8.7 PUBLIC HEALTH

8.7.1 INTRODUCTION

This section provides an assessment of the potential risks to human health that are associated with the airborne emissions of non-criteria pollutants (i.e., emissions for which neither National Ambient Air Quality Standards (NAAQS) nor California Ambient Air Quality Standards (CAAQS) have been established) from normal operations of the Kings River Conservation District Community Power Plant (KRCD CPP). This discussion focuses on the potential long-term impacts that can result from these emissions, including the potential for cumulative impacts along with measures proposed to mitigate impacts. This discussion is based on the results of a Health Risk Assessment (HRA), which provides an estimate of the potential impacts to human health from the release of (non-criteria) combustion by-products and other trace emissions.

This section is a discussion of the relevant federal, state and local public health laws, ordinances, regulations and standards (LORS) that are applicable to the proposed KRCD CPP. The applicable regulatory agencies are identified along with contact information. A list of the permits required and a schedule for obtaining these permits is also provided.

The assessment of impacts from airborne emissions of criteria pollutants is presented in Section 8.1, Air Quality. Similarly, a discussion of potential impacts due to an accidental (emergency) release of hazardous materials (i.e., aqueous ammonia) stored and used on-site in provided in Section 8.8, Hazardous Materials.

8.7.2 AFFECTED ENVIRONMENT

8.7.2.1 Project Site Area

KRCD is proposing to develop the KRCD CPP, a nominal 565-megawatt (MW) natural gas-fired combined-cycle base load power plant. The plant will be located near the City of Parlier, in Fresno County on an approximately 32-acre project site. The site is located in an area currently zoned for agriculture and currently being used predominately for agricultural purposes (vineyards). Existing structures on the project site include a vacant rural dwelling, detached garage and barn. Approximately 15 acres of a 40-acre parcel to the immediate south of the project site will be used for temporary staging and parking during construction. The KRCD CPP project site, construction staging area and associated linear facilities as described in the following sections are shown on Figure 1-3 in Chapter 1, Executive Summary.

Natural gas for the KRCD CPP will be provided by a new approximately 26-mile long 20-inch underground pipeline interconnection to the Southern California Gas Company (SCG) Line 7000 near the City of Visalia, California. The new gas pipeline will primarily follow existing roads

and be located in public right-of-way. Five construction staging areas have also been identified for use during construction of the gas pipeline, each with an approximate size of 200 feet by 200 feet.

The KRCD CPP will deliver electric power to the Pacific Gas & Electric Company (PG&E) transmission grid through a new approximately five mile-long 230 kilovolt (kV) radial transmission line between the on-site 230-kV switchyard site and PG&E's McCall Substation. The transmission line will cross both private property and public right-of-way.

The primary source of process makeup water for the KRCD CPP will be recycled water delivered by new underground pipeline interconnections to the Parlier Wastewater Treatment Plant (WWTP) and the Sanger WWTP effluent percolation and evaporation ponds located on Lincoln Avenue (i.e., Lincoln Ponds). The Parlier WWTP is located adjacent to the north of the plant site, and the interconnection will be located at the northern plant site boundary. The proposed interconnection to the Sanger Lincoln ponds is approximately five miles north and will be located primarily along existing roadways. Currently, two options are being considered for the water pipeline interconnection to Lincoln Ponds (i.e., Water Supply Pipeline Option 1 and Option 2). Up to four new shallow wells recovering percolated effluent will provide a back-up cooling water supply.

Potable water for domestic use will be supplied by a new groundwater well to be installed on the project site. There is no offsite linear associated with the potable water supply. Domestic wastewater will be discharged to the Parlier WWTP. The sewer interconnection is located on the northern boundary of the project site with no offsite linear.

8.7.2.2 Sensitive Receptors

The KRCD CPP is located in an area currently zoned for agriculture. The area is predominately used for agricultural purposes (vineyards). Surrounding land uses include agricultural land to the west and north/northwest. The parcel south of the site (15-acres of which will be utilized for construction staging) is primarily vacant with a few structures and rural dwellings. To the east of the site is the County of Fresno Southeast Regional Disposal Site, a Class III landfill that was closed in 1998. The City of Parlier WWTP is adjacent to the north.

An identification of sensitive receptors (including schools, places of worship, hospitals and emergency-response facilities, day-care, medical, and long-term health care facilities) was completed within a six-mile radius of the project site by Environmental Data Resources, Inc. (EDR). The EDR report identified 76 sensitive receptors within the six-mile radius. This report is included as Appendix 8.8-1 in Section 8.8, Hazardous Materials.

The nearest operating school is Indianola Elementary School, located at 11524 East Dinuba Avenue and approximately one-half mile from the project site. The other sensitive receptors located within approximately one to two miles of the project site are included below in Table 8.7-1. Figure 8.8-1, in Section 8.8, Hazardous Materials, identifies those receptors located within an approximate one-mile radius of the project site. The closest hospitals to the project site are the Selma District Hospital and the Selma Community Hospital, which are both located approximately two miles from the project site.

Table 8.7-1
Sensitive Receptors Located Within 1 to 2 Mile of the Project Site
KRCD CPP

Receptor Name	Address	Type	Distance from KRCD CPP project site
Fruitvale School*	South Bethel Avenue Parlier, CA	Historical Resource	0.2 miles
Indianola Elementary School	11524 East Dinuba Ave Selma, CA	School	0.47 miles
Parlier Child Care Center & Infant Center	Not reported Parlier, CA	Daycare facility	1.53 miles
Abraham Lincoln Middle School	1239 Nelson Boulevard Selma, CA	School	1.57 miles
John C. Martinez Elementary School	13174 East Parlier Avenue Parlier, CA	School	1.83 miles
Mendocino School	Part of John C. Martinez Elementary School site Parlier, CA	School	1.9 miles
La Colonia Headstart	8770 S. Mendocino Avenue Parlier, CA	Daycare facility	1.9 miles
Alice's Wonderland	Not reported Selma, CA	Daycare facility	1.93 miles

* School is non-operational and is marked by a historic building
Source: EDR 2006

8.7.3 ENVIRONMENTAL CONSEQUENCES

8.7.3.1 Significance Criteria and Methodology

Significance Criteria

In assessing the potential impacts from airborne emissions of non-criteria pollutants, specific threshold and reporting quantities, which are described in Section 8.7.4 (LORS) and elsewhere, were used as general criteria, as were the criteria for federal major sources of Hazardous Air Pollutants (HAPs), i.e., 10 tons per year of any individual HAP or 25 tons per year of all HAPs combined. However, for the HRA more specific significance criteria were applied. These criteria are described below in Section 8.7.3.3.

