

4.13 HAZARDOUS MATERIALS

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Hazardous Materials – Environmental Setting

This section describes the county's hazardous waste generation sites; treatment, storage, and disposal facilities; transportation routes; and contaminated sites. Hazardous waste sources include gasoline and other leaking tanks, accidental spills, and some common agricultural, commercial, industrial, and household chemicals. The County's emergency response capability and educational efforts are outlined. Efforts by the County and others to reduce the use of hazardous materials are described.

The Sonoma County Department of Emergency Services (DES) defines a hazardous material as a:

Substance or combination of substances which because of quantity, concentration, physical, chemical, radiological, explosive, or infectious characteristics, poses a potential danger to humans or their environment. Generally such materials are classed as explosives and blasting agents, flammable and nonflammable gasses, combustible liquids and solids, oxidizers, poisons, disease-causing agents, radioactive materials, corrosive materials and other materials including hazardous wastes.

Hazardous materials are used throughout Sonoma County in various agricultural, industrial, commercial, medical, research, and household settings. Numerous federal and State laws, as well as local policies and plans, control the production, transportation, storage, and use of these hazardous materials and their waste products.

HAZARDOUS WASTE GENERATING SITES

Numerous hazardous materials are found in Sonoma County. Business and industry generators include the automotive and transportation industries, which store and use petroleum fuels and use chlorinated solvents and paints for repairs; manufacturing industries that use solvents, paints, metals, compressed gases, and cleaning agents; and the agricultural industry, which uses pesticides, fungicides, herbicides, and fertilizers. In 2000, Sonoma County uses generated 13,434 tons of hazardous waste, not counting waste oil. The number of large and small generators increased over the past decade from 31 large and 240 small generators in 1991, to 69 large and 862 small generators in 2000.¹

The Geysers produce a significant amount of electricity from the Geysers Known Geothermal Resource Area and, in turn, generates hazardous wastes. The main wastes generated are ammonia in the steam condensate and small quantities of heavy metals in the waste sludge. In the air stream, hydrogen sulfide gas is the primary waste of regulatory concern.

¹ *Hazardous Waste/Tanner Planning Report, 2000 San Francisco Bay Area Waste Generators and Treatment Facilities Association of Bay Area Governments, September, 2001.*

Hazardous waste sites include businesses that store, generate, or dispose of hazardous waste. Such businesses are required to prepare and submit a Hazardous Materials Business Plan to the County. Approximately 1,000 businesses participate in this or related programs designed to regulate the ongoing business and industrial use of hazardous materials in the county.

The primary hazardous waste site is the County's Household Toxic Waste Facility that is expected to open in 2005 at the Central Disposal Site located between Cotati and Petaluma. Residents will be able to drop off household toxics for free, while qualifying small businesses will be charged disposal fees based on the type and quantity of hazardous material. There are limitations on the amount of waste that can be legally transported to the facility.²

TREATMENT, STORAGE, AND DISPOSAL FACILITIES (TSDFS)

Treatment, Storage, and Disposal Facilities (TSDFs) collect, store, recycle, and treat hazardous wastes from industrial and commercial sites. Also, numerous industrial and commercial facilities are required to treat and temporarily store their own hazardous materials and waste. Hazardous materials and waste are also collected at periodic mobile "drop-off" events held in various parts of the county throughout the year, which provide a heavily used opportunity for households to conveniently dispose of leftover paints, oils, and other wastes. Hazardous waste haulers transport all hazardous waste, both one-time and recurring, to TSDFs outside of the county.³ Since there are no TSDFs within Sonoma County, the county had a net capacity deficit of 13,434 tons in 2000, according to the region wide Capacity Allocation Formula. This is not considered a problem, as outside county TSDFs are not at capacity.⁴

TRANSPORTATION ROUTES

Hazardous wastes are transported through the county by truck, primarily along the major arterials and highways, for disposal at TSDFs in other counties or outside of California. **Exhibit 4.13-1** shows the several hazardous waste haulers located within the county that collect different types of waste from local generators; other haulers from outside the county may also provide local service. County roads and city streets may be used to transport hazardous wastes from their sources to major highways. Haulers are required to use the most direct, safe route. Aside from low level nuclear sources used in some detection devices, no nuclear material of substance is transported through Sonoma County.⁵

² Hazardous Materials Division, Sonoma County Department of Emergency Services, [online] <http://www.sonoma-county.org/esservice/hazard.htm>, February 2003.

³ For a current list of TSDFs, refer to the *California Commercial Offsite Hazardous Waste Management Facilities* list, Department of Toxic Substance Control, Hazardous Waste Management Program, [online] <http://www.dtsc.ca.gov/HazardousWaste/index.html>, October, 2003.

⁴ *Hazardous Waste/Tanner Planning Report, 2000 San Francisco Bay Area Waste Generators and Treatment Facilities*, pg 7, Association of Bay Area Governments, September, 2001.

⁵ Nichols • Berman communication with Lisa Posternak, Sonoma County PRMD, July 2003.

