguishable from the
11 PM10 fraction, as the smaller particles pose the “largest health risks.”⁶ In fact, in a 1996 report on the
12 need to revise the NAAQS for PM, EPA staff found that the epidemiological data more strongly
13 supports fine particles as the surrogate for the fraction of PM most clearly associated with health effects
14 at levels below the standards in place at that time. *Id.*, p. V-77. Disturbingly, PM2.5 has been linked to
15 premature death, in addition to aggravation of respiratory and cardiovascular disease (as indicated by
16 increased hospital admissions for asthma, emergency room visits, absences from school or work, and
17 restricted activity days), changes in lung function and increased respiratory symptoms, and more subtle
18 indicators of cardiovascular health.⁷ The EPA also has identified lung cancer deaths, infant mortality
19 and developmental problems (such as low birth weight in children) as possibly linked to PM2.5.⁸
20 Children are especially susceptible to the harms from PM2.5. According to the American Academy of
21 Pediatrics, children and infants are among the most susceptible to many air pollutants, including PM2.5.

22
23 ⁶ See U.S. Environmental Protection Agency, PM2.5 NAAQS Implementation;
24 http://www.epa.gov/ttnnaaqs/pm/pm25_index.html; see also U.S. Environmental Protection Agency, Office of Air
25 Quality Planning and Standards, Review of the National Ambient Air Quality Standards for Particulate Matter:
26 Policy Assessment of Scientific and Technical Information, Staff Paper, July 1996, (“PM2.5 Staff Paper”), pp. V-
27 58 to V-77 (discussing health studies of fine versus coarse particles);
28 <http://www.epa.gov/ttn/naaqs/standards/pm/data/1996pmstaffpaper.pdf>.

⁷ Clean Air Fine Particle Implementation Rule, 72 Fed. Reg. 20586, 20586-20587, April 25, 2007, (to be codified at 40 CFR Part 51).

⁸ See National Ambient Air Quality Standards for Particulate Matter, Proposed Rule, 71 Fed. Reg. 2620, 2627, January 17, 2006.

1 Exposure to high levels of fine particulates impacts the ability of children's lungs to grow.⁹ This
2 damage is irreversible, and subjects children to greater risk of respiratory problems as adults. Children
3 also have increased exposure compared with adults because of higher minute ventilation and higher
4 levels of physical activity, and thus face serious health problems from PM2.5 pollution. This
5 susceptibility is evidenced by a recent study of PM2.5 and asthmatic children in Detroit, which
6 emphasizes "the continued need for enforcement of existing standards" regarding PM 2.5.¹⁰

7 Older adults also are particularly susceptible to PM2.5 because of their weaker lungs and hearts.
8 For example, studies have suggested that serious health effects, such as premature mortality, are greater
9 among older groups of individuals.¹¹ Older adults also are more likely than younger ones to have
10 preexisting respiratory and/or cardiovascular conditions that become aggravated with exposure to
11 PM2.5. *Id.* The costs of PM2.5 pollution are staggering. The serious health impacts and accompanying
12 costs resulting from PM2.5 pollution will burden not only individuals, but also the state through
13 expenditure of public and employer health care dollars, lost productivity, and strains on the education
14 system from missed school days. The benefits from the control of PM2.5, however, are significant. For
15 example, a cost-benefit study completed by the U.S. EPA for the agency's recent revision of the 24-hour
16 PM2.5 standard showed from \$9 billion to \$76 billion in health and visibility benefits, compared to a
17 cost of \$5.4 billion for achieving the standard.¹² In all, Hawaii will benefit greatly from protecting its
18 citizens through stringent control of PM2.5.

19
20
21
22

⁹ See Statement of Katherine M. Shea, MD, MPH, FAAP, On Behalf of the American Academy of Pediatrics,
23 Before the Clean Air Scientific Advisory Committee to the U.S. Environmental Protection Agency, Regarding
24 National Ambient Air Quality Standards for Particulate Matter;

<http://www.cleanairstandards.org/wp-content/uploads/2005/04/aap-testimony-4705-3.pdf>.