Methodology

As also described in Section 8.7.3.3, air dispersion modeling of non-criteria, also known as toxic or hazardous, air emissions was performed to assess the potential impacts of these emissions on public health.

8.7.3.2 Construction Impacts

The KRCD CPP's construction phase, which is estimated to last for 24 months, is of relatively short duration. Criteria pollutant air emissions from construction have been assessed in Section 8.1, Air Quality. Non-criteria pollutant air emissions from construction equipment will be temporary and localized and therefore, no long-term impacts to public health are anticipated from KRCD CPP construction.

8.7.3.3 Operation and Maintenance Impacts

Toxic (Non-criteria) Air Emissions

Emissions of non-criteria pollutants, also known as toxic or hazardous air pollutants, from normal operation of a power generating facility can pose a potentially significant risk to public health, if these emissions are generated in sufficient quantities. For the KRCD CPP combustion turbines (CTs), emissions of relatively small amounts of these substances result from the combustion of natural gas. For the cooling tower, emissions, which are based on the composition of the water being used, are due to trace amounts being carried away in the tower's drift. Relatively small amounts of non-criteria pollutant emissions from the auxiliary boiler and emergency (standby) generator result from their use of natural gas fuel. Similarly, small amounts of non-criteria pollutant emissions are emitted by the diesel fire pump's combustion of diesel fuel.

Emissions Rates

Estimated emissions rates of non-criteria pollutants for the two CTs, the cooling tower, the auxiliary boiler, the emergency generator and the fire pump diesel are provided in Tables 8.7-2 through 8.7-7, respectively. These emissions rates were used as inputs for the modeling of the KRCD CPP's potential impacts to public health. Tables 8.7-2 through 8.7-7 also contain a listing of the toxic substances emitted by the KRCD CPP under normal operating conditions.

Table 8.7-2
Non-Criteria Emissions from the Combustion Turbines – Siemens Scenario
KRCD CPP

Pollutant	Emission Factor (lbs/MMBtu) (1)	Emission Rate One CT (lbs/hr)	Emission Rate Both CTs (lbs/hr)	Emission Rate One CT (tpy)	Emission Rate Both CTs (tpy)
Ammonia(2)	**5 ppm**	**12.50**	25.00	52.12	104.24
Propylene	**7.56E-04**	1.58	3.16	6.53	13.07
HAPs					
Acetaldehyde	**4.00E-05**	0.0835	0.167	0.34567	0.691339
Acrolein	**6.40E-06**	0.01336	0.02672	0.055307	0.110614
Benzene	**1.20E-05**	0.02505	0.0501	0.103701	0.207402
1,3 Butadiene	**4.30E-07**	0.000898	0.001795	0.003716	0.007432
Ethylbenzene	**3.20E-05**	0.0668	0.1336	0.276536	0.553071
Formaldehyde	**3.55E-04**	0.741063	1.482125	3.067818	6.135635
Hexane	**2.54E-04**	0.530225	1.06045	2.195002	4.39000
Naphthalene	**1.30E-06**	0.002714	0.005428	0.011234	0.022469
PAH	**6.48E-07**	0.001353	0.002705	0.0056	0.01120
Propylene Oxide	**2.90E-05**	0.060538	0.121075	0.25061	0.501221
Toluene	**1.30E-04**	0.271375	0.54275	1.123426	2.246852
Xylene	**6.40E-05**	0.1336	0.2672	0.553071	1.106143
Totals HAPs		1.93	3.86	7.99	15.98
Totals HAPs + Ammonia & Propylene		16.01	32.02	66.65	133.29

Assumptions:

- Maximum Hourly Fuel Input – One CT MMBtu/hr-HHV = **2087.5**
- Average Annual Hourly Fuel Input – One CT (MMBtu/hr-HHV) = **1,973**
- Average Annual Hourly Ammonia Emissions Rate (lbs/hr) = **11.9**
- Maximum CT Annual Operation Hours = **8760**
- Maximum hourly based on 4,175 MMBtu/hr for both CTs.
- Average Annual based on 3,946 MMBtu/hr for both CTs

Notes: Inputs are in bold text.

(1) Emission factors are from AP-42 Table 3.1-3 of USEPA AP-42 (5th Ed., as revised through 4/00) except for ammonia (from the CT supplier) & propylene, hexane and PAHs, which are CATEF in lbs/MMscf. The CATEF are divided by 1,020 Btus/ft3, a conservative (i.e., low) value for the fuel energy content.

(2) The hourly ammonia emissions rate is based on operation at 26F. The tpy of ammonia is based on its emissions rate at annual average conditions (63 °F).

Acronyms:

CT = Combustion Turbine
lbs/MMBtu = pounds per million British thermal units
MMBtu/hr-HHV = million British thermal units per hour-higher heating value
lbs/hr = pounds per hour
tpy – tons per year
PAH = Polycyclic Aromatic Hydrocarbons
HAP = Hazardous Air Pollutants
USEPA = United States Environmental Protection Agency
CATEF = California Air Toxics Emissions Factors
Btus/ft3 = British thermal units per cubic feet
lbs/MMscf = pounds per millions of standard cubic feet
ppm = parts per million

°F = Fahrenheit

Table 8.7-3
Non-Criteria Emissions from the Combustion Turbines - GE Scenario
KRCD CPP

Pollutant	Emission Factor lbs/MMBtu (1)	Emission Rate One CT (lbs/hr)	Emission Rate Both CTs (lbs/hr)	Emission Rate One CT (tpy)	Emission Rate Both CTs (tpy)
Ammonia (2)	**5 ppm**	**11.3**	22.6	47.30	94.61
Propylene	**7.56E-04**	1.40	2.80	5.85	11.70
HAPs					
Acetaldehyde	**4.00E-05**	0.07408	0.14816	0.309491	0.618982
Acrolein	**6.40E-06**	0.011853	0.023706	0.049519	0.099037
Benzene	**1.20E-05**	0.022224	0.044448	0.092847	0.185694
1,3 Butadiene	**4.30E-07**	0.000796	0.001593	0.003327	0.006654
Ethylbenzene	**3.20E-05**	0.059264	0.118528	0.247593	0.495185
Formaldehyde	**3.55E-04**	0.65746	1.31492	2.746731	5.493462
Hezane	**2.54E-04**	0.470408	0.940816	1.965267	3.930533
Naphthalene	**1.30E-06**	0.002408	0.004815	0.010058	0.020117
PAH	**6.48E-07**	0.0012	0.0024	0.005014	0.010028
Propylene Oxide	**2.90E-05**	0.053708	0.107416	0.224381	0.448762
Toluene	**1.30E-04**	0.24076	0.48152	1.005845	2.01169
Xylene	**6.40E-05**	0.118528	0.237056	0.495185	0.990371
Totals HAPs		1.71	3.43	7.16	14.31
Totals HAPs + Ammonia & Propylene		14.41	28.83	60.31	120.62