Safety-Kleen, an industrial waste management company, operates a hazardous materials transfer station in Rohnert Park. The total amount of hazardous materials stored at any given time is 2,000 gallons. These materials are shipped to the company’s facility in Reedley, California, for treatment. The primary hazardous materials include mineral spirit solvent, perk (a cleaning solvent used in the dry cleaning business), and lacquer thinner. These materials are obtained from an area extending from San Francisco to Eureka.⁶

Exhibit 4.13-1
Sonoma County Hazardous Waste Haulers

Hauler	Location	Hazardous Waste	Motor Oil / Antifreeze	Contaminated Soil	Paint	Fluorescent Lamps
Safety Kleen	Rohnert Park	Yes	Yes	Yes	Yes	Yes
SR Chain Environmental	Healdsburg	Yes	Yes	Yes	Yes	No
Don Beste	Windsor	Yes	No	Yes	No	No
Fuel Oil Polishing Program	Rohnert Park	No	No	Yes	No	No
Sunshine West Lighting	Santa Rosa	No	No	No	No	Yes
Eco-Tech Systems	Sonoma	No	Yes	No	No	No

Source: Nichols • Berman and the Integrated Waste Division, Department of Public Works and Transportation, and County of Sonoma.

CONTAMINATED SITES AND BROWNFIELDS

Brownfields are properties that lie fallow due to actual or suspected contamination but have a potential for redevelopment or reuse. Former auto-wrecking yards, gas stations, computer-electronics industry sites with chlorinated solvent discharges, and lumber mills are examples of brownfields found in Sonoma County. Redevelopment of brownfield properties can be a cost effective alternative for land to meet local development needs. Brownfield projects result in environmental remediation of the land to make it suitable for development.

Within the North Coast Regional Water Quality Control Board (Region 1) jurisdiction, there are 1,140 sites which have been contaminated with hazardous waste. Of these, 520 sites have been remediated and are considered closed. The remaining 620 sites are considered open (i.e., still active) and in need

⁶ Revised Draft EIR for the Rohnert Park General Plan, City of Rohnert Park, 2000.

of remediation.⁷ Within the Bay Area Water Quality Control Board's district (Region 2) there are 26 sites which have been contaminated with hazardous waste.⁸⁹ Of these, 13 sites have been remediated. The remaining 13 sites are still active and in need of remediation.¹⁰

UNDERGROUND STORAGE TANKS AND OTHER HAZARDOUS SPILLS

Underground storage tanks (USTs) are common throughout Sonoma County. They are most often used for the storage of gasoline and diesel fuels, while also used for the storage of new and used motor oil, solvents, chemicals, etc. Leaking underground fuel tanks (LUFTs), mainly those containing petroleum, are the leading cause of soil and groundwater contamination in the county. LUFTs occur in the urbanized areas of the county, along the Highway 101 corridor and other county highways.¹¹ In one study, *Methyl tertiary-butyl ether* (MTBE), a gasoline additive, has been found in 78 percent of the groundwater monitoring wells examined statewide, including wells located in the Sebastopol area. MTBE is considered a possible human carcinogen by the U.S. Environmental Protection Agency. MTBE is a frequent and widespread contaminant in shallow groundwater throughout California. The potential long-term accumulation resulting from the dispersion of MTBE plumes may be a key consideration for management of specific regional groundwater basins. Preventing leaks is a critical requirement for protecting drinking water resources.¹²

It is difficult to pinpoint the exact number of LUFT sites at any one point in time. The number of MBTE cases is increasing as some older closed petroleum hydrocarbon sites are re-examined and re-opened for investigation.¹³

The RWQCBs investigate and coordinate the clean up of other types of hazardous spills through the program *Spills, Leaks, Investigations, and Cleanups* (SLIC), in conjunction with the County Environmental Health Department. The SLIC program is designed to clean up the impacts of current

⁷ A *closed* site is a site on which hazardous waste remediation has already occurred. An *open* site is one on which the remediation is not yet complete or has not started.

⁸ As discussed in *Section 4.5 Hydrology and Water Quality* there are two RWQCB districts in Sonoma County.

⁹ Nichols • Berman communication with Chuck Headlee, Bay Area Regional Water Quality Control Board, February, 2005.

¹⁰ Nichols • Berman communication with Chuck Headlee, Bay Area Regional Water Quality Control Board, February, 2005.

¹¹ GeoTracker database, State Water Resources Control Board, accessed online at <http://www.geotracker.swrcb.ca.gov/about.htm>, October 2003.

¹² *An Evaluation of MTBE Impacts to California Groundwater Resources*, A. M. Happel, E. H. Beckenbach, and R. U. Halden, Lawrence Livermore National Laboratory, 1998.

¹³ Since the number of active cases is increasing, please refer to the State Geo Tracker database system for the present status and approximate locations of LUST sites. This can be accessed on the internet at <http://geotracker.swrcb.ca.gov>.

or historic unauthorized discharges to groundwater, but in some cases also to surface waters or sediments. ¹⁴

COMMERCIALLY APPLIED CHEMICALS

Pesticides, herbicides, insecticides, fungicides, etc are applied for both commercial and household purposes. Pesticides that are applied commercially are regulated and monitored by the State Department of Pesticide Regulation. The Agricultural Commissioner monitors commercial applications of agricultural pesticides, a major component of commercially applied chemicals in Sonoma County. The use of pesticides in households is regulated by the instructions on the container and is not independently monitored. As a result, the extent of household applied chemicals is not known.

