San Mateo County Hazardous Waste Management Plan

Draft

January 1989

Approved by the
Hazardous Waste Management Plan
Advisory Committee

Tom Huening, Chair (Board of Supervisors)
Mark Green, Vice Chair (Industry Representative)
John Bostic (Cities with Hazardous Waste Management Facilities Representative-East Palo Alto)
Jack Drago (City Representative-South San Francisco)
Anna Eshoo (Board of Supervisors)
Rhio Martinson (City Representative-Foster City)
Frank Pagliaro (City Representative-Burlingame)
Diane Van Schoten (Public Representative)
Hector Villalba (Small Business Representative)
Kristina Wood (Environmental Representative)

Authorized for
Transmittal to the Cities
of San Mateo County
by the Board of Supervisors

William J. Schumacher, President
Mary Griffin
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Tom Nolan

San Mateo County ▪ California

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Introduction and Summary

INTRODUCTION AND SUMMARY

INTRODUCTION

The high quality of life and economic prosperity that is characteristic of California is dependent, in part, upon the production and use of manufactured goods. One consequence of the production and use of such goods is the generation of hazardous waste. Hazardous waste ranges from familiar substances, such as waste oil and solvents, to more specialized compounds, such as PCB's and dioxin. California's present system for managing hazardous waste relies heavily on land disposal of untreated hazardous waste. This approach has proven an unacceptable method of hazardous waste management, and will be prohibited in California by 1990. As an alternative to land disposal, treatment technologies exist whereby hazardous waste can be recycled or rendered less hazardous in carefully controlled industrial-type facilities which pose no greater risks than many existing manufacturing processes.

An effective strategy for managing hazardous waste should encompass a hierarchy of approaches. The preferred form of hazardous waste management is waste reduction. This involves either reducing the amount of waste being produced or recycling it back into the manufacturing process. Once hazardous waste is produced and cannot be recycled or reused, treatment then becomes the next preferred form of hazardous waste management. There are three general means of treating hazardous waste: physical treatment, chemical treatment and biological treatment. Each of these methods can significantly reduce hazardous waste volumes, although a small amount of remaining waste does result in each case. Such wastes, called "residuals," are then contained in a specifically engineered facility known as a "residual repository."

Throughout the State, siting hazardous waste management facilities has become a constraint to effective hazardous waste management. This is primarily due to vigorous public opposition and the ability of local government to reject needed facilities for reasons other than technical safety. In response, the State legislature in 1986 enacted AB 2948, known as the Tanner Bill. This legislation is the culmination of a lengthy study by the California Hazardous Waste Management Council which concluded that hazardous waste management is a responsibility which must be shared by all communities, and that (1) a comprehensive planning effort must be undertaken at the local level to identify the need for the location of feasible sites for hazardous waste facilities, and (2) the State should be granted limited power to approve projects rejected at the local level. The Tanner Bill assures these ends by establishing both a planning process for counties to prepare comprehensive local hazardous waste management plans, and a limited appeals process for local decisions on hazardous waste management facilities. The local plan will ultimately be incorporated into a Statewide hazardous waste management system. The facilities provided for by this plan would involve carefully controlled industrial operations that pose no greater risks to a community than many of the manufacturing processes currently found in industrial zones throughout the County.

A less certain component of the San Mateo County waste stream are wastes generated by small quantity generators (small businesses and households generating less than 12 tons per year). These wastes become of key concern when disposed of improperly, e.g., in a municipal landfill or sewer. Calculated estimates indicate that in 1986, 12,345 tons of hazardous waste were generated by small businesses, and 6,345 tons of hazardous waste were generated by households. A similarly uncertain component of the County's hazardous waste stream are those wastes which are generated and managed on-site, i.e., at the firm in which they were generated. In 1986, 125,138 tons are known to have been treated on-site. Figure 1.1 provides a basic illustration of the hazardous waste stream in San Mateo County, based on the most accurate data available.

Existing Management Capacity

Although three permitted commercial facilities in the County accepted waste from off-site generators in 1986, only one remains in operation today--Romic Chemical Corporation--a chemical recycler located in East Palo Alto. Romic maintains a current operating capacity of 58,800 tons.

Existing Need for New Facilities

Determination of the County's current need for new treatment capacity involves a comparative examination of: (1) the capacity required to treat wastes currently being generated in the County, and (2) the capacity currently available from existing treatment facilities in the County. While generating 35,490 tons of hazardous waste and at the same time providing 58,800 tons of treatment capacity, San Mateo County is exceeding its current "fair share" responsibility for hazardous waste management.

Projected Waste Generation

In the year 2000, San Mateo County is projected to generate approximately 55,025 tons of hazardous waste, of which 83% will be from commercial and industrial sources, 13% from household sources, and 4% from clean-up activities. Waste reduction activities, i.e., source reduction and on-site recycling, could potentially reduce the commercial/industrial waste generation by 10-40%.

