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## **AB 2588 Air Toxics "Hot Spots" Annual Report**

June 7, 2004

### **PURPOSE**

To disseminate information regarding the status of AB 2588 Air Toxics "Hot Spots" Program in the Northern Sierra Air Quality Management District (District), which includes Nevada, Plumas, and Sierra Counties.

### **BACKGROUND**

Assembly Bill 2588 (1987) was enacted in response to public concern about the release of toxic air contaminants into the atmosphere, in accordance with the California Health and Safety Code (HSC) Section 44300, et seq. The "Findings and Declarations" included in HSC Section 44301 states that 75% of the U.S. population resides in proximity to at least one source of air toxic emissions. Most air toxics are emitted due to the combustion of fuels and operations associated with manufacturing processes that use chemicals. Many air toxics are of interest because they are cancer causing. In addition, some of the air toxics can have non-cancer effects as related to the cardiovascular, central nervous, immune, gastrointestinal, respiratory, and reproductive systems.

Studies cited in the "Findings" of HSC Section 44301 have shown that routine releases of significant levels of substances are occurring and are proven to be, or are potentially hazardous to public health. These releases can create localized concentrations of air toxics, or "hot spots", where the risks of adverse health effects contribute to cumulative health risks from emissions from other sources in the area. These findings also conclude that sources of toxic air contaminants include facilities that are already regulated by air quality management districts, as well as relatively small, exempt sources, or sources that may contribute cumulatively to public health risks.

Due to the lack of information in California about the emissions of air toxics, the "Hot Spots" program was devised to provide information about the types, quantities, and risks associated with these types of emissions. The Air Toxics "Hot Spots" Information and Assessment Act is also called AB 2588.

### **THE PROCESS**

Affected facilities must submit a proposed emissions inventory plan to the District that identifies the methods to be used for assessing the emissions of air toxics and reporting those emissions to the district. Once the District approves the plan, the facility must implement the plan and submit an emission inventory report. The District must review the data contained in the report and prioritize facilities for the purpose of health risk assessment. The District categorizes facilities as high, intermediate, or low priority.

There are exceptions to these plan and report requirements – *industry-wide* facilities. Industrywide facilities are classes of facilities, the majority of which are small businesses,

where compliance with the plan and report requirements would impose a severe economic hardship on the majority of the facilities in the class and emissions from individual facilities in each class can easily and generically be characterized and calculated. HSC Section 44323 allows air districts to prepare an industrywide emissions inventory and health risk assessment for industrywide facilities.

The process by which the District identifies priority facilities for risk assessment involves consideration of potency, toxicity, quantity of emissions, proximity to sensitive receptors such as hospitals, day care centers, work sites, and residences, and any other factors the District determines may indicate a potentially significant risk to the public health. The HSC requires that facilities designated as high priority, per the prioritization score, to submit a health risk assessment to the District and the Office of Environmental Health Hazard Assessment (OEHHA).

Facility operators that have been identified as having a significant health risk must notify all exposed persons of the health risk assessment results. The notification is intended to alert and inform the public in a way that does not cause excessive alarm.

Originally, this was primarily a data gathering and information reporting program. There was no emphasis on controlling toxic air emissions, however, measures could be taken to voluntarily reduce public health risk. Across California, facility operators have voluntarily reduced emissions of air toxics as a result of this program. However, then Senate Bill 1731 was enacted in 1992 (effective January 1, 1993), which requires facility operators that present a significant risk to a community to reduce public health risk to below the significant level within five years.

Three government agencies are involved in the program. The California Air Resources Board (ARB), the local air district in each local jurisdiction, and the OEHHA.

ARB is mainly involved with the development of the program and assisting air districts in the implementation of the program. They develop source test methods for air toxics, manage the statewide air toxics data system, and review and update (with the assistance of the OEHHA) any additions to the list of air toxics.