From 1991-95, California pesticide use increased, as did the acreage of planted land. Six pesticides accounted for 73 percent of the increase, with most of the increased use on a handful of crops. One pesticide that increased in use, sulfur, is considered to be naturally occurring and is used as part of *Integrated Pest Management* (IPM). Soil fumigants such as methyl bromide and metam-sodium are regarded among the most toxic and probable carcinogens; their application has increased statewide with the addition of newly-planted areas, including wine grapes. The State Department of Pesticide Regulation (DPR) states that there currently are few economically feasible, non-pesticide alternatives for most of the pest problems for which these particular pesticides are used. Furthermore, many pests have developed resistance to pesticides that were previously effective. In conclusion, DPR states that burgeoning pest problems and a shortage of alternatives, chemical and non-chemical, sometimes present farmers with situations where they see no choice but to increase their use of pesticides. ¹⁵

Sonoma County ranked 18th out of the 58 California counties in total pounds of commercial ¹⁶ pesticide active ingredients as reported to the State in 2000 and 2001. ¹⁷ In 2000, the Sonoma County wine grape commodity accounted for 2,904,922 pounds, or 94 percent of gross pounds commercial chemicals applied, compared to the total Sonoma County commercial chemical use, including all other types of agriculture, landscape maintenance, right-of-way, and structural pest control in the county. In 2001, that total amount applied to vineyards was 2,451,380 pounds, or 96 percent of the county's total commercial chemical use. ¹⁸

¹⁴ Regional Water Quality Control Board, San Francisco Region 2, accessed online at <http://www.swrcb.ca.gov>, August 2003.

¹⁵ *An Analysis of Pesticide Use in California, 1991 -1995*, Larry Wilhoit, David Supkoff, John Steggall, Adolf Braun, Charlie Goodman, Bob Hobza, Barbara Todd, and Marshall Lee, California Department of Pesticide Regulation, Environmental Monitoring and Pest Management Branch and California Department of Food and Agriculture, Office of Pesticide Consultation and Analysis, 1998.

¹⁶ This discussion does not include household pesticides used, only commercially applied pesticides.

¹⁷ State Department of Pesticide Regulation data.

¹⁸ *PAN Pesticide Database*, Pesticide Action Network North America, [online] <http://www.pesticideinfo.org>, August 2003.

Exhibit 4.13-2 presents a summary of the grape pesticide use in Sonoma County from 1990 through 2001. It shows that the gross total pounds applied peaked in 1994, at 4,162,821; with each subsequent year a reduced amount of chemicals were applied. This occurred even though the acreage planted in vineyards has increased. Each separate category of pesticide also peaked in that year. Sulfur has decreased the least, as it is used more as part of IPM efforts. The carcinogen methy bromide applications have decreased the most, from 632,000 pounds in 1994 to 31,650 pounds in 2001. The third category of chemicals, called non-sulfur, has decreased in the same time period from 882,721 pounds approximately by 50 percent to 438,580 pounds. The Sonoma County Grape Growers Association (SCGGA) has been implementing a program to promote the use of IPM to monitor vineyard pests and disease and use lower risk pest management practices. The goal is to reduce the use of certain insecticides, fungicides, herbicides, and miticides targeted by the federal Food Quality Protection Act (FQPA). **Exhibit 4.13-3** shows a decline in the usage of some FQPA targeted chemicals in Sonoma County grape production from 1999 to 2000. The SCGGA IPM project is continuing. ¹⁹

Exhibit 4.13-2
Summary of Grape Pesticide Use in Sonoma County

Year	Total Applied (Lbs)	Sulfur (Lbs)	Methyl Bromide (Lbs)	Non-Sulfur (Lbs)	Acres	Percent Sulfur
1991	1,750,215	1,573,600	---	176,615	34,000	89.9
1992	2,032,400	1,523,600	---	508,800	34,500	75.0
1993	3,059,291	2,492,000	225,700	567,291	35,000	81.5
1994	4,162,821	3,280,100	632,000	882,721	35,700	78.8
1995	3,747,800	2,997,400	454,900	750,400	36,330	80.0
1996	3,355,000	2,705,200	428,300	649,800	38,399	80.6
1997	3,614,800	2,904,200	461,240	710,600	40,001	80.3
1998	3,512,900	3,031,300	193,700	481,600	44,681	86.3
1999	3,275,500	2,541,200	449,900	734,300	51,465	77.6
2000	2,904,900	2,321,500	132,159	583,400	55,877	79.9
2001	2,451,380	2,012,890	31,650	438,580	58,667	82.1

Source: Sonoma County Grape Growers Association

¹⁹ Nichols • Berman communication Nicholas Frey, Executive Director, Sonoma County Grape Growers Association, July, 2003; and *Pest Management Grants Final Report – Promotion of Vineyard Pest and Disease Monitoring and Reduced-Risk Pest Management Practices in Sonoma County*, Nicholas M. Frey, Sonoma County Grape Growers Association, California Department of Pesticide Regulation, February 27, 2002.

Exhibit 4.13-3
Food Quality Protection Act – Targeted Pesticide Usage in Sonoma County Grape Production

<i>Pesticide</i>	<i>FQPA Class</i>	<i>Pounds Used 1999</i>	<i>Acres Treated 1999</i>	<i>Pounds Used 2000</i>	<i>Acres Treated 2000</i>
<i>Insecticides</i>					
Dimethoate	Organophosphate	969	3,021	361	1,997
Diazinon	Organophosphate	635	1,143	55	143
Fenamiphos	Organophosphate	5,214	2,331	4,230	1,364
Carbaryl	Carbamate	897	504	613	584
<i>Fungicides</i>					
Mancozeb	Carcinogen	31,555	23,240	33,000	21,431
Iprodione	Carcinogen	4,024	4,923	1,499	1,892
<i>Herbicides</i>					
Simazine	Carcinogen	24,177	10,832	21,064	13,064
Oxyflurofen	Carcinogen	14,455	19,857	17,664	24,940
<i>Miticide</i>					
Propargite	Carcinogen	5,055	3,478	1,503	1,091
<i>Totals</i>		86,981	69,329	79,989	66,506

Source: Sonoma County Grape Growers Association; *Pesticide Use Reports*, State Department of Pesticide Regulation; and Federal Food Quality Protection Act (FQPA).