Projected Management Capacity and Need for New Facilities

Romic Chemical Corporation has planned to expand its operating capacity to 95,480 tons by the year 2000. In addition, Quicksilver Products, Inc., an existing mercury recycler in Brisbane (with permits pending) will maintain an operating capacity of one ton. Determination of the County's future need for new treatment capacity involved comparing projected waste generation (55,025 tons) by the year 2000 with the treatment capacity that Romic and Quicksilver will be providing (95,481 tons), and concluding that San Mateo County will be exceeding its "fair share" responsibility for treatment capacity with a 40,456 ton capacity surplus.

Because San Mateo County is projected to meet its fair-share responsibility, the plan will not require the County or its constituent cities to approve new treatment facilities. However, this does not prohibit the County or a city

from approving new treatment facilities to meet regional or statewide needs. In fact, the plan encourages the location of new facilities within the County by (1) providing siting criteria and a generalized siting map to determine suitable areas for hazardous waste management facilities, and (2) requiring that the siting criteria be incorporated into local regulations.

An application has recently been submitted to the State Department of Health Services by Redwood City Services Corporation to develop an oil recovery facility in Redwood City. The proposed facility is intended to separate certain hydrocarbons, water, and solids from contaminated petroleum products, and would have a design capacity of 90,000 tons/year.

Siting Facilities

The plan provides a comprehensive guide for the siting of hazardous waste management facilities in San Mateo County. This includes siting criteria and a map identifying general areas that initially appear suitable for locating new facilities. The criteria and map are intended for use by facility developers when seeking suitable sites in San Mateo County.

Although the plan will be used as an initial basis for determining the suitability of an area, site specific risk assessments will also be required prior to facility approval. A risk assessment involves a comprehensive evaluation of the short and long-term risks associated with the development of a new facility at a specific location in a community. If the risk assessment process reveals that potential risks cannot be adequately mitigated, a proposed site may be disapproved, even though it may be located within a general area that has been designated as potentially suitable for the siting of facilities.

In general, the siting criteria direct facility development away from areas with significant natural hazard potential, environmental resources or population concentrations, and toward industrial areas near transportation corridors and hazardous waste generating sources. Relative suitability is expressed on the general areas map according to a high or low ranking system. The County's siting criteria will allow for a full range of hazardous waste management facilities, with the exception of residual repositories (because of soil permeability requirements). Generally, (1) all facilities, including incinerators, are considered suitable in industrial zones on the Bayside which are either vacant or predominantly developed with hazardous waste generators, and are most distant from residential zones; while (2) all facilities, excluding incinerators, are considered suitable in many of the remaining industrial areas of the Bayside; and (3) transfer and storage only facilities are considered suitable in commercial areas developed with hazardous waste generators and select park and open space lands throughout the County, as well as industrial areas on the Coastside.

Waste Reduction

The optimal form of hazardous waste management includes: (1) source reduction (i.e., actually reducing the amount of wastes being generated by either substituting alternative raw materials or altering the production process); and (2) on-site recycling (i.e., reusing the generated waste in the production process or as a marketable product). The plan analyzes techniques associated with each method, as well as the opportunities and constraints for government

The plan describes a set of program options which could be pursued. These include:

1. Preparing and distributing information brochures which would (a) inform businesses of the legal requirements for proper management of hazardous waste, and (b) inform households of disposal options and alternatives to household hazardous waste.

2. Establishing a semi-permanent household hazardous waste transfer station which operates on a regular basis, at a conveniently located site, and incorporates waste segregation and recycling measures.

3. Striving to establish a permanent household hazardous waste transfer station and/or neighborhood or areawide collection program, which could include a curbside collection service.

In mid-1989, the County will be establishing a semi-permanent household hazardous waste transfer station, to operate on a regular basis.

Contaminated Sites

Contaminated sites are known to exist in San Mateo County, where hazardous waste has been allowed to infiltrate into the soil and groundwater supply. The sites range from those with leaking underground storage tanks to those with abandoned disposal facilities such as evaporation ponds or landfills. The plan identifies seven contaminated sites within the County which are associated with past disposal practices. In addition, there are approximately 200 cases involving leakage from underground storage tanks which are related to recent or ongoing operations. These sites are in various stages of clean-up through efforts of the County Department of Health, in coordination with the State Department of Health Services, the San Francisco Regional Water Quality Control Board, and affected property owners.

To avert future leakage incidents, the County has adopted an ordinance regulating storage of hazardous substances in underground tanks. Other local efforts endorsed by the plan include the County continuing its integral role in the timely and effective clean-up of known contaminated hazardous waste sites through coordination with relevant federal, state and regional agencies, and establishing a program, as mandated by State law, to require public disclosure of known contaminated hazardous waste sites in the County prior to time of development.