25 ¹⁰ See, e.g., T. Lewis, *et al.*, Air Pollution-Associated Changes in Lung Function among Asthmatic Children in
26 Detroit, *Environ. Health Perspect.*, pp. 113:1068-1075, 2005;
<http://www.ehponline.org/members/2005/7533/7533.pdf>.

27 ¹¹ See, e.g., 71 Fed. Reg., p. 2637.

28 ¹² See National Ambient Air Quality Standards for Particulate Matter; Proposed Rule, 71 Fed. Reg. 2620, 2627,
January 17, 2006.

1 b. The Revised Draft Permit Does Not Adequately Address PM2.5

2
3 The Revised Draft Permit is flawed because it fails to directly regulate or evaluate emissions of
4 PM2.5 from the Facility. Instead, 11 years after PM2.5 was designated as a criteria air pollutant that
5 must be regulated under the Clean Air Act, the Department essentially ignores PM2.5 emissions.

6 First, the Department failed to quantify the amount of PM2.5 that would be emitted at the source.
7 In the Draft Permit itself, PM2.5 is not mentioned at all. The Department's only mention of PM 2.5 is in
8 the Permit Review Summary which proposes a BACT emission limit for PM2.5 of 0.025 lb/MMBtu to
9 be achieved with an electrostatic precipitator assuming PM2.5 is equivalent to PM10. Permit Review
10 Summary (3/21/11), pp. 4, 7, and 8. This purported "PM2.5 emission limit" is rendered meaningless by
11 the Draft Permit's failure to specify those limits and require any PM2.5 monitoring. Moreover, there is
12 no analysis of whether the controls required for PM10 also minimize PM2.5 (in filterable and/or
13 condensable form). As a result, it is unclear whether the purported PM2.5 emission limits are
14 achievable, and they are certainly not enforceable. The Department could potentially resolve this issue
15 by including a permit provision that requires all PM10 to be considered equal to PM2.5 for monitoring,
16 compliance, and enforcement purposes. However, because PM2.5 has different (and more severe)
17 impacts on public health and requires different controls than PM10, it merits independent analysis.
18 These distinctions are explained in more detail below.

19 c. The Department May Not Use PM10 as a Surrogate for PM2.5

20 The use of PM10 as a surrogate for PM2.5 is unacceptable as a matter of law and is not
21 technically justified. PM2.5 and PM 10 are different pollutants that require different control measures.
22 As the EPA has recognized, the "characteristics, sources, and potential health effects of larger or
23 'coarse' fraction particles (from 2.5 to 10 microns in diameter) and smaller or 'fine' particles (smaller
24 than 2.5 microns) in diameter) are very different."¹³ The agency has also found that "in contrast to
25 PM10, EPA anticipates that achieving the NAAQS for PM2.5 will generally require States to evaluate
26 different sources for controls, to consider controls of one or more precursors in addition to direct PM

27
28 ¹³ U.S. Environmental Protection Agency, National Air Quality Standards for Fine Particles: Guidance for Designating Areas: Fact Sheet, July 17, 1997; http://www.epa.gov/ttn/caaa/t1/fact_sheets/pmfact.pdf.

1 emissions, and to adopt different control strategies.”¹⁴ This difference is obvious in the nonattainment
2 listings themselves as many counties are in attainment for PM10 but out of attainment for PM2.5. Even
3 where PM10 is properly controlled and compliance with the PM10 NAAQS has been sufficiently
4 demonstrated, substantial harms are likely to occur from remaining PM2.5 pollution. Therefore, it is
5 unlawful and unreasonable to pretend that PM10 is PM2.5.

7 **13. CAB Failed to Adequately Respond to Significant Public Comments**

8
9 “It is a general principle of administrative law that an inherent component of any meaningful
10 notice and opportunity for comment is a response by the regulatory authority to significant comments.”
11 In the Matter of Wisconsin Public Service Corporation’s JP Pulliam Power Plant, Petition V-2009-01, p.
12 5 (June 28, 2010) (citing *Home Box Office v. FCC*, 567 F.2d 9, 35 (D.C. Cir. 1977) (“the opportunity to
13 comment is meaningless unless the agency responds to significant points raised by the public.”)). In her
14 comments on the Revised Draft Permit, Dr. Pless identified four significant issues raised in her initial
15 comments that CAB failed to provide a direct response to. Exhibit 4, p. 8. These significant issues,
16 which are incorporated above in this Petition, include:

- 17 - Failure to include emission limits and monitoring for biomass handling, chipping, and
18 storage operation as a source of particulate matter emissions (2010 Pless Comments, Section
19 II.B);
- 20 - Failure to include emission limits and monitoring for trona or lime and ash handling as a
21 source of particulate matter emissions (2010 Pless Comments, Section IT. B);
- 22 - Failure to include emission limits and monitoring for sulfuric acid mist emissions (2010 Pless
23 Comments, Section III); and
- 24 - Failure to include emission limits and monitoring for particulate matter with an aerodynamic
25 diameter smaller than or equal to 2.5 micrometers (“PM2.5”)(2010 Pless Comments, Section
26 IV.).

26 Where, as here, the comments indicate that the Title V Permit failed to incorporate certain
27 applicable requirements, those comments are significant and CAB had an obligation to adequately

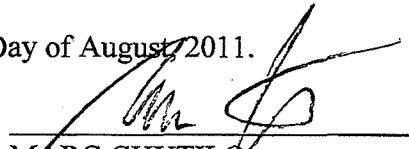
28 ¹⁴ Clean Air Fine Particle Implementation Final Rule, 72 Fed. Reg. 20586, 20589 (April 25, 2007).

1 respond. JP Pulliam, *supra*, p. 7. Given CAB's practice of iterative Permit revisions to address some
2 public concerns, the public dies a death of a thousand cuts in trying to understand what comments are
3 addressed in revisions and which are not. Since the technical nature of the proceedings mandate
4 involvement of expensive experts, CAB effectively wears out the opposition through their practice of
5 serial, incremental CSP revisions without a statement of basis or response to comments to explain the
6 issues addressed, and those ignored, during the series of permit revisions that accompany CAB's review
7 of controversial CSP. See, for example, the Tradewinds CSP (Covered Source Permit No. 0625-01-C:
8 Tradewinds Forest Products) (which experienced the exact same pattern of iterative Permit revisions
9 without CAB explanation).

11 CONCLUSION

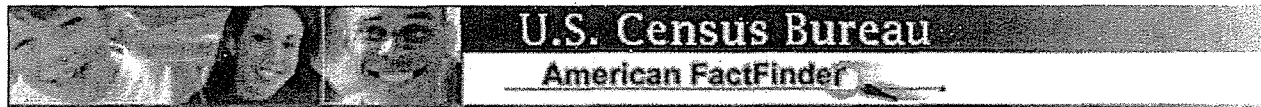
12 In sum, the Permit is not in compliance with the Clean Air Act and applicable requirements in
13 State and Federal regulations. When all facility emissions are properly taken into consideration and
14 calculated using representative emissions factors, the Hu Honua facility constitutes a Major Source of
15 both CO and HAPs. The Revised Draft Permit lacks practically and federally enforceable conditions
16 establishing emissions limitations and testing necessary to assure compliance with applicable
17 requirements for a synthetic minor source. The State's process has thwarted public participation through
18 a series of "hide the ball" revisions without explanation. Accordingly the Title V Permit is defective in
19 failing to include Major Source requirements including PSD review and case-by-case MACT
20 determinations. Due to this and other deficiencies, the Administrator must object to the Title V permit
21 for the Hu Honua Bioenergy Facility in Pepe'ekeo, Hawai'i.

22
23 Respectfully submitted on this 26th Day of August 2011.

24
25 
26 _____
27 MARC CHYTILO
28 ANA CITRIN
LAW OFFICE OF MARC CHYTILO
Attorneys for Petitioner
PRESERVE PEPE'EKEO HEALTH & ENVIRONMENT