HOUSEHOLD HAZARDOUS MATERIALS

There are no data available to show how many county households contribute to pesticide pollution through the use of home landscaping products and other home activities and chemicals. There are a number of common household toxics found in the garage (antifreeze, motor oil, gasoline, waxes, auto batteries, brake fluid); in the workshop (paint, paint thinner, wood preservatives, glues, solvents, photo chemicals); in the house (ammonia and bleach cleaners, polishes, medications, syringes, batteries); and in the yard (pesticides, fungicides, weed killers, pool chemicals, pool backwash). Household hazardous materials also include an increasing amount of electronic waste, including computers and cell phones. Improper disposal of these wastes can result in potential toxic leachate at sanitary landfills, in storm drains, and in creeks and rivers. The Household Toxics Waste Facility at the County's Central Disposal Site is expected to open in 2005. The County has relied on Household Toxics Roundups and curbside oil pickups, among other programs, to keep toxics out of the regular landfill.

There is little known about how much household hazardous waste is generated annually. The County has estimated that, in 1990, 1,095 tons of household hazardous waste was disposed of, while in 1996, the amount was 1,797 tons. Over the five year period from 1998 to 2003, 91 percent of county households did not participate in the hazardous waste program. At the same time, the amount of household hazardous waste collected increased from 1,192, 578 pounds collected in 1998, to

2,260,660 pounds in 2003. A large number of new chemicals enter the waste stream, with no synergistic testing to indicate how chemicals react together. More materials not previously considered hazardous waste are now so characterized. The County is developing the infrastructure to allow the proper disposal of hazardous waste, though its effectiveness is not assured.²⁰

HAZARDOUS MATERIALS EMERGENCY RESPONSE

Hazardous materials emergency response is the responsibility of Sonoma County Department of Emergency Services (DES), Hazardous Materials Division. The Sonoma County Hazardous Materials Response Team, formed in 1994, is both paid and volunteer. This team is trained to respond to any level of hazardous materials incident in the county, including overturned tank trucks, fires involving hazardous materials and chemicals, incidents involving radioactive materials, downed electrical lines and ruptured natural gas lines, chlorine and toxic gas releases, fuel spills, and explosives and bombs. The DES Hazardous Materials Response Team maintains a response vehicle and trailer; both equipped with specialized equipment.

The County DES Hazardous Materials Division responds to hazardous materials incidents throughout the county and maintains contracts with some of the cities for hazardous materials releases within those cities. They maintain lists of large quantity hazardous waste generators (i.e., those that generate more than five tons per year.) There are two other hazardous emergency teams in the county: the City of Santa Rosa Fire Department and the City of Rohnert Park Department of Public Safety. The three teams in the county will respond to assist each other under the County's Mutual Aid agreement. The County DES coordinates with each of these city response teams when purchasing specialized equipment, upgrading equipment, and training. The County DES Hazardous Materials Division also maintains a contract with the Valley of the Moon Fire Protection District for decontamination services.

Hazardous Materials – Regulatory Setting

Hazardous materials are subject to numerous laws and regulations at all levels of government. Most hazardous materials regulation and enforcement in Sonoma County is managed by DES, as well as the Environmental Health Division of the County Department of Health. However, large cases of hazardous materials contamination or violations in Sonoma County are handled by the two California Regional Water Quality Control Boards (RWQCBs) and the California Department of Toxic Substances Control (DTSC).²¹

²⁰ Nichols • Berman communication with Lesli Daniel, Household Hazardous Waste Program Manager, Sonoma County Waste Management Agency, November, 2003; and *Countywide Integrated Waste Management Plan*, Sonoma County Waste Management Agency, October, 2003.

²¹ As with most regulations but especially true with hazardous materials the regulations are not easily distinguished as local, State or federal since various agencies will implement other agencies policies.

COUNTY REGULATIONS

Certified Uniform Program Agencies (CUPA)

The Unified Hazardous Waste and Hazardous Management Regulatory Program (SB 1082, 1993) is a State and local efforts to consolidate, coordinate, and make consistent existing programs regulating hazardous waste and hazardous materials management. Cal EPA adopted implementing regulations for the Unified Program²² in January 1996. The Unified Program is implemented at the local level by Certified Unified Program Agencies (CUPAs).

The Hazardous Materials Division of the DES is the CUPA for cities and unincorporated areas within Sonoma County. Through the division, the County regulates the use, storage, and disposal of commercial hazardous materials by issuing permits, inspecting facilities, and investigating complaints. The County issues permits for the installation and removal of underground storage tanks. It inspects businesses for compliance with the Hazardous Waste Control Act and also requires that businesses that handle hazardous materials and hazardous wastes submit a Hazardous Materials Business Plan (HMBP). The HMBP includes an inventory of hazardous materials and hazardous wastes, as well as a prepared emergency response to incidents involving applicable hazardous materials and wastes.

The County, along with the cities of Santa Rosa, Sebastopol, Petaluma, and Healdsburg, and the North Coast RWQCB and the San Francisco Bay RWQCB maintain files on existing dry cleaners and known dry cleaner sites where there are confirmed or suspected solvent discharges. If groundwater is impacted, the lead regulatory agency is the State of California through the local RWQCB. In this capacity, the RWQCBs are responsible for investigating and remediating the contaminated sites. The County Department of Health Services, Environmental Health Division, and DES are kept informed of actions and progress but otherwise are not involved. The cities of Santa Rosa, Sebastopol, Petaluma, and Healdsburg maintain this oversight responsibility within their jurisdictions under the CUPA requirements.