Assumptions:

- Maximum Hourly Fuel Input – One CT (MMBtu/hr-HHV) =**1,852**
- Average Annual Hourly Fuel Input – One CT (MMBtu/hr-HHV) =**1,767**
- Average Annual Hourly Ammonia Emissions Rate (lbs/hr) = **10.8**
- Maximum CT Annual Operating Hrs =**8760**
- Maximum hourly based on 3,704 MMBtu/hr for both CTs.
- Average Annual based on 3,533 MMBtu/hr for both CTs.

Notes: **Inputs are in bold text.**

(1) Emission factors are from AP-42 Table 3.1-3 of USEPA AP-42 (5th Ed., as revised through 4/00) except for ammonia (from the CT supplier) & propylene, hexane & PAHs, which are CATEF in lbs/MMscf. The CATEF are divided by 1,020 BTus/ft3, a conservative (i.e., low) value for the fuel energy content. Only the formaldehyde emissions rate is reduced (by 50%) to reflect the use of an oxidation catalyst, although other emissions rates will be reduced considerably as well.

(2) The hourly ammonia emissions rate is based on operation at 26F. The tpy of ammonia is based on its emissions rate at annual average conditions (63 °F).

Acronyms:
CT = Combustion Turbine
lbs/MMBtu = pounds per million British thermal units
MMBtu/hr-HHV = million British thermal units per hour-higher heating value
lbs/hr = pounds per hour
tpy – tons per year
PAH = Polycyclic Aromatic Hydrocarbons
HAP = Hazardous Air Pollutants
US EPA = United States Environmental Protection Agency
CATEF = California Air Toxics Emissions Factors
Btus/ft3 = British thermal units per cubic feet
lbs/MMscf = pounds per millions of standard cubic feet
ppm = parts per million
°F = Fahrenheit

Table 8.7-4
Non-Criteria Emissions from Cooling Tower
KRCD CPP

HAP or TAC[1]	Pollutant Concentration (mg/l)[2]	Circulating Water Rate Per Cell (gpm) [3]	Cooling Tower Drift Rate (%)	Maximum Annual Operating Hours	Emission Rate One Cell (lbs/hr)	Emission Rate 8 Cells (lbs/hr)	Emission Rate One Cell (tpy)	Emission Rate 8 Cells (tpy)
Aluminum	**2.62**	**15,560**	**0.0005**	**8760**	0.000102	8.16E-04	0.000447	0.003576
Ammonia	**54.98**	**15,560**	**0.0005**	**8760**	0.002142	1.71E-02	0.00938	0.07504
Arsenic	**0.01**	**15,560**	**0.0005**	**8760**	3.9E-07	3.12E-06	1.71E-06	1.36E-05
Barium	**0.13**	**15,560**	**0.0005**	**8760**	5.06E-06	4.05E-05	2.22E-05	0.000177
Copper	**0.44**	**15,560**	**0.0005**	**8760**	1.71E-05	1.37E-04	7.51E-05	0.000601
Fluoride	**0.5**	**15,560**	**0.0005**	**8760**	1.95E-05	1.56E-04	8.53E-05	0.000682
Manganese	**0.18**	**15,560**	**0.0005**	**8760**	7.01E-06	5.61E-05	3.07E-05	0.000246
Phosphorus	**22.49**	**15,560**	**0.0005**	**8760**	0.000876	7.01E-03	0.003837	0.030696
Silica	**149.95**	**15,560**	**0.0005**	**8760**	0.005841	4.67E-02	0.025583	0.204662
Zinc	**0.49**	**15,560**	**0.0005**	**8760**	1.91E-05	1.53E-04	8.36E-05	0.000669
Totals					0.009029	0.072229	0.039545	0.316363

Note: Inputs are in bold text.
(1) HAP per Federal Clean Air Act or TAC per Assembly Bill 2588.
(2) Based on 5 cycles of concentration.
(3) The Siemens circulated water rate is used for both the Siemens and GE scenarios, as this circulated water rate (125,200) gallons per minute (gpm)/8 cells) provides for the greater emissions rates.

Acronyms:
HAP = Hazardous Air Pollutants
TAC = Toxic Air Contaminant
mg/l = milligrams per liter
gpm = gallons per minute
lbs/hr = pounds per hour
tpy = tons per year

Table 8.7-5
Non-Criteria Emissions from the Auxiliary Boiler
KRCD CPP

Pollutant	Emission Factor (lbs/Mmbtu) [1]	Emission Rate (lbs/hr)	Emission Rate (tpy)
Propylene	**5.20E-04**	3.18E-02	3.69E-02
HAPs			
Acetaldehyde	**3.04E-06**	1.86E-04	2.15E-04
Acrolein	**2.65E-06**	1.62E-04	1.88E-04
Benzene	**7.80E-04**	4.78E-02	5.53E-02
Ethylbenzene	**6.77E-06**	4.15E-04	4.80E-04
Formaldehyde	**1.21E-05**	7.41E-04	8.58E-04
Hexane	**4.51E-06**	2.76E-04	3.20E-04
Naphthalene	**2.94E-07**	1.80E-05	2.08E-05
Polycyclic Aromatic Hydrocarbons[2]	**9.80E-08**	6.00E-06	6.95E-06
Toluene	**2.60E-05**	1.59E-03	1.84E-03
Xylene	**1.93E-05**	1.18E-03	1.37E-03
Totals-HAPs		5.23E-02	6.06E-02
Totals-HAPs + Propylene		8.42E-02	9.74E-02

Notes: **Inputs are in bold text.**

Table 8.7-5
Non-Criteria Emissions from the Auxiliary Boiler
KRCD CPP

Pollutant	Emission Factor (lbs/Mmbtu) (1)	Emission Rate (lbs/hr)	Emission Rate (tpy)

Assumptions:

- Maximum and Average Annual Fuel Input (MMBtu/hr-HHV) = **61.23**
- Maximum Annual Operating Hours = **2,315**

(1) Based on Ventura County APCD Assembly Bill 2588 Combustion Emissions Factors in lbs/MMscf and fuel energy content of 1,020 Btus/ft3.
(2) Excludes naphthalene.