The District is involved with the sources of air toxics within its jurisdiction. The District is responsible for the review of the air toxics emissions inventory plans, emissions reports, risk prioritization and ranking of the facilities, review of screening risk assessments that are required, procedures involved in notifying the public of risks of air toxics, review and approval of risk reduction audits and plans, and reports (such as this annual report to educate the public). In addition, local air districts work together as a committee of the California Air Pollution Control Officers Association.

OEHHA is mainly involved in the development of a health effects data base of air toxics and the development of health assessment risk factors for each air toxic chemical. Also, the OEHHA is responsible for reviewing and commenting to the District on risk assessments, unless a district is certified for doing their own review of screening risk assessments.

For more details on the categories, exemptions, and updated reporting requirements a copy of the *EMISSION INVENTORY CRITERIA AND GUIDELINES (5/15/97)*, is available from the California Air Resources Board. Extensive information about the Air Toxics program can be

obtained by visiting the CARB Air Toxics web site at [www.arb.ca.gov/toxics/toxics.htm](http://www.arb.ca.gov/toxics/toxics.htm). Once there, select the link titled AB 2588 Air Toxics "Hot Spot" Program, to get specific information.

## **TERMINOLOGY**

**Prioritization** is the process that the District uses to identify facilities required under the Air Toxics Hot Spots program to prepare refined health risk assessments. The prioritization score provides an indication of the level of concern that air toxic emissions might have with respect to localized impacts. High priority facilities might have a significant impact so they are required to provide a detailed analysis of the effects their air toxic emissions have on the surrounding community. This analysis, called a health risk assessment, uses mathematical models to determine the significance of air toxic emissions from these facilities.

**Risk assessment**, as defined by the National Academy of Sciences, is the scientific characterization of the potential adverse effects of environmental hazards on human health. Risk assessments do not predict actual health effects, but only anticipate the increased possibility of adverse health effects such as cancer or respiratory disease. Risk assessments are meant to be conservative to avoid underestimating the risk. As such, assumptions about exposure and toxicity of the pollutants are made that err on the side of public health protection. There is a great deal of uncertainty associated with the process of risk assessment. The uncertainty arises from lack of data in many areas necessitating the use of assumptions. Sources of uncertainty which may either overestimate or underestimate risk include: extrapolation of toxicity data in animals to humans, uncertainty in the air dispersion models, and in the estimation of emissions. The estimates of cancer potency in humans contain many sources of uncertainty. Factors including metabolism, target site sensitivity, diet, immunological responses, and genetics may influence the process of carcinogenicity. The human population is much more diverse both genetically and culturally (e.g. lifestyle, diet) than bred experimental animals. Other uncertainties arise in the assumptions underlying the dose-response model used, and in extrapolating from large experimental doses, where other toxic effects may compromise the assessment of carcinogenic potential, to much smaller environmental doses. Risk assessment is best used as a ruler to compare one source with another. Risk assessments can generally be classified into two groups: 1) screening and 2) refined.

A screening risk assessment is normally characterized as being a worst case analysis since impacts are determined using meteorology which cause the highest ground level impacts. It is possible that these meteorological parameters may not be appropriate for a specific area and normally only represent very short term impacts such as one hour. U.S. EPA factors have been developed to translate these short term impacts into longer term impacts such as an annual average. This may be the only practical method for many assessments when actual meteorological data is not available for an area in which the emission impacts are needed. Screening computer models provide these worst case impacts once emissions parameters from a source are known.

A refined risk assessment utilizes actual site conditions (e.g. meteorology, topography, distances, etc.) for input to a refined computer model for calculating emissions impacts from a source of air toxic emissions. The resulting emission impacts and risks from this type of analysis are expected to be closer to reality than a screening assessment.

**Maximum Exposed Individual (MEI)** is the number of cancer cases per million people that would be expected where people live and/or work and are exposed to calculated concentrations of air toxics, 24 hours per day, every day, for a period of 70 years.