For the county unincorporated areas, the DES is the CUPA, except the Environmental Health Division implements the Local Oversight Program (LOP). The LOP oversees the investigation and cleanup of fuel releases from underground storage tanks in all areas of the county with the exception of the cities of Santa Rosa and Healdsburg. Sites are entered into the LOP when a release from an underground tank is reported. The site must be investigated and cleaned up in accordance with the State Underground Storage Tank Regulations, Sonoma County Program Guidelines for Site Investigation, and RWQCB water quality objectives. The LOP is authorized to regulate underground storage tank releases by the State Water Resources Control Board.

Sonoma County Hazardous Waste Management Plan

Assembly Bill 2948 established procedures for the preparation of county Hazardous Waste Management Plans (HWMP). The plan must be prepared in accordance with *California Health and Safety Code Section 24135 et seq.* Sonoma County prepared a *Hazardous Waste Management Plan*, adopted in 1989. The HWMP is intended to serve as the primary planning document for hazardous waste management within a County, and contains goals, policies, and recommended programs for the management, recycling, and disposal of hazardous wastes. The HWMP principally governs the coordination and planning of hazardous waste disposal capacity between the County and State. The

²² California Code of Regulations, Title 27, Division 1, Subdivision 4, Chapter 1.

California Department of Health Services must give its approval to the plan before the document becomes effective. The Sonoma County HWMP serves as the implementation program for management of hazardous waste in order to protect the health, safety, and property of residents.

Pesticides

The regulation of pesticide storage, application, and waste disposal is under the jurisdiction of the County Agricultural Commissioner; the Commissioner implements the Cal EPA Department of Pesticide Regulation (DPR) program. Since 1990 the Commissioner's office has compiled reports required of farmers and other users of agricultural pesticides which provide complete, site-specific documentation of every pesticide application. These requirements include pesticides used on parks, golf courses, cemeteries, rangeland and pastures, and along roadside and railroad rights-of-way. The reports are transferred to the DPR and entered into a statewide database.

Approximately 40 pesticide complaints are received annually by the Agricultural Commissioner's Office, half from nearby residents affected by agricultural spraying and the other half by those driving by on roadways where there is spraying. The Commissioner attempts to mediate complaints, as the office has no official jurisdiction.²³ Official jurisdiction with respect to pesticide complaints lies with the California Department of Pesticide Regulation.

Emergency Response

California has developed an Emergency Response Plan to coordinate emergency services provided by federal, State, and local government and private agencies. Response to hazardous materials incidents is one part of this plan. The plan is administered by the State Office of Emergency Services (OES), which coordinates the responses of other agencies including Cal EPA, the California Highway Patrol, California Department of Fish and Game (CDFG), the RWQCB, and the County Hazardous Materials Response Team of the DES.

The DES provides services in three areas that relate to hazardous materials. DES Emergency Management provides the primary level of coordination for emergency response, recovery, and mitigation activities following an emergency such as a hazardous materials release. DES Fire Services conducts hazardous materials inspections for businesses in Sonoma County and responds to "Haz Mat" incidents as part of the County Hazardous Materials Response Team. The DES Haz Mat Division is responsible for: the Hazardous Materials Business Management Plan Program, the Hazardous Waste Program, the Underground Tank Program, the Accidental Release Program, and parts of the Uniform Fire Code which address hazardous materials. A *Sonoma County Operational Area Hazardous Materials Incident Response Plan* addresses County and other agency response to releases of hazardous materials. The division also prepares the *Offshore Oil Spill Plan*.

County, Business, and Household Educational Programs

Educational and incentive programs encourage the use of source reduction and recycling, as well as reduced-risk pest management. The DES encourages County activities that reduce the use of hazardous materials and increase the use of safe alternatives. DES encourages County Fleet Operations to use water-based instead of petroleum-based cleaners, as well as using best management

²³ Nichols • Berman communication with Lisa Correia, Chief Deputy Agricultural Commissioner, Sonoma County Agricultural Commission, January 2003.

practices to reduce accidental spills and separate oil from water in vehicles wash-down areas. DES encourages the Sonoma County Water Agency to use alternatives to chlorine and sulphur dioxide at water treatment plants.²⁴

Other educational and incentive programs in Sonoma County include the Integrated Waste Management Agency's Household Hazardous Waste Program for residents and the DES Sonoma Green Business Program that targets businesses, including the automotive industry, graphics arts industry, and wineries.²⁵

STATE REGULATIONS

The State classifies hazardous materials and hazardous wastes according to four properties: toxicity, ignitability, corrosivity, and reactivity.²⁶ Toxicity, ignitability, corrosivity, and reactivity are defined in the California Code of Regulations (CCR), Title 22, Sections 66261.20 through 66261.24.

The CCR defines a hazardous material as a substance that, because of physical or chemical properties, quantity, concentration, or other characteristics, may either (1) cause an increase in mortality or an increase in serious, irreversible, or incapacitating, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of, or otherwise managed.²⁷

The Cal EPA unified the State's environmental authority under a single accountable, cabinet-level agency in 1991. The Secretary for Environmental Protection oversees the following State agencies: Air Resources Board, Integrated Waste Management Board, Department of Pesticide Regulation, State Water Resources Control Board (SWRCB), Department of Toxic Substances Control (DTSC), and Office of Emergency Services (OES). The Cal EPA and the OES of the State of California establish rules governing the use of hazardous materials. The SWRCB has the primary responsibility to protect water quality and supply.