Acronyms:
lbs/MMBtu = pounds per million British thermal units
lbs/hr = pounds per hour
tpy = tons per year
MMBtu/hr-HHV = million British thermal units per hour-higher heating value
APCD = Air Pollution Control District
lbs/MMscf = pounds per millions of standard cubic feet
Btus/ft3 = British thermal units per cubic feet

Table 8.7-6
Non-Criteria Emissions from the Natural Gas-Fired Emergency Generator
KRCD CPP

Pollutant	Emission Factor lbs/MMBtu (1)	Calculated Emission Rate (lbs/hr)	Actual Hourly Emission Rate (lbs/hr) (2)	Emission Rate (tpy)
Propylene	**5.28E-03**	6.79E-02	3.40E-02	8.83E-04
1,1,2,2-Tetrachloroethane	**4.00E-05**	5.15E-04	2.57E-04	6.69E-06
HAPs				
1,1,2-Trichloroethane	**3.18E-05**	4.09E-04	2.05E-04	5.32E-06
1,3-Butadiene	**3.60E-04**	4.63E-03	2.32E-03	6.02E-05
1,3-Dichloropropene	**2.64E-05**	3.40E-04	1.70E-04	4.42E-06
2-Methylnaphthalene	**3.32E-05**	4.27E-04	2.14E-04	5.55E-06
2,2,4-Trimethylpentane	**2.50E-04**	3.22E-03	1.61E-03	4.18E-05
Acenaphthene	**1.48E-07**	1.90E-06	9.52E-07	2.48E-08
Acenaphthylene	**5.15E-07**	6.63E-06	3.31E-06	8.61E-08
Acetaldehyde	**5.19E-04**	6.68E-03	3.34E-03	8.68E-05
Acrolein	**5.78E-05**	7.44E-04	3.72E-04	9.67E-06
Benzene	**2.14E-04**	2.75E-03	1.38E-03	3.58E-05
Benzo(b)fluoranthene	**4.01E-08**	5.16E-07	2.58E-07	6.71E-09
Benjo(e)pyrene	**4.15E-07**	5.34E-06	2.67E-06	6.94E-08
Benjo(g,h,i)perylene	**7.39E-09**	9.51E-08	4.75E-08	1.24E-09
Biphenyl	**2.12E-04**	2.73E-03	1.36E-03	3.55E-05
Carbon Tetrachloride	**3.67E-05**	4.72E-04	2.36E-04	6.14E-06
Chlorobenzene	**3.04E-05**	3.91E-04	1.96E-04	5.09E-06
Chloroform	**2.85E-05**	3.67E-04	1.83E-04	4.77E-06
Chrysene	**1.40E-08**	1.80E-07	9.01E-08	2.34E-09
Ethylbenzene	**6.97E-05**	8.97E-04	4.48E-04	1.17E-05

Table 8.7-6
Non-Criteria Emissions from the Natural Gas-Fired Emergency Generator
KRCD CPP

Pollutant	Emission Factor lbs/MMBtu (1)	Calculated Emission Rate (lbs/hr)	Actual Hourly Emission Rate (lbs/hr) (2)	Emission Rate (tpy)
Eythylene Dibromide	**4.43E-05**	5.70E-04	2.85E-04	7.41E-06
Fluoranthene	**2.85E-07**	3.67E-06	1.83E-06	4.77E-08
Fluorene	**4.26E-07**	5.48E-06	2.74E-02	7.13E-08
Formaldehyde	**4.62E-03**	5.94E-02	2.97E-02	7.73E-04
Methanol	**2.50E-03**	3.22E-02	1.61E-02	4.18E-04
Methylene Chloride	**2.00E-05**	2.57E-04	1.29E-04	3.35E-06
n-Hexane	**1.11E-03**	1.43E-02	7.14E-03	1.86E-04
Naphthalene	**2.45E-05**	3.15E-04	1.58E-04	4.10E-06
PAH	**2.69E-05**	3.46E-04	1.73E-04	4.50E-06
Phenanthrene	**1.81E-06**	2.33E-05	1.16E-05	3.03E-07
Phenol	**2.40E-05**	3.09E-04	1.54E-04	4.01E-06
Pyrene	**1.83E-07**	2.35E-06	1.18E-06	3.06E-08
Styrene	**2.36E-05**	3.04E-04	1.52E-04	3.95E-06
Tetracholooethane	**2.48E-06**	3.19E-05	1.60E-05	4.15E-07
Toluene	**2.34E-04**	3.01E-03	1.51E-03	3.91E-05
Vinyl Chloride	**1.49E-05**	1.92E-04	9.59E-05	2.49E-06
Xylene	**6.33E-04**	8.15E-03	4.07E-03	1.06E-04
Totals-HAPs	0.0112	0.1440	0.0720	0.0019
Totals-HAPs + Propylene	0.0165	0.2119	0.1060	0.0028

Assumptions:

- Maximum Fuel Input (MMBtu/hr-HHV) = **12.87**
- Maximum Annual Operating Hours = **26**
- The emergency generator is anticipated to operate for 30 minutes/week for 52 weeks annually.

Notes: **Inputs are in bold text.**

(1) Emissions factors from AP-42 (5th Ed., 7/00) Table 3.2-2 (Lean Burn) and CATEF database.

(2) The actual hourly emissions rate is 50% of the calculated rate, as the emergency generator will only operate for 30 minutes in an hour.