EXHIBITS

- 1
- 2
- 3 Exhibit 1: U.S. Census Bureau, American FactFinder, 2005-2009 Data for Pepeekeo Hawaii
- 4 Exhibit 2: U.S. Geological Survey Fact Sheet 169-97, Online Version 1.1, revised June 2000
- 5 <http://pubs.usgs.gov/fs/fs169-97/>, attached as Exhibit 1
- 6 Exhibit 3: Pless Environmental, Comments on Draft Covered Source Permit for Hu Honua
- 7 Bioenergy, LLC (10/8/10)
- 8 Exhibit 4: Pless Environmental, Comments on Revised Draft Covered Source Permit for Hu Honua
- 9 Bioenergy, LLC (3/21/11)
- 10 Exhibit 5: EPA Region IX Comment Letter on Proposed Covered Source Permit for Hu Honua
- 11 Bioenergy (June 30, 2011)
- 12 Exhibit 6: Minnesota Pollution Control Agency, *Emission Factors for Priority Biofuels in*
- 13 *Minnesota* (June 30, 2007) (selected pages)
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FACT SHEET

Pepeekeo CDP, Hawaii

2005-2009 American Community Survey 5-Year Estimates - what's this?

Data Profile Highlights:

Note: The following links are to data from the American Community Survey and the Population Estimates Program.

NOTE: Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities and towns and estimates of housing units for states and counties.

Social Characteristics - show more >>	Estimate	Percent	U.S.	Margin of Error
Average household size	2.49	(X)	2.60	+/-0.29
Average family size	3.06	(X)	3.19	+/-0.30
Population 25 years and over	1,191			+/-165
High school graduate or higher	(X)	83.4	84.6%	(X)
Bachelor's degree or higher	(X)	18.3	27.5%	(X)
Civilian veterans (civilian population 18 years and over)	170	12.5	10.1%	+/-52
With a Disability	(X)	(X)	(X)	(X)
Foreign born	259	14.8	12.4%	+/-115
Male, Now married, except separated (population 15 years and over)	291	40.4	52.3%	+/-70
Female, Now married, except separated (population 15 years and over)	277	39.2	48.4%	+/-65
Speak a language other than English at home (population 5 years and over)	384	23.6	19.6%	+/-116
Household population	1,747			+/-272
Group quarters population	(X)	(X)	(X)	(X)

Economic Characteristics - show more >>	Estimate	Percent	U.S.	Margin of Error
In labor force (population 16 years and over)	761	54.4	65.0%	+/-160
Mean travel time to work in minutes (workers 16 years and over)	28.1	(X)	25.2	+/-4.4
Median household income (in 2009 inflation-adjusted dollars)	26,031	(X)	51,425	+/-4,511
Median family income (in 2009 inflation-adjusted dollars)	29,167	(X)	62,363	+/-10,224
Per capita income (in 2009 inflation-adjusted dollars)	16,530	(X)	27,041	+/-2,628
Families below poverty level	(X)	27.5	9.9%	+/-8.7
Individuals below poverty level	(X)	32.3	13.5%	+/-8.2

Housing Characteristics - show more >>	Estimate	Percent	U.S.	Margin of Error
Total housing units	798			+/-88
Occupied housing units	703	88.1	88.2%	+/-90
Owner-occupied housing units	440	62.6	66.9%	+/-69
Renter-occupied housing units	263	37.4	33.1%	+/-71
Vacant housing units	95	11.9	11.8%	+/-42
Owner-occupied homes	440			+/-69
Median value (dollars)	274,800	(X)	185,400	+/-16,622



Median of selected monthly owner costs				
With a mortgage (dollars)	1,100	(X)	1,486	+/-105
Not mortgaged (dollars)	248	(X)	419	+/-48

ACS Demographic Estimates - show more >>	Estimate	Percent	U.S.	Margin of Error
Total population	1,747			+/-272
Male	899	51.5	49.3%	+/-160
Female	848	48.5	50.7%	+/-153
Median age (years)	42.9	(X)	36.5	+/-7.1
Under 5 years	123	7.0	6.9%	+/-61
18 years and over	1,357	77.7	75.4%	+/-196
65 years and over	349	20.0	12.6%	+/-77
One race	1,375	78.7	97.8%	+/-218
White	244	14.0	74.5%	+/-97
Black or African American	19	1.1	12.4%	+/-19
American Indian and Alaska Native	0	0.0	0.8%	+/-119
Asian	802	45.9	4.4%	+/-161
Native Hawaiian and Other Pacific Islander	310	17.7	0.1%	+/-126
Some other race	0	0.0	5.6%	+/-119
Two or more races	372	21.3	2.2%	+/-144
Hispanic or Latino (of any race)	153	8.8	15.1%	+/-86