Hazardous Substances Handling Requirements

Within Cal EPA, the DTSC has primary regulatory responsibility, with delegation of enforcement to local jurisdictions that enter into agreements with the State agency, for the generation, transport, and disposal of hazardous materials under the authority of the Hazardous Waste Control Law (HWCL). Regulations implementing the HWCL list approximately 791 hazardous chemicals and 20 to 30 more common substances that may be hazardous; establish criteria for identifying, packaging and labeling hazardous substances; prescribe management of hazardous substances; establish permit requirements

²⁴ *Public Safety Element- Hazardous Materials (Revision)*, CAC memo, List Posternak, Sonoma County PRMD, June 20, 2002.

²⁵ *Public Safety Element- Hazardous Materials (Revision)*, CAC memo, List Posternak, Sonoma County PRMD, June 20, 2002.

²⁶ California Code of Regulations, Title 22, Chapter 11, Article 3.

²⁷ California Code of Regulations, Title 22, Division 4.5, Chapter 10, Article 2, Section 66260.10

for hazardous substances treatment, storage, disposal, and transportation; and identify hazardous substances that cannot be deposited in landfills.

Under both the Resource Conservation and Recovery Act and the HWCL, the generator of a hazardous substance must complete a manifest that accompanies the waste from the point of generation to the ultimate treatment, storage or disposal location.²⁸ The manifest describes the waste, its intended destination, and other regulatory information about the waste. Copies must be filed with the DTSC. Generators must also match copies of waste manifests with receipts from the treatment, storage, or disposal facility to which it sends waste.

Groundwater Contamination

Acting through the RWQCBs, the SWRCB regulates surface and groundwater quality pursuant to the Porter-Cologne Water Quality Act, the federal Clean Water Act, and the Underground Tank Law. Under these laws, RWQCB is authorized to supervise the cleanup of hazardous wastes sites referred to it by local agencies in those situations where water quality may be affected.

Depending on the nature of the contamination, the lead agency responsible for the regulation of hazardous materials at the site can be the DTSC, RWQCB, or both. DTSC evaluates contaminated sites to ascertain risks to human health and the environment. Sites can be ranked by DTSC or referred for evaluation by the RWQCB. Cal EPA (DTSC) and the State Department of Occupational Health and Safety are the agencies that are responsible for overseeing that appropriate measures are taken to protect workers from exposure to potential groundwater contaminants.

Because of the potential to impact groundwater, State laws govern the design, construction, and management of USTs and their related piping and dispensing systems. CCR Title 22 governs protection of the groundwater within the State of California. Owners of USTs must obtain permits from DES for new tanks, pulling old tanks, repairing tank systems, or testing tank systems. Leaking fuel tank systems that have been found to impact groundwater resources in Sonoma County come under the enforcement jurisdiction of the State of California (i.e., either the North Coast RWQCB or the San Francisco Bay RWQCB). If leaks are detected through the County's oversight, Regional Board staff requires that investigations be done, pollutant sources be removed, necessary cleanup be done, and that groundwater be monitored. In addition, where underground tanks leak chlorinated solvents (e.g., PCE, TCE, etc) which are associated with dry cleaners, industrial sites and automotive repair facilities) or the groundwater is otherwise impacted by such hazardous materials, the RWQCB staff are the lead enforcers.

The North Coast RWQCB recently adopted more stringent waste discharge requirements for winery wastewater treatment and disposal systems applicable both to surface and subsurface systems. This responds to changes in State law and the increasing acreage devoted to vineyard production in the north coast region.

Hazardous Materials Transportation

To protect the public and the environment during the transportation of hazardous waste, stringent State and federal regulations about container packaging and labeling, vehicle identification and manifesting have been established. California law requires that hazardous waste (as defined in California Health

²⁸ See *Federal Regulations* for a description of the Resource Conservation and Recovery Act (RCRA).

and Safety Code Division 20, Chapter 6.5) be transported by a California registered hazardous waste transporter that meets specific registration requirements. The requirements include possession of a valid Hazardous Waste Transporter Registration, proof of public liability insurance which includes coverage for environmental restoration, and compliance with California Vehicle Code registration regulations required for vehicle and driver licensing. A complete list of requirements can be found in Title 22 CCR, Chapter 13.

State agencies with primary responsibility for enforcing federal and State regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol and Caltrans. Together, these agencies determine container types used and license hazardous waste haulers for hazardous waste transportation on public roads. On State highways, Sonoma County can request a restriction on the hours of transport of nuclear wastes, but these restrictions must be approved by the California Highway Patrol.²⁹

Databases

There are numerous databases maintained by various federal, State, and local agencies that list and track hazardous waste sites, releases or spills, or shipments of hazardous materials. Databases are searched as part of Phase I / II Environmental Site Assessments.³⁰

FEDERAL REGULATIONS

Federal regulatory agencies include the US Environmental Protection Act (U.S. EPA), Occupation Health and Safety Administration (OSHA), the Nuclear Regulatory Commission (NRC), the Department of Transportation (DOT), and the National Institute of Health (NIH). The following represent federal laws and guidelines governing hazardous substances:

- Federal Water Pollution Control Act
- Clean Air Act
- Occupational Safety and Health Act
- Federal Insecticide, Fungicide, and Rodenticide Act
- Comprehensive Environmental Response Compensation and Liability Act
- Guidelines for Carcinogens and Biohazards
- Superfund Amendments and Reauthorization Act Title III
- Resource Conservation and Recovery Act
- Safe Drinking Water Act
- Toxic Substances Control Act

At the federal level, the principal agency regulating the generation, transport, and disposal of hazardous substances is the US EPA, under the authority of Resource Conservation and Recovery Act (RCRA). The US EPA regulates hazardous substance sites under the Comprehensive Environmental

²⁹ *Public Safety Element- Hazardous Materials- Transport of Nuclear Waste*, CAC memo, Lisa Posternak, Sonoma County PRMD, July 14, 2002.