Acronyms:

lbs/MMBtu = pounds per million British thermal units
lbs/hr = pounds per hour
tpy = tons per year
MMBtu/hr-HHV = million British thermal units per hour-higher heating value
CATEF = California Air Toxics Emissions Factors

Table 8.7-7
Non-Criteria Emissions from the KRCD CPP Diesel Fire Pump
KRCD CPP

Pollutant	Emission Factor lbs/MMBtu (1)	Calculated Emission Rate (lbs/hr)	Actual Hourly Emission Rate (lbs/hr) (2)	Emission Rate (tpy)
Diesel Particulates	**2.79E-02**	6.72E-02	3.36E-02	8.73E-04

Assumptions:

- Maximum Fuel Input (MMBtu/hr-HHV) =**2.4083**
- The diesel fire pump is anticipated to operate for 30 minutes/week for 52 weeks annually.
- Maximum Annual Operation Hours =**26**

Note: **Inputs are in bold text.**

(1) Based on Ventura County APCD Assembly Bill 2588 Diesel Combustion Emissions Factors (internal combustion) in lbs/1,000 gallons. The total of all the applicable Ventura County APCD emissions factors, which is assumed to envelope diesel particulate emissions, is 3.911 pounds/1,000 gallons. Based on diesel fire pump fuel consumption of 17.2 gallons per hour and 2.4083 MMBtu/hr, and an output of 284 horsepower, the effective emissions factor is 0.107 g/bhp-hr or 2.79E-02 lbs/MMBtu.

(2) The actual hourly emissions rate is 50% of the calculated rate, as the diesel fire pump will only operate for 30 minutes in an hour.

Acronyms:
lbs/MMBtu = pounds per million British thermal units
lbs/hr = pounds per hour
tpy = tons per year
APCD = Air Pollution Control District
g/bhp-hr = grams per brake horsepower hour

Assessment Methodology

The methodology described in the Office of Environmental Health Hazard Assessment (OEHHA) guidance manual for the preparation of Health Risk Assessments (OEHHA, 2003) and as implemented in the California Air Resources Board (CARB) Hotspot Analysis and Reporting Program (HARP) version 1.3 was followed to calculate the potential health risks from the KRCD CPP. The analyses included assessments of cancer risk, chronic health impacts, and acute health impacts as well as a burden analysis to calculate the expected number of excess cancer cases in the exposed population. The calculation of cancer risks used the point-estimate approach and included inhalation, dermal absorption, soil ingestion, mother's milk, and homegrown produce pathways. Chronic health impacts, as represented by chronic hazard index, included inhalation and oral doses. The inhalation route (short-term impacts) represented acute health impacts. The HARP model contains a database with the most recent OEHHA/CARB health values. Table 8.7-8 lists the applicable inhalation and oral cancer potency factors, acute Reference Exposure Levels (REL), and chronic REL, as applicable, from KRCD CPP emissions.

Table 8.7-8
OEHHA/ARB Health Values for Use in Risk Assessments[1]
KRCD CPP

Pollutant	Inhalation Cancer Potency[1] 1/(mg/kg-day)	Oral Cancer Potency[1] 1/(mg/kg-day)	Acute Inhalation REL[2] µg/m^3	Chronic Inhalation REL µg/m^3	Chronic Oral REL mg/kg-day
CTs					
Acetaldehyde	.01			9.0	
Acrolein			0.19	0.06	
Ammonia			3200.	200.0	
Benzene	0.1		1300.	60.0	
1,3 Butadiene	0.6			20.0	
Ethylbenzene				2000.0	
Formaldehyde	0.02		94.0	3.0	
Hexane				7000.0	
Naphthalene*				9.0	
PAH's	3.9	12.0			
Propylene				3000.0	
Propylene oxide	0.013		3100.0	30.0	
Toluene			37000.0	300.0	
Xylene			22000.0	700.0	
Cooling Tower					
Arsenic	12.0	1.5	0.19	0.03	3.0E-4
Copper			100.0	2.4	
Fluoride			240.0	13.0	0.04
Manganese				0.2	
Phosphorus				0.07	
Silica				3.0	
Zinc				35.0	
Auxiliary Boiler					
Acetaldehyde	.01			9.0	
Acrolein			0.19	0.06	
Benzene	0.1		1300.	60.0	
Ethylbenzene				2000.0	
Formaldehyde	0.02		94.0	3.0	
Hexane				7000.0	
Naphthalene				9.0	
Polycyclic Aromatic Hydrocarbon	3.9	12.0			
Propylene				3000.0	
Toluene			37000.0	300.0	
Xylene			22000.0	700.0	
Emergency Generator					
1,1,2,2-Tetrachloroethane	0.2				
1,1,2-Trichloroethane	0.057				
1,3-Butadiene	0.6			20.0	
Acetaldehyde	.01			9.0	
Acrolein			0.19	0.06	

Table 8.7-8
OEHHA/ARB Health Values for Use in Risk Assessments[1]
KRCD CPP

Pollutant	Inhalation Cancer Potency[1] 1/(mg/kg-day)	Oral Cancer Potency[1] 1/(mg/kg-day)	Acute Inhalation REL[2] µg/m^3	Chronic Inhalation REL µg/m^3	Chronic Oral REL mg/kg-day
Benzene	0.1		1300.	60.0	
Benzo(b)fluoranthene	0.39	1.2			
Carbon Tetrachloride	0.15		1900.0	40.0	
Chlorobenzene				1000.0	
Chloroform	0.019		150.0	300.0	
Chrysene	0.039	0.12			
Ethylbenzene				2000.0	
Eythylene Dibromide	0.25			0.8	
Formaldehyde	0.02		94.0	3.0	
Methanol			28000.0	4000.0	
Methylene Chloride	0.0035		14000.0	400.0	
n-Hexane				7000.0	
Naphthalene*				9.0	
PAH	3.9	12.0			
Phenol			5800.0	200.0	
Pyrene					
Styrene			21000.0	900.0	
Tetrachloroethane	0.2				
Toluene			37000.0	300.0	
Vinyl Chloride	0.27		180000.0	26.0	
Xylene			22000.0	700.0	
Diesel Fire Pump					
Diesel Exhaust Particulate	1.1			5.0	

Notes:
[1] OEHHA, 2005, Consolidated Table Of OEHHA/CARB Approved Risk Assessment Health Values. April 25.
[2] One-hour average for all pollutants except benzene, which uses six-hour average.

Acronyms:
mg/kg/day = milligrams per kilogram per day
µg/m^3 = micrograms per cubic meter

The analysis identified the location of the highest impacts and assumed those impacts would represent the Maximally Exposed Individual (MEI). Assumptions for the variables used in the analysis are provided in Appendix 8.7-1, Health Risk Assessment. If the results of the HRA for the MEI demonstrate less than significant impacts, then the potential impacts to all other receptors/individuals will also be less than significant.