Source: U.S. Census Bureau, 2005-2009 American Community Survey


Explanation of Symbols:

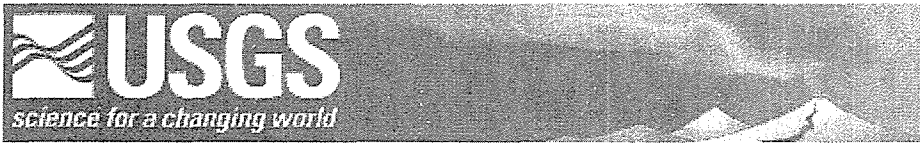
**** - The median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.

***** - The estimate is controlled. A statistical test for sampling variability is not appropriate.

'N' - Data for this geographic area cannot be displayed because the number of sample cases is too small.

'(X)' - The value is not applicable or not available.

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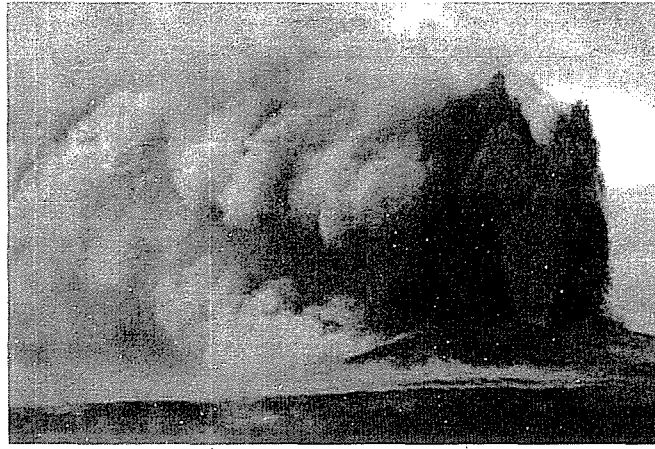
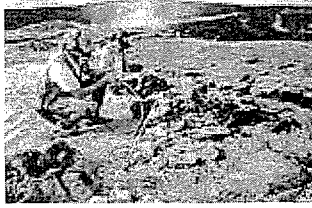
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Volcanic Air Pollution—A Hazard in Hawai`i

Noxious sulfur dioxide gas and other pollutants emitted from Kilauea Volcano on the Island of Hawai`i react with oxygen and atmospheric moisture to produce volcanic smog (vog) and acid rain. Vog poses a health hazard by aggravating preexisting respiratory ailments, and acid rain damages crops and can leach lead into household water supplies. The U.S. Geological Survey's Hawaiian Volcano Observatory is closely monitoring gas emissions from Kilauea and working with health professionals and local officials to better understand volcanic air pollution and to enhance public awareness of this hazard.

On the morning of February 8, 2000, Harry Kim, Director of Hawai`i County Civil Defense, asked radio stations on the Island of Hawai`i to broadcast a special message concerning the thick, acrid haze that had covered the southeastern part of the island for several days. Listeners were told that outdoor activities in parks might be canceled in affected areas and that schools might need to keep children indoors. People were also warned to be aware of respiratory problems, as these conditions could deteriorate more rapidly in areas of heavier haze. This choking haze was not caused by a forest fire or industrial pollution but by light winds blowing gas emissions from Kilauea Volcano into the area.

EXHIBIT 2



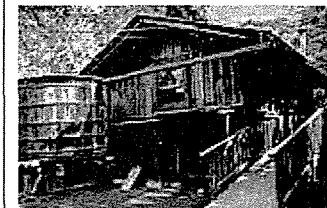
Kilauea Volcano on the Island of Hawai`i emits about 2,000 tons of sulfur dioxide (SO_2) gas each day during periods of sustained eruption. Air pollution caused by sulfur dioxide and other volcanic gases became a frequent problem on the island in mid-1986, when the volcano's ongoing eruption, which began in 1983, changed from episodes of spectacular lava fountaining (shown here) to a nearly constant but quiet outflow of lava and gas. Left: U.S. Geological Survey scientists sampling volcanic gases from Kilauea.