³⁰ These assessments are to identify potential environmental liabilities on project sites resulting from existing or historic environmental hazards. Such Phase I / II assessments are done as part of Environmental Impact Reports in California.

Response Compensation and Liability Act (CERCLA). Applicable federal regulations are contained primarily in Titles 29, 40, and 49 of the Code of Federal Regulations (CFR).

Hazardous Substances Handling Requirements

The RCRA established a federal hazardous substance “cradle-to-grave” regulatory program that is administered by the U.S. EPA. Under RCRA, the U.S. EPA regulates the generation, transportation, treatment, storage, and disposal of hazardous substances. The RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the “cradle-to-grave” system of regulating hazardous substances. The HSWA specifically prohibits the use of certain techniques for the disposal of some hazardous substances. Under the RCRA, individual states may implement their own hazardous substance management programs as long as they are consistent with, and at least as strict as, RCRA. The U.S. EPA must approve State programs intended to implement the RCRA requirements.

Superfund Hazardous Waste Sites

The CERCLA, commonly referred to as Superfund, was enacted on December 11, 1980. The purpose of CERCLA was to provide authorities the ability to respond to uncontrolled releases of hazardous substances from inactive hazardous waste sites that endanger public health and the environment. CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at such sites, and established a trust fund to provide for cleanup when no responsible party could be identified. In addition, CERCLA provided for the revision and republishing of the National Contingency Plan (NCP) that provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The NCP also provides for the National Priorities List, a list of national priorities among releases or threatened releases throughout the United States for the purpose of taking remedial action.

The Superfund Amendments and Reauthorization Act (SARA) amended CERCLA on October 17, 1986. This amendment increased the size of the Hazardous Response Trust Fund, expanded U.S. EPA’s response authority, strengthened enforcement activities at Superfund sites; and broadened the application of the law to include federal facilities. Two superfund sites in Sonoma County have been cleaned up.³¹ In addition, new provisions were added to the law that dealt with emergency planning and community right to know. SARA also required U.S. EPA to revise the Hazard Ranking System to ensure that the HRS accurately assesses the relative degree of risk to human health and the environment posed by sites and facilities subject to review for listing on the NPL.

Hazardous Materials Transportation

Two federal agencies regulate the transport of radioactive materials. The Nuclear Regulatory Commission (NRC) regulates the transport of spent nuclear fuel. The U.S. Department of Transportation (DOT) regulates the transport of radioactive materials through the Federal Motor Carrier Safety Administration. In addition, the DOT regulates the interstate transport of hazardous materials and wastes through implementation of the Hazardous Materials Transportation Act. This act specifies driver training requirements, load labeling procedures, and container design and safety

³¹ *Cleanup Sites in California*, US Environmental Protection Agency, accessed online at <http://www.epa.gov/region9/cleanup/california.html>, May 27, 2005.

specifications. Transporters of hazardous wastes must also meet the requirements of additional statutes such as RCRA. Transportation regulations on the federal level are implemented on the state level.³²

Hazardous Materials – Significance Criteria

According to the *State CEQA Guidelines*, the project would have a significant hazardous materials impact if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- Be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, resulting in a safety hazard for people residing or working in the project area;
- Be located within the vicinity of a private airstrip, resulting in a safety hazard for people residing or working in the project area; or
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment. **No significant impact, see Appendix 7.4 Initial Study.**

Hazardous Materials – Impacts and Mitigation Measures

Impact 4.13-1 Release of Hazardous Materials

Land uses and development consistent with the Draft GP 2020 could result in the transport, use, and / or disposal of hazardous materials, which could result in exposure of such materials to the public either through routine use or due to accidental release. The Draft GP 2020 includes policies that would address the hazards associated with new land uses and development. This would be a less-than-significant impact. (LTS)

Land uses and development consistent with the *Draft GP 2020* would allow new agriculture, residential, commercial, and industrial uses. As a result, more hazardous materials would be

³² *Public Safety Element – Hazardous Materials – Transport of Nuclear Waste*, memo to CAC, Lisa Posternak, Sonoma County PRMD, July 18, 2002.

transported, used, and disposed of within the county. Transport of hazardous materials, while heavily regulated, involves the risk of spills or leaks due to accidents or improper use or handling.

Increased residential development would result in an increased use, storage, and disposal of household hazardous materials within the county. In residential settings hazardous materials are typically used by individuals without extensive training in the use, storage, and disposal of those materials which could result in accidental releases into the water or sewer system.

Increased commercial and industrial development would also result in increased use, storage, and / or disposal of hazardous materials as part of their operations. Of particular concern are facilities with underground storage tanks or other methods of storage that could be impaired during a seismic event or could otherwise accidentally leak into the soil, water, or air. Such facilities include gas stations, automotive repair shops, and dry cleaners. Groundwater could become contaminated from these impairments.

New agricultural operations would also increase the usage, storage, and disposal of hazardous materials. Although the viticulture industry is taking steps to curb its usage of these materials, it would likely remain dependent upon such materials throughout the foreseeable future.