The HARP program includes a dispersion module (ISCST3) and a risk analysis module. The modeling domain for the risk analyses extended ten kilometers (km) around the project site and was entered into the HARP program as a Cartesian grid. The same meteorological data and

input parameters used in the ISCST3 model for the criteria pollutant analysis (see Section 8.1, Air Quality) were input to the HARP dispersion module. The air quality analysis performed for the calculation of criteria pollutant impacts showed that the greatest short-term impacts occurred when the CT had the lowest exit velocities and exhaust temperatures (i.e., Scenario F, as noted in Section 8.1, Air Quality Appendix 8.1-5, Operations Phase Emissions). Consequently, these stack parameters were used in the acute analysis for both the Siemens and General Electric (GE) CT options. The dispersion modeling of carcinogenic and chronic impacts from the CTs used the same stack parameter inputs as were used in the criteria pollutants annual impact analysis. The operating parameters for the other emissions sources (auxiliary boiler, cooling towers, emergency generator, and fire pump) remained unchanged for short-term and long-term analyses.

Assessment of Health Risk

Carcinogenic or cancer risk is the probability or chance of contracting cancer over a human life span (assumed to be 70 years). Carcinogens are assumed to have no threshold below which there would be no human health impact. In other words, any exposure to a carcinogen is assumed to have some probability of causing cancer; the lower the exposure, the lower the cancer risk (i.e., a linear, no-threshold model). Under state regulations and the San Joaquin Valley Air Pollution Control District (SJVAPCD) guidelines, an incremental cancer risk less than or equal to ten-in-one million due to a project that uses Toxics Best Available Control Technology (TBACT) is considered to be a less-than-significant impact on public health. The ten-in-one million risk level is also used by the Air Toxics “Hot Spots” (Assembly Bill (AB) 2588) program and California’s Proposition 65 as the public notification level for air toxic emissions from existing sources.

Non-carcinogenic or non-cancer health effects can be either long-term (chronic) or short-term (acute). In evaluating potential non-carcinogenic health risks from air toxics, it is assumed there is a dose of the chemical of concern below, which there would be no impact on human health. The air concentration corresponding to this dose is called the REL. Non-carcinogenic health risks are measured in terms of a health hazard quotient, which is the calculated exposure of each contaminant divided by its REL. Hazard quotients for pollutants affecting the same target organ are summed with the resulting totals expressed as health hazard indices for each organ system. A hazard index of less than or equal to 1.0 is considered to indicate a less-than-significant health risk by the SJVAPCD. For this health risk assessment, all health hazard quotients were summed regardless of target organ.

This method leads to a conservative (upper bound) assessment. RELs used in the health hazard index calculations were those published in the OEHHA/CARB listings dated April 25, 2005 (See Table 8.7-8).

Chronic toxicity is defined as adverse health effects from prolonged chemical exposure, caused by chemicals accumulating in the body. Because chemical accumulation to toxic levels typically occurs slowly, symptoms of chronic effects usually do not appear until long after exposure commences. The lowest no-effect chronic exposure level for a non-carcinogenic air toxic is the chronic REL. Below this threshold, the body is capable of eliminating or detoxifying the chemical rapidly enough to prevent its accumulation. The chronic hazard index was calculated using the hazard quotients calculated with annual concentrations.

Acute toxicity is defined as adverse health effects caused by a brief chemical exposure of no more than 24 hours. For most chemicals, the air concentration required to produce acute effects is higher than the level required to produce chronic effects because the duration of exposure is shorter. Because acute toxicity is predominantly manifested in the upper respiratory system at threshold exposures, all health hazard quotients are typically summed to calculate the acute health hazard index. One-hour average concentrations are divided by acute RELs to obtain a health hazard index for health effects caused by relatively high, short-term exposure to air toxics.

Table 8.7-9 summarizes the KRCD CPP maximum projected health risks for both the Siemens and GE CT options. The maximum excess lifetime cancer risk for the KRCD CPP was projected to be 2.29 in a million (2.29×10^{-6}) if the Siemens CTs are used or 3.38 in a million (3.38×10^{-6}) if the GE CTs are used. The maximum impacts were predicted to occur approximately 85 meters (280 feet) south of the project site fence and 130 meters (425 feet) west of the eastern project site fence line. The acute and chronic hazard indices also are summarized in Table 8.7-9. For both the Siemens and GE options the maximum acute hazard index was predicted to be approximately 0.28 and located near the southwest corner of the project site fence line. The maximum chronic hazard index, which was calculated to be 0.00484 (4.84×10^{-3}) for the Siemens CT option and 0.00747 (7.47×10^{-3}) for the GE CT option, was predicted to occur at the same location as the maximum cancer risk. Therefore, the KRCD CPP projected health risks are well within acceptable levels. Using census block data within HARP, for cancer risks over one in one million, the HARP model predicted cancer burdens of 0.00023 and 0.00028 for the Siemens and GE options, respectively. A cancer burden value of “1” means that one excess cancer might occur. The KRCD CPP’s predicted cancer burden is well below this level. Summaries of these calculations may be found in Appendix 8.7-1, Health Risk Assessment.

Table 8.7-9 Summary Of Health Risk Assessment Results KRCD CPP		
	Siemens	**GE**
Cancer Risk (in a million)	2.29	3.38
Location (UTM meters)	270260 E, 4052640 N (~85 m South of property fence)	270260 E, 4052640 N (~85 m South of property fence)
Cancer Burden	2.31E-04 (0.000231)	2.82E-04 (0.000281)
Chronic Hazard Index	4.84E-03 (0.00483)	7.47E-03 (0.00747)
Location (UTM meters)	270260 E, 4052640 N (~ 85 m South of property fence)	270260 E, 4052640 N (~ 85 m South of property fence)
Acute Hazard Index	2.76E-01 (0.276)	2.79E-01 (0.279)
Location (UTM meters)	269774.60 E, 4052760.57N, (~Southwest corner of fence)	269774.60 E, 4052760.57N, (~Southwest corner of fence)
Acronyms: UTM = Universal Transverse Mercator E = Easting N = Northing m = Meters		

Impacts at the Indianola School

Table 8.7-10 shows the HRA results at the Indianola School. The health risks at this location are substantially less than the overall risks for the KRCD CPP project site, which were determined to be less than significant and below threshold levels.