**Hazard Index (HI)** is the cumulative non-cancer health effects on various body systems or organs as determined over a yearly basis. The HI for each toxicant is the ratio of the estimated yearly average concentration of a toxicant divided by the reference exposure level for the toxicant. The total HI is the summation of all of the HIs that affect a system or organ.

## **STATUS REPORT**

This report updates progress made. Please refer to the 2000 Report's section titled Status Report for information on prior progress. Significant reorganization has taken place within the District in regards to this program. Two Air Pollution Control Specialists share program responsibilities. Significant progress was made during 2001 to bring the District's toxic program into full compliance with all State regulations and guidelines. Any errors or omissions are unintentional. During 2003 the District's program was in a maintenance mode.

### **Plan and Report:**

The District has reviewed emissions inventory reports and prioritization scores (PS) submitted by applicable facilities to confirm and approve the results.

**Collins Pine Company:** In December of 2000 this facility conducted a source test with special emphasis on cadmium. Cadmium was the toxic responsible for Collins Pine's PS > 10. Upon evaluation of the new source test data, Collins Pine's PS was re-adjusted to 4.5. This facility is now ranked as an "Intermediate-Update" facility.

**Sierra Pacific Industries-Quincy:** The HRA for this facility has been submitted to and reviewed by the District. The cancer risk for this facility is now considered to be less than 3 in a million. This facility is in the "Intermediate-Update" category.

**Furniture by Thurston:** The current PS is less than 10, therefore this facility is ranked as an "Intermediate-Update" facility. This facility's cancer score is below 1, but it has a score of 1.8 for Acute Exposure to Non-Cancer compounds, specifically, at this facility, the offending compound is isopropyl alcohol. There is no threat to any adjacent residential areas and only a very small risk to adjacent facilities. This facility is re-evaluated by the District on an annual basis as part of the permit renewal process.

**Serra Corporation:** 2002 was a year of big change for Serra Corp's toxic score. The current PS is now less than 1, therefore this facility will be removed from the program. All of Serra Corporation's scores are less than 1. This big change was brought about by the discontinued use of Hexavalent Chromium containing compounds at this facility. There is no threat to any adjacent residential areas or schools and only a very small risk to an adjacent workplace. This facility is re-evaluated by the District on an annual basis as part of the permit renewal process.

**Sierra Pacific Industries-Loyalton:** This facility submitted a Health Risk Assessment (HRA) in 2000. The HRA was reviewed and approved by OEHHA and the District. This facility currently now has a PS of 0.9, therefore we have placed this facility in a low priority status. This facility will be reviewed on an annual basis to assess any potential changes in the PS. In December

of 2003 SPI Loyalton performed a special toxic source test as part of the District's investigation into a series of citizen complaints. Their final prioritization score based on the most recent source test results remained below 10. Therefore, the facility is now a quadrennial update facility. Please see **Attachment A** for the results and findings of the District's investigation.

Sierra Aggregates: The current PS is less than 10, therefore this facility is ranked as an "Intermediate-Update" facility. Sierra Aggregates' cancer score is low at 1.16, but it has a score of 5.1 for Chronic Exposure to Non-Cancer compounds, specifically, at this facility, the offending compounds are nickel and beryllium. There is only a very small risk to any adjacent residential areas and no risk to any adjacent workplaces. This facility is re-evaluated by the District on an annual basis as part of the permit renewal process.

Plumas County Road Department (asphalt batch plant): PS is 0.34, therefore exempt.

Hansen Bros. Enterprises-Greenhorn: PS is 0.02, therefore exempt.

Teichert Aggregates-Truckee/Martis Valley: PS is 0.2, therefore exempt.

CalMat / Industrial Asphalt - Grass Valley - PS is 0.01, therefore exempt.

Tahoe-Truckee Sanitation Agency - PS is 0.5, therefore exempt.