Best known for its spectacular lava fountains and flows, Kilauea also emits about 2,000 tons of irritating sulfur dioxide gas (SO_2) gas each day during periods of sustained eruption. Deep inside the volcano, where pressure is high, the SO_2 is dissolved in molten rock (magma). When the magma rises toward the surface, where pressure is lower, the gas bubbles out and escapes.

Air pollution caused by SO_2 and other gases emitted from Kilauea became a frequent problem on the Island of Hawai`i in 1986. Until that time, the volcano's ongoing eruption, which began in 1983, consisted of short, spectacular episodes of lava fountaining about once every 3 weeks. Since mid-1986, the flow of magma to the surface has been more steady, producing a nearly constant but quiet outflow of lava and gas. People in areas downwind of the volcano began reporting a wide range of problems, including reduced visibility, health complaints, and damage to crops. The word "vog," an abbreviation for volcanic smog, was coined to identify this form of air pollution, which unfortunately has become a part of everyday life for people in Hawai`i.

Vog is created when SO_2 and other volcanic gases combine and interact chemically in the atmosphere with oxygen, moisture, dust, and sunlight over periods of minutes to days. Vog is a visible haze consisting of gas plus a suspended mixture of tiny liquid and solid particles, called aerosol. The aerosol in vog is composed primarily of sulfuric acid and other sulfate compounds. Small amounts of several toxic metals, including selenium, mercury, arsenic, and iridium, have also been found in the volcanic air pollution coming from Kilauea. Far away from the volcano, such as along the Kona coast on the Island of Hawaii's west side, aerosol particles dominate vog, but near Kilauea SO_2 gas is a major component of vog.

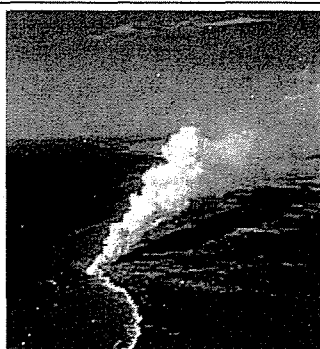
Sulfur dioxide gas and other pollutants emitted from Kilauea Volcano interact chemically with atmospheric moisture, oxygen, dust, and sunlight to produce volcanic smog (vog) and acid rain. Vog poses a health hazard by aggravating preexisting respiratory ailments, reduces driving visibility (top), and damages crops (lower left), and acid rain can leach lead from rainwater catchment systems (lower right) into household water supplies.



SO₂ is a poisonous gas that irritates skin and the tissues and mucous membranes of the eyes, nose, and throat. During even moderate physical activity, SO₂ penetrates deeply into the airway and can produce respiratory distress in some individuals. In the absence of strong winds, SO₂ emitted by Kilauea can accumulate in the air and reach levels that exceed Federal health standards. Since 1986, this has occurred more than 85 times within Hawai'i Volcanoes National Park, which includes much of Kilauea.

Because of their small size, aerosol particles such as those in vog penetrate deep into the human lung and are readily retained. Studies of air pollution in the United States and elsewhere indicate that elevated levels of acidic particles like those in vog can induce asthma attacks, especially in adolescents, and can also impede the ability of the upper respiratory tract to remove other potentially harmful particles.

Many residents and visitors on the Island of Hawai'i report physical complaints associated with vog exposure. These complaints include headaches, breathing difficulties, increased susceptibility to respiratory ailments, watery eyes, sore throat, flu-like symptoms, and a general lack of energy. In contrast to SO₂ gas concentration near Kilauea, the amount of aerosol particles in Hawaii's air does not routinely exceed Federal standards, but the unique combination of acidic particles, trace amounts of toxic metals, and SO₂ gas in vog may account for the wide variety of physical symptoms reported.