Table 8.7-10 Summary of Health Risk Assessment Results at Indianola School KRCD CPP	
GE*	
Cancer Risk – 70 year adult exposure (in a million)	0.09
Cancer Risk – 9 year child exposure (in a million)	0.017
Cancer Risk – 9 year adult exposure (in a million)	0.012
Chronic Hazard Index	1.32E-04 (0.000132)
Acute Hazard Index	4.35E-02(0.0435)
*GE Scenario Impacts were analyzed, since the earlier analyses showed that impacts were largest with GE turbines	

The analysis of potential cancer risk employs methods and assumptions generally applied by regulatory agencies for this purpose. Given the importance of assuring protection of public health, these methods and assumptions are highly conservative as follows:

- The analysis includes representative weather data over a one-year period, as recommended by the SJVAPCD to assure that the least favorable conditions producing the highest ground-level concentration of power plant emissions are included;
- The power plant is assumed to operate at hourly, daily, and annual emission conditions that produce the highest ground-level concentrations; and
- The location of the highest ground-level concentration of power plant emissions is identified and the analysis then assumes that a sensitive individual is at this location continuously over the entire 70-year period.

The point of using these unrealistic assumptions is to consciously overstate the potential impacts. No one will experience exposures as great as those assumed for this analysis. By determining that even this highly overstated exposure will not be significant, the analysis enables a high degree of confidence that the much lower exposures that actual persons will experience will not result in a significant increase in cancer risk. In short, the analysis assures that there will not be significant public health impacts at any location, under any weather condition, under any operating condition.

Criteria Air Emissions

Impacts from KRCD CPP emissions of criteria pollutants are discussed in Section 8.1, Air Quality. The impacts discussion demonstrates that the KRCD CPP will not cause or significantly contribute to a violation of any NAAQS or CAAQS. Because these ambient air quality standards have been developed to protect public health, the KRCD CPP emissions of criteria pollutants will not result in any significant impacts to public health.

Hazardous Materials

As discussed in Section 8.8, Hazardous Materials, the KRCD CPP will use and store a variety of hazardous materials. The normal use and storage of these materials will not result in any significant adverse impacts to public health. However, while precautionary and mitigation measures will be used in the handling and storage of hazardous materials, an accidental release is possible. The potential impacts from such an incident are discussed in Section 8.8, which concludes that the likelihood of such an event is low and the potential impacts are not significant.

Odors

The KRCD CPP will inject aqueous ammonia into the CT exhaust streams to minimize emissions of nitrogen oxides. The nature of this process results in a small amount of un-reacted ammonia (ammonia slip) be released into the atmosphere via the CT exhaust stacks. However, since the concentration of this ammonia slip at the point of release will be no more than five

parts per million (ppm) and its concentration at or near ground level after mixing with and dispersing into the ambient air will be less, ammonia slip will not result in an odor impact, as the human detection threshold for ammonia is five ppm.

8.7.3.4 Cumulative Impacts

Impacts to public health from operation of the KRCD CPP will be below significance levels. Normally, when a project's impacts are insignificant, a cumulative assessment is not necessary. However, the KRCD CPP has requested copies of all AB2588 toxic inventory reports and HRAs for facilities within a two-mile radius of the project site from the SJVAPCD. The purpose of obtaining this information is to provide a reasonable basis for comparison of the estimated impacts from KRCD CPP emissions of non-criteria pollutants with those of other facilities in the vicinity and determine whether there is a significant potential for a cumulative impact effect. As of the date of this report, the information requested has not been received.

The Fresno County Department of Community Health was also contacted to identify any public available health studies, which relate to potentially affected populations within a six-mile radius of the KRCD CPP project site. In a February 14, 2007 letter (see Appendix 8.7-2), the county indicated that it is not aware of any such studies.

8.7.3.5 Mitigation Measures

Non-Criteria Air Emissions

The KRCD CPP's emissions of non-criteria pollutants will be minimized through the use of natural gas as the only fuel for the CTs. Additionally, the KRCD CPP's application of BACT will serve as TBACT to minimize emissions of non-criteria emissions.

Criteria Air Emissions

As discussed in Section 8.1, Air Quality, the KRCD CPP will employ the use of BACT to minimize the emissions of criteria pollutants. Further, for those emissions, which are classified as non-attainment of either the NAAQS or CAAQS or which are pre-cursor pollutants with respect to non-attainment pollutants, the KRCD CPP is providing Emissions Reductions Credits (ERC) to more than fully offset its own emissions.

Hazardous Materials

A discussion of mitigation for the KRCD CPP use and storage of hazardous materials is provided in Section 8.8, Hazardous Materials. These measures include special storage and handling of hazardous materials, fire prevention and safety/emergency response training for operations and construction personnel.

Odors

No mitigation is proposed for odors, as there will be no potentially significant impacts.

8.7.4 LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

Applicable federal, state and local LORS that affect public health and are potentially applicable to the KRCD CPP are summarized below in Table 8.7-11.

Table 8.7-11
Summary of Applicable LORS
KRCD CPP

Regulation/Program	Description/Project Applicability/Conformance (AFC Section)
Federal	
Federal Clean Air Act	Establishes safe exposure limits for toxic air pollutants and identifies pertinent BACT to protect the public from exposure to air pollutants. Requires that the new source review (NSR) rule for each APCD include regulations that require new or modified procedures for controlling the emissions of toxic air contaminants. Based on results of the HRA, emissions of toxic air contaminants do not exceed acceptable levels. Applying BACT will minimize emissions of criteria pollutants and increases in emissions of applicable criteria pollutants will be offset with ERCs. See Section 8.7.4.1 and Section 8.1, Air Quality
40 Code of Federal Regulations (CFR) 68 – Risk Management Plan (RMP)	Regulates air emissions from the area, stationary, and mobile sources to protect public health and the environment. Requires preparation of an RMP, if listed hazardous materials are stored in excess of specified threshold quantities (TQ). The KRCD CPP will store ammonia in excess of the federal TQ, so an RMP will be prepared. See Section 8.7.4.1 and Section 8.8, Hazardous Materials
State	
California Clean Air Acts, Health and Safety Code Section 39650, et. seq.	Requires an evaluation of toxic air contaminants, an HRA and application of BACT.