APW Wrightline (formerly Innovative Metals): PS is 0.02, therefore exempt.

Baldwin, Old Stover Mountain: PS is 0.5, therefore exempt.

Sha-Neva Sand & Gravel: PS is 0.5, therefore exempt.

#### **Industry-wide: Autobody Shops**

Four autobody shops, Joe's Autobody, Sierra Autobody, Ingram Autobody and California Completes have been evaluated and have been removed from the program due to low risk scores. To get this exemption, these autobody shops had to eliminate the use of coatings and solvents that contained high risk air toxic compounds.

The District is in the process of identifying the remaining autobody shops, which could number as many as sixteen, and has developed spreadsheets and toxics analysis procedures that will be used to streamline the screening process. As new autobody shops go through the land use permitting process, staff uses these tools to evaluate risk and works with the facilities to reduce risks so that they don't trigger into the AB 2588 Program. When these facilities are located in high density commercial areas, they are carefully evaluated for combined impacts and their potential for creating a public nuisance. If such a potential exists, the facility is put under permit until they can demonstrate that they can operate without impacting the public health and welfare.

#### **Industry-wide: Gasoline Dispensing Facilities**

Notification letters were sent out to all gasoline dispensing facilities (GDFs) detailing their final HRA scores. These scores represent the cancer risk per million over a 70 year period. For example, a score of 15 means that the closest receptor has a 15 in a million chance of developing a benzene related cancer if they live next to that gas station for 70 years. Those

facilities with an HRA score greater than 10 have been notified by the District that they are required to send public notification letters to all potential receptors in the immediate surrounding area. We expect that process to have been completed within the first three months of 2002.

During the past year the District performed a comprehensive re-evaluation of all GDFs within the District's 3 counties. Because of the relatively low scores, the prevalence of vapor recovery and the extraordinary amount of labor that is required to evaluate all of the District's GDFs, the District will therefore re-evaluate all GDFs on a quadrennial basis. Facility rankings are listed below. Prioritization scores were determined from the information submitted by each GDF, these scores represent calendar year 2001:

Risk less than 1, therefore exempt (removed from the program):

Facility Name	Location	HRA Score
Clear Creek Feed & Store	18138 McCourtney Road	0.01
Tahoe Truckee Sanitation Agency	13720 Joerger Drive	0.02
NID, Scotts Flat Campground	23333 Scotts Flat Road	0.04
TahoeTruckee Unified School District	11839 Donner Pass Road	0.06
CalTrans Kingvale	51121 Donner Pass Road	0.09
Foley's Auto Service	60 Main Street	0.10
Tahoe Donner Association	14514 Northwoods Boulevard	0.12
Bassett's Station	100 Gold Lake Road	0.14
P G & E Service Center	788 Taylorville Rd.	0.15
Sierra City Gas/Herrington's	Highway 49	0.15
Bucks Lake Lodge	16525 Bucks Lake Road	0.23
United Parcel Service	12025 Charles Drive	0.26
Wiggin's Trading Post	94139 Highway 70	0.28
Lassen View Resort, Inc.	7457 Hwy 147	0.34
Big Cove Resort	442 Peninsula Drive	0.41
Little Norway Resort	432 Peninsula Drive	0.42
Knotty Pine Resort/marina	430 Peninsula Drive	0.50
Pacific Pride Cardlock	1382 East Main St.	0.65
Sierra SuperStop Cardlock	73880 Hwy 70	0.71
Sierra SuperStop #7	7640 East Shore Drive	0.75
Relay Station	1355 E. Main Street	0.80
Art's Cedar Ridge Gas & Auto	12685 Colfax Highway	0.83
Corner Store	189 Main Street	0.83
Skippers Cove Marina	13104 Marina	0.92
White's Sierra Chevron Station	508 Main St.	0.95
Pacific Pride Cardlock	696 Highway 36	0.97
M&M Gas & MiniMart	303 Main Street	0.97