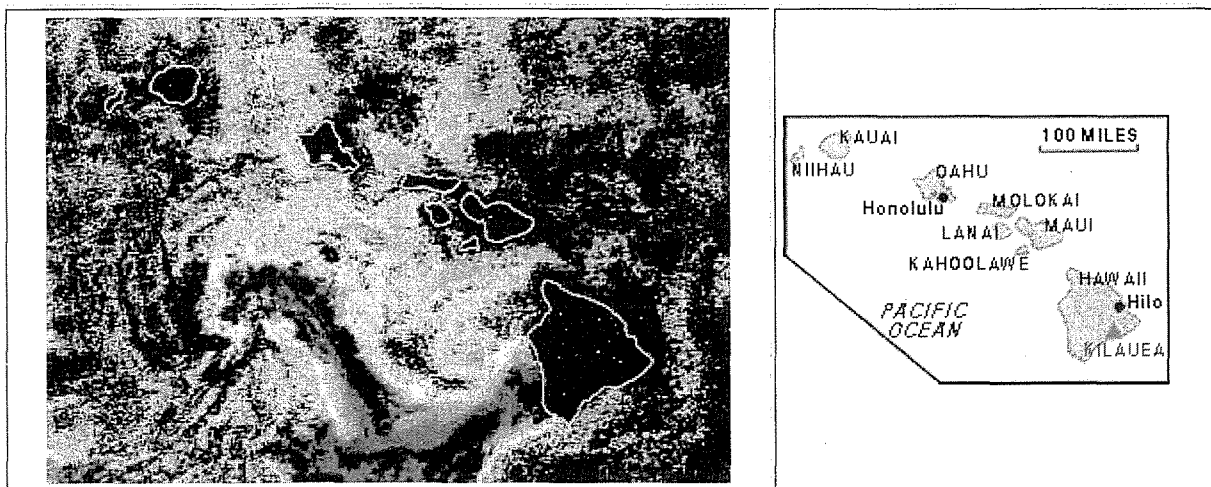


Molten lava from Kilauea Volcano frequently flows through underground lava tubes to reach the Pacific Ocean, where it vigorously reacts with cold seawater to create large steam plumes laden with hydrochloric acid. These plumes, known as "laze", are another form of volcanic air pollution and pose a local environmental hazard along the Island of Hawaii's southeast coast, especially to people who visit these ocean-entry sites.

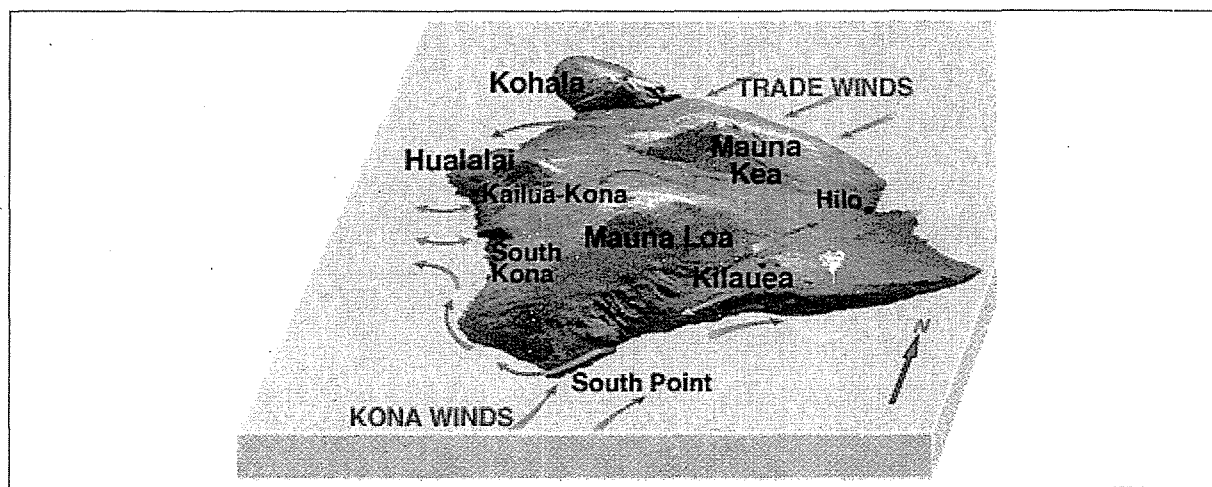
Like smog, the presence of vog reduces visibility. Moisture in the air causes vog particles to enlarge, decreasing visibility still further. On the Island of Hawai`i, people often turn their headlights on during daylight hours when driving in vog, and vog sometimes limits visibility for air traffic.