Table 8.7-11 Summary of Applicable LORS KRCD CPP	
Regulation/Program	**Description/Project Applicability/Conformance (AFC Section)**
	As noted above under the federal Clean Air Act discussion, emissions of toxic air contaminants do not exceed acceptable levels and the KRCD CPP is implementing the applicable BACT. See Sections 8.7.4.2 and Section 8.1, Air Quality
California Health & Safety Code, Sections 25500 to 25545 (Hazardous Materials Management)	Establishes the public right to know about acutely hazardous materials accident risks that may affect their health and safety. Requires the preparation of an RMP where acutely hazardous materials are used. A RMP will be prepared prior to commencement of KRCD CPP operations. An off-site consequence analysis (See Section 8.8, Hazardous Materials) was performed to assess the potential risks from a spill or rupture of the aqueous ammonia storage tank. The results of this analysis indicate that significance level thresholds will not be exceeded at off-site receptors. See Section 8.7.4.2 and Section 8.8, Hazardous Materials
Health & Safety Code, Section 25249.5 et seq. (Safe Drinking Water and Toxic Enforcement Act of 1986 or Proposition 65)	Requires posted warnings for listed chemicals known to the State of California to cause cancer or reproductive toxicity. Given the nature and variety of substances that will be handled at the KRCD CPP as well as the broad nature of the Proposition 65 requirements, appropriate warnings will be posted. See Section 8.7.4.2
California Health & Safety Code, §§ 44360 to 44366 (Air Toxics "Hot Spots" Information and Assessment Act – AB 2588)	Requires facilities that use hazardous materials in sufficient quantities to prepare a HRA to evaluate and predict the dispersion of hazardous substances in the environment and the potential for exposure of human populations and to assess and quantify potential health risks.

Table 8.7-11 Summary of Applicable LORS KRCD CPP	
Regulation/Program	**Description/Project Applicability/Conformance (AFC Section)**
	The required HRA has been performed as part of this AFC process. See Section 8.7.3.4 and Section 8.7.4.2
Local	
SJVAPCD Integrated Air Toxic Program	Assures compliance with state and federal requirements regarding toxic air contaminants. The KRCD CPP will comply with program through compliance with the other LORS listed in this section. See Section 8.7.4.3

8.7.4.1 Federal

The Federal Clean Air Act establishes safe exposure limits for toxic air pollutants and identifies BACT to protect the public from exposure to these air pollutants. It further requires that the NSR rule for each air pollution control district include regulations that require new or modified procedures for controlling the emissions of toxic air contaminants.

The Clean Air Act Regulations (40 CFR 68) are designed to prevent accidental releases of hazardous materials. The regulations require facilities that store a TQ or greater of listed regulated substances to develop an RMP, including hazard assessments and response programs to prevent accidental releases of listed chemicals.

8.7.4.2 State

Section 39650 et seq. of the California Health & Safety Code was developed to create a program that specifically addresses the evaluation and control of toxic air contaminants, while complementing existing authority to establish, achieve, and maintain ambient air quality standards. It provides for the coordination of state toxic air contaminant regulations with federal requirements, the identification of air toxic emissions and their control.

Sections 25500 through 25545 of the California Health & Safety Code establish the public's right to know about acutely hazardous materials accident risks that may affect their health and safety. These sections also require the preparation of an RMP where acutely hazardous materials are used.

Sections 44360 through 44366 of the California Health & Safety Code are part of the broader Section 44300 et seq. These sections require that facilities, which use hazardous materials in sufficient quantities, prepare a HRA to evaluate and predict: the dispersion of hazardous substances in the environment, the potential for exposure of human populations, and to assess and quantify potential health risks.

The Safe Drinking Water and Toxics Enforcement Act (Proposition 65), which is administered by California's OEHHA, identifies chemicals that cause cancer and reproductive toxicity, informs the public, and prevents discharge of the chemicals into sources of drinking water. Lists of the chemicals of concern are published and updated periodically.

8.7.4.3 Local

The SJVAPCD regulates toxic air emissions under its Integrated Air Toxic Program. This program combines the state and federal requirements and is aimed at protecting public health. Major goals of this program include:

- Ensuring compliance with state and federal requirements aimed at protecting public health;
- Eliminating duplication and redundancy where multiple rules, programs, and emission limits apply to a single operation;
- Maximizing the use of existing programs for quantifying, assessing, and controlling air toxic emissions;
- Maximizing the use of the SJVAPCD existing ozone and particulate matter ten microns diameter and smaller (PM10) regulations that also result in air toxic emissions reductions; and
- Not federalizing "state-only" requirements unless doing so provides a corresponding benefit by substantially streamlining the program.

8.7.5 INVOLVED AGENCIES AND CONTACTS

The agencies responsible for ensuring health and safety of the public and for implementing the LORS addressed previously in Table 8.7-11 are listed in Table 8.7-12. Contact information for applicable agencies is also provided below in Table 8.7-12.

Table 8.7-12 Agency Contacts – Public Health KRCD CPP		
Agency	**Contact Person, Title and email**	**Phone Number**
CARB, Stationary Source Division 1001 "I" Street PO Box 2815 Sacramento, CA 95812	Mike Tollstrup, Chief – Projects Assessment Branch mtollstr@arb.ca.gov	(916) 322-6026
SJVAPCD – Fresno Office 1990 E. Gettysburg Avenue Fresno, CA 93726	Dave Warner, Chief of Permit Division sjvapcd@valleyair.org	(559) 230-6000
Fresno County Department of Community Health, Environmental Health Division 1221 Fulton Mall Fresno, CA 93721	Note 1 dch@co.fresno.ca.us	(559) 445-3271
Notes: 1. The Fresno Department of Community Health declined to provide individual contact information.		

8.7.6 REQUIRED PERMITS AND SCHEDULES

No specific permits, which have a direct connection to public health are required. Permits as well as their associated schedules that relate indirectly to public health, e.g., the Hazardous Materials Business Plan, RMP, are discussed in Section 8.8, Hazardous Materials. The Determination of Compliance, which is issued by the SJVAPCD in lieu of an Authority to Construct permit, is a prerequisite to KRCD CPP certification by the CEC as discussed further in Section 8.1, Air Quality.

8.7.7 REFERENCES

CalARP Program. Website at: www.oes.ca.gov/Operational/

California Codes. Website at: http://www.leginfo.ca.gov.htm.

Fresno County, Department of Community Health, Environmental Health Division, Phone Conversation with Phyllis Stewart re Contact Information, February 12, 2007.

Office of Environmental Health Hazard Assessment (California), The Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments, August 2003.

RMP Program. Website at: www.chemalliance.org

San Joaquin Valley Air Pollution Control District. Website at: www.valleyair.org