Risk between 1 and 10, therefore intermediate-update facilities:

Facility Name	Location	HRA Score
Fuel Star #1	98 E. Main Street	1.12
Nellz Towne Pump	114 Crescent Street	1.15
Plumas Pines Resort	3000 Almanor Dr. West	1.28
Toms Sierra #49, Cardlock	335 Railroad Avenue	1.38

United Trails	10068 Hirschdale	1.55
Buzz Mart	314 Main Street	1.60
Almanor Pines Market	345 Peninsula Dr.	1.68
Alta Sierra Station	10032 Alta Sierra Drive	1.70
Warner's Chevron	151 Crescent Street	1.91
Robinson Enterprises, Inc.	293 Lower Grass Valley Road	1.91
Sierraville Srvc & Cntry Store	126 S. Lincoln Street	1.96
Allied Washoe	289 Cresent Street	2.03
Pat & Ollie's Place	11015 Donner Pass Road	2.04
Chester Chevron	225 Main Street	2.28
Express Mart #017	892 East Main St.	2.33
Penn Valley Gas & Cardlock	17562 Penn Valley Drive	2.37
Pat & Ollie's Too	10145 Donner Pass Road	2.55
K & S Market	16 East Sierra	2.65
Fuel Star #2	106 Crescent Street	2.77
Donnr Prk Unocal, Ste #256391	12373 Donner Pass Rd.	2.81
Truckee Unocal, #250541	10041 Commercial Row	2.93
Sierraville SuperStop	630 S. Lincoln	3.06
Truckee Texaco	10009 Highway 267	3.13
Best Gas/Bear River Market	10055 Wolf Road, Suite A	3.40
Greenville Gas Mart	136 Crescent Street	3.48
Sierra Superstop #19	2221 East Main Street	3.60
Mohawk Trading Company	417 Highway 89 S.	3.73
Gold Flat Gas & Cardlock	421 Hollow Way	3.86
Sierra Superstop #16	10067 Pleasant Valley Road	3.98
Donner Gate Chevron	12333 Deerfield Drive	4.17
Sierra Superstop #1	11572 Donner Pass Road	4.27
Express Mart, #007	234 S. Auburn St.	4.37
J & L Food Mart	12105 Donner Pass Road	4.64
Sierra Superstop, NSJ #3	29405 Highway 49	4.83
Penn Valley Shell	16978 Penn Valley Drive	4.91
Dollard's Sierra Market	349 E. Sierra Street	4.92
Grass Valley Chevron	107 E. McKnight Way	5.01
B & J Unocal, Site #256096	11912 Nevada City Highway	5.23
Berry-Hinckley Industries, Bulk Plant	10250 West River Street	5.40
Berry-Hinckley Industries	10161 Church Street	5.46
Truckee Shell	10278 Highway 89 S	5.50
Donner Summit 76 & Grocery	22082 Donner Pass Road	5.53
Nella #31	12008 Olympia Plaza Drive	5.73
Downieville Motors, Inc.	114 Main Street	5.98
Nella #41	12001 Nevada City Highway	6.33
Express Mart, #001	301 Sacramento Street	6.69
Toms Sierra Bulk Plant	610 2nd Street	6.80
Toms Sierra Cardlock	188 Crescent Street	7.02
Circle K Stores, Inc.#05428	133 S. Auburn Street	7.63
Main Street Chevron	451 E. Main Street	7.69
Sutherland Oil Gas & Cardlock	720 So. Auburn Street	7.71
Toms Sierra #22	428 Colfax Avenue	8.21
Graeagle Chevron	7408 Highway 89	9.37
Quik Stop Market #107	148 Hughes Road	9.54

Risk greater than 10, therefore annual-update facilities:

Facility Name	Location	HRA Score
Sierra Superstop, #11	202 E. Main Street	11.34
Arco #2077 (R & J MiniMart)	11913 Nevada City Highway	19.77

Sent out annual AB 2588 questionnaires to GDFs, reviewed responses, and updated the re-created database (including 2001 gasoline throughput).