The tiny sulfuric acid droplets in vog have the corrosive properties of dilute battery acid. When atmospheric moisture is abundant, these droplets combine with it and fall as acid rain, damaging plants and accelerating the rusting of metal objects such as cars, industrial and farm equipment, and building components. However, in drier conditions, such as those that prevail on Hawaii's Kona coast, the acid aerosols in vog may actually impede the formation of raindrops, resulting in decreased summer rainfall for crops and drinking water. Vog can also mix directly with moisture on the leaves of plants and in less than a day cause severe chemical burns. Farmers on the Island of Hawai`i have suffered losses even to crops in greenhouses, because vog can enter through the air vents.

Many homes on the Island of Hawai`i rely on rooftop rainwater-catchment systems to provide their drinking water. In 1988, the drinking water of nearly 40% of homes using such systems in the Kona Districts of the island was found to be contaminated with lead leached by acid rain from roofing and plumbing materials, such as nails, paint, solder, and metal flashings. Tests confirmed that the blood of some residents of these homes had elevated lead levels, leading to a major island-wide effort to remove lead-bearing materials from rainwater-catchment systems.



During prevailing trade wind conditions, the nearly constant stream of volcanic smog (vog) produced by Kilauea Volcano on the Island of Hawai`i is blown to the southwest and west (satellite image shows increasing amounts of vog aerosol particles in yellow, orange, and red, respectively); traces have been detected as far away as Johnston Island, 1,000 miles to the southwest. On the Island of Hawai`i, the trade winds (blue arrows) blow the vog from its main source on the volcano (white plume) to the southwest, where wind patterns send it up the island's Kona coast. Here, it becomes trapped by daytime (onshore) and nighttime (offshore) sea breezes (double-headed arrows). In contrast, when light "kona" winds (red arrows) blow, much of the vog is concentrated on the eastern side of the island, but some can even reach Oahu, more than 200 miles to the northwest. (The names of the five volcanoes that make up the Island of Hawai`i are shown in yellow. National Oceanic and Atmospheric Administration (NOAA) satellite image processed by John Porter and collected by Pierre Flament, University of Hawai`i.)



Much is still unknown about vog's composition and its effects on health. To better understand and evaluate the hazards posed by vog and other forms of volcanic air pollution, scientists from the U.S. Geological Survey's (USGS) Hawaiian Volcano Observatory (HVO) at the summit of Kilauea closely monitor the amount and composition of gas emissions from the volcano's ongoing eruption. In addition, HVO collects and integrates information on volcanic air pollution from other sources and advises scientific and health-care organizations studying its effects. HVO scientists are also working closely with government officials and health professionals in Hawai`i to inform residents and visitors about this hazard.

The studies of volcanic air pollution carried out at HVO by scientists with the USGS Volcano Hazards Programs complement the observatory's other studies of Hawaii's volcanoes. The work of HVO is part of the ongoing USGS effort to help protect people's lives and property from volcano hazards in all of the volcanic regions of the United States, including Hawai`i, Alaska, Wyoming, California, and the Pacific Northwest.

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Also, visit the [Hawaiian Volcano Observatory](http://www.hawaii.gov/doh/hvo/) on the Web.

COOPERATING ORGANIZATIONS
 American Lung Association of Hawai`i

Hawai`i County Civil Defense
Hawai`i State Department of Health
National Centers for Disease Control and Prevention
National Oceanic and Atmospheric Administration
National Park Service
University of Hawaii, Center for the Study of Active Volcanoes
University of Hawai`i, School of Ocean and Earth Science and Technology

Related Fact Sheets

[Living On Active Volcanoes--The Island of Hawai`i](#) (USGS Fact Sheet 074-97)

[Explosive Eruptions at Kilauea Volcano, Hawai`i?](#) (USGS Fact Sheet 132-98)

[What Are Volcano Hazards?](#) (USGS Fact Sheet 002-97)

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U.S. GEOLOGICAL SURVEY--REDUCING THE RISK FROM VOLCANO HAZARDS

Learn more about volcanoes and the hazards they pose at the [USGS Volcano Hazards Program website](#)

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