The *Draft GP 2020* includes several policies, which if adopted and implemented could be used to reduce the potential for a hazardous materials release. Goal **PS-4** and its associated objectives (**PS-4.1** and **PS-4.2**) and policies (**PS-4a** through **PS-4o**) would continue to reduce the exposure of people to hazardous substances. In particular, the associated policies would do so by implementing State and County requirements that relate to the storage, transport, use, and disposal of hazardous materials; maintaining an inventory of hazardous materials sites; requiring permits for commercial and industrial uses that could involve hazardous materials, thus allowing oversight of such materials as noted above; regulating the transportation of hazardous materials to the extent allowed by law; establishing a hazardous materials advisory group and management plan, thus providing for public information and emergency response preparedness; keeping hazardous waste processing facilities out of areas known to be subject to natural hazards and residential areas, thus protecting persons from accidental releases due to natural hazards and protecting residences from any accidental releases; siting hazardous waste processing facilities in proximity to hazardous waste producers and users, thus reducing the risk of exposure during transportation; promoting the Sonoma County Waste Management Authority's Household Hazardous Waste Program, thus reducing the possibility of improper disposal of household hazardous wastes; promoting educational programs that could reduce the use and exposure of hazardous materials in residences, businesses, and County operations; and reducing the use of toxic pesticides in County operations and encouraging others to do so as well.

These policies, in addition to the current programs and regulations discussed in the environmental setting, would continue to reduce the potential for hazardous materials release as well as reduce the potential for damage or loss from a hazardous materials release. As a result, this would be a less-than-significant impact.

Mitigation Measure 4.13-1 None required.

Impact 4.13-2 Hazardous Materials, Substances, or Waste near School Sites

Land uses and development consistent with the Draft GP 2020 could result in the increased exposure to hazardous materials in the vicinity of schools. This would be a significant impact.
(S)

As described in the environmental setting section, above, there are a large number of hazardous waste generating sites and treatment, storage, and disposal facilities in the county. The number of such sites and facilities has increased in the past decade and could reasonably be expected to continue to increase. Land uses and development consistent with the *Draft GP 2020* could result in the use of hazardous materials within one-quarter mile of existing schools, either at the location of an industrial use that relies upon hazardous materials or at a hazardous waste site. In addition, commercial and industrial expansion could increase the volume of hazardous materials and hazardous wastes used and generated in the county, potentially adjacent to school sites. Furthermore, new schools could be located in the vicinity of existing sites where significant quantities of hazardous materials may be present.

The *Draft GP 2020* policies discussed in *Impact 4.13-1 Release of Hazardous Materials* would reduce the potential for a hazardous materials release in the vicinity of a school site. However, these policies would not restrict the siting of facilities that may use substantial quantities of hazardous materials or facilities in which the primary purpose would be the handling of hazardous waste. Furthermore, there are no policies in the *Draft GP 2020* that would reduce the possibility that new schools would be located near existing hazardous materials sites. The siting of new schools is the responsibility of the applicable district and / or the State. Therefore, this would be a significant impact.

Mitigation Measure 4.13-2(a) Add a new policy to the Public Safety Element as follows:

Policy PS-4p: Avoid siting of hazardous waste repositories, incinerators, facilities that use a substantial quantity of hazardous materials, or other similar facilities intended primarily for hazardous waste disposal within one-quarter mile of an existing or proposed school facility.

Mitigation Measure 4.13-2(b) Add a new policy to the Public Safety Element as follows:

Policy PS-4q: Work with School Districts to avoid siting of schools within one-quarter mile of hazardous waste repositories, incinerators, facilities that use a substantial quantity of hazardous materials, or other similar facilities intended primarily for hazardous waste disposal.

Significance after Mitigation Adoption and implementation of the policies as outlined in Mitigation Measure 4.13-2(a) and 4.13-2(b) would assure that no new facilities involving significant quantities of hazardous substances would be developed within one-quarter mile of a school facility. This would reduce the impact to a less-than-significant level. (LTS)

Responsibility and Monitoring The Board of Supervisors would be responsible for adopting the policies proposed in Mitigation Measures 4.13-2(a) and 4.4-13-2(b) as part of the *GP 2020*. The PRMD and the DES would be responsible for monitoring implementation.

Impact 4.13-3 Hazardous Materials near Airports

Land uses and development consistent with the Draft GP 2020 in the vicinity of public use airports or private airstrips could expose people to accidents involving hazardous materials. Current policies and plans, carried forward in the Draft GP 2020 would address these hazards. This would be a less-than-significant impact. (LTS)

Implementation of the *Draft GP 2020* could result in land uses and development located near the six public use airport located within Sonoma County that involve the use of hazardous materials. In addition, there is a possibility, although unlikely, that these uses could be located near private airstrips. The latter would be unlikely due to the remote location and rural nature of the environs of these airstrips and is not therefore considered significant. However, some of the public use airports are located near industrial or commercial lands that could include businesses that utilize hazardous materials. The location of land uses utilizing significant quantities of hazardous materials near airports raises the possibility that aircraft accidents could result in explosions, fire, or other occurrences that could cause the release of these materials and subsequent exposure of employees and other people to harm.

Development in the vicinity of these airports would be subject to discretionary review as well as review by the Sonoma County Airport Land Use Commission. Projects would be required to comply with the Commission's adopted *Comprehensive Airport Land Use Plan* (CALUP). The CALUP provides safety, noise, and compatibility standards that reduce the likelihood of accidents affecting land uses on the ground. As a result, this would be a less-than-significant impact.

Mitigation Measure 4.13-3 None required.