Reviewed CAPCOA/ARB GDF Prioritization Guidelines.

### **Industry-wide - Dry Cleaners**

Reviewed the CAPCOA/ARB draft prioritization protocol. When approved in late 2000 or early 2001, the protocol will be useful in screening assessments of these facilities.

Set up a spreadsheet to streamline the risk analysis for these facilities.

Conducted preliminary risk analysis for Church Street Laundry, Ballerina Cleaners, and Cross Roads Cleaners. The District is still in the process of evaluating these three dry cleaner's. All three facilities use a very low volume of perchloroethylene, hence, we expect their risk to the community will be low.

Researched ventilation system requirements to reduce risk to an acceptable level (to less than 1 in a million).

### **Emissions Inventory - Air Toxics**

The District assisted the ARB with an air toxics emissions database merge, completed its portion of the quality assurance checks, and corrected data as necessary.

Assisted ARB identify problem areas with EPA's air toxics emissions inventory and made recommendations on needed corrections.

### **ARB Reporting**

Prepared and submitted FY 2002-2003 Facility Count and documentation to ARB.

Reviewed ARB's Facility Risk and Score Data, corrected and added missing data as necessary.

### **Miscellaneous:**

Monitored updates to the ARB list of toxic air contaminants, primarily diesel particulate. The full impact of classifying diesel particulate as a toxic air contaminant remains to be seen, but will surely require many diesel engines to come into the program. This will most likely be required in 2005.

Responded to various inquiries from industry on the program.

Prepared the annual billing, which includes District and ARB charges.

**Training:**

Program refresher elements, along with program change elements, and database training for the District Specialists.

Questions regarding this report may be directed to Joe Fish, Deputy Air Pollution Control Officer, at 530-274-9360, ext 103.

**ATTACHMENT A**

**Results of December, 2003 Source Test at SPI Loyalton Cogeneration Facility**

On December 17, 2003, Sierra Pacific Industries contracted with the Avogadro Group of Concord, CA, at the request of the Northern Sierra Air Quality Management District, to perform a series of toxic source tests on the Loyalton cogeneration facility. These tests were performed in conjunction with the facility’s annual compliance test. The tests were performed in order to assess the toxic emissions that might be associated with the facility’s use of urban wood waste in its fuel. At the time of the tests the facility burned a much higher percentage of urban wood waste than would normally be burned. It was intended that the values obtained from these tests would represent a worse case scenario for this facility.

Additionally, the Air District began monitoring Loyalton’s air for carbon monoxide in November of 2003 until the end of February 2004. The carbon monoxide monitoring will continue until May 31, 2004.

**Conclusions:**

- 1) The Air District finds that the cogeneration facility in Loyalton is operating within all permit parameters and is in full compliance with Air District regulations.
- 2) The test results, when integrated into the CAPCOA-approved facility prioritization guidelines, show that the facility presents no significant cancer, chronic or acute risk to any residents in Loyalton.
- 3) Also, the Air District finds that Loyalton’s ambient carbon monoxide levels are extremely low. No exceedance of any carbon monoxide standard was observed.

The following pollutants were measured coming from the boiler stack at the cogeneration facility and found to be within acceptable levels:

- Oxides of Nitrogen
  - Carbon Monoxide
  - Total Hydrocarbons
  - Particulate Matter
  - Total Dioxins
  - Hexavalent Chromium
  - Arsenic
  - Nickel
  - Lead
  - Copper
  - Manganese
  - Selenium
- } Criteria Pollutants
- } Regulated Pollutants
- } Cancer causing toxics
- } Acute and chronic toxics

- Zinc
- Ammonia
- Hydrogen Chloride

The following elements were also tested for but were either not detected or were below any level of significance: Beryllium, Cadmium and Mercury