Transportation Routes

Truck transport is the primary form of hazardous waste movement within San Mateo County. Hazardous waste transit within the County is the result of both local and out-of-County waste generation. Since San Mateo County is both an exporter and importer of hazardous waste and provides a key transportation link in the region, the potential for accidental release of wastes while in transit is a significant concern. Of the approximately 210 miles of freeways, expressways and highways in the County, the Bayshore Freeway (U.S. Route 101) is the most heavily traveled in terms of truck traffic, and traverses the major industrial areas of the County. Congestion occurs along many arterials

4. Improving upon existing efforts to investigate and prosecute violators of hazardous waste laws.

5. Promoting waste reduction through measures including:

   a. Preparing a waste reduction informational brochure.

   b. Sponsoring waste reduction seminars and a public recognition program.

   c. Establishing waste reduction resource centers in select public libraries.

   d. Providing waste reduction referral assistance.

6. Assisting small quantity generators through measures including:

   a. Preparing informational brochures aimed at small businesses and households.

   b. Establishing a semi-permanent household hazardous waste transfer station.

The estimated aggregate cost for implementing the plan's policies range between approximately $300,000 and $400,000 per year. These costs are intended to be shared by the County and the cities within the County.

A funding allocation formula has been developed which determines the proportionate contribution for each jurisdiction in the County. The formula is based on relative population, hazardous waste generation (number of firms and tonnage), and existing treatment capacity per jurisdiction. An unspecified portion of the costs may be offset by fines and penalties derived from hazardous waste management law violations.

EXISTING HAZARDOUS WASTE GENERATION

Throughout the developed Bayside corridor of San Mateo County, there are approximately 3,000 firms which manufacture, use, store or transport hazardous materials. Approximately one-third of these utilize a significant amount of hazardous material in their daily commercial and industrial operations. The predominant industry types include metal fabrication, manufacture of electrical and electronic equipment, chemicals, paints, varnish, lacquer, enamels and allied products. As a by-product of these industrial or manufacturing operations, many of the firms also generate hazardous waste. In addition, a substantial amount of hazardous waste is generated by small commercial businesses, e.g., service stations, auto repair shops, and dry cleaners, as well as residential households.

In recent years, the County Health Department and State Department of Health Services have focused their efforts toward securing a comprehensive understanding of hazardous waste generation. The intent of this section of the Hazardous Waste Management Plan is to quantify the existing (1986) hazardous waste stream in San Mateo County utilizing available hazardous waste generation data sources. This information will be formatted to allow focused attention on different components of the waste stream, including major industry groups, small quantity generators, wastes that are either managed on the premises or transported off site to a treatment or disposal facility, as well as wastes managed within the County and those exported for treatment or disposal elsewhere in the State. The data will be utilized to: (1) determine the need for additional hazardous waste management capacity in San Mateo County, and (2) provide a baseline for future hazardous waste reduction activities. Data collection and interpretation will be an ongoing process whereby more refined and representative information is expected from each successive revision to the plan.

This plan does not preclude the incorporation of new waste groups (e.g., infectious waste) or enhanced analysis of selected waste streams (e.g., out-of-state shipments, pre-treatment sludges, etc.) in future amended editions of the document.

COUNTYWIDE GENERATION/MANAGED OFF-SITE

1. Manifest Data Sources

   a. Base Manifest Data

      Hazardous waste may be treated or disposed of on the site where it is generated, or transported to an off-site facility for treatment, storage or disposal. The quantities of waste which are transported off site can be viewed as a measure of the County's demand for management capacity. Data for this section was derived from the State "manifest system." The manifest system is a monitoring process which tracks the transport of hazardous waste from point of generation to the ultimate off-site management facility. Manifest data is detailed with respect to waste type and tonnage amounts, and recognized as the most accurate

data source available for hazardous waste management planning. Review of 1986 manifest data indicates that 65,289 tons of hazardous waste were generated in San Mateo County for treatment or disposal at an off-site facility, either within the County or elsewhere in the State. The first column of Table 7-1 organizes these wastes according to waste group.

There are minor discrepancies which exist between data presented in Table 7-1 and the 1986 manifest summary. These are due to County efforts which identified: (1) firms generating waste in San Mateo County which were erroneously assigned to another County's manifest summary, (2) firms located in another county but erroneously included in the San Mateo County summary, and (3) firms which transported waste under manifest, but were not included in the 1986 summary sent to the County.

b. Correction for "Modified Manifest" Data

Certain hazardous wastes, predominantly solvents, non-metallic inorganic liquids and waste oil, may be transported under a "modified manifest" procedure, i.e., a method that does not require detailed manifest reporting. Use of the less detailed reporting system necessitated certain corrections to the hazardous waste generation data base. In particular, the State Department of Health Services informs that approximately 313 tons of hazardous waste liquid were generated in San Mateo County and transported under modified manifest to facilities located outside the County. Due to the modified manifest reporting technique, these wastes were not attributed to San Mateo County and therefore an upward correction of the data is necessary, as reflected in the second column of Table 7-1.

In addition, communication with Bay Area oil transport firms indicate that: (1) approximately 30,509 tons of waste oil were imported into San Mateo County; however, due to the modified manifest reporting system, this oil was attributed to San Mateo County waste generation; and (2) approximately 1,310 tons of waste oil were exported from the County; however, due to the modified manifest reporting system, this oil was not attributed to San Mateo County waste generation. This results in a net 29,199 tons downward adjustment to the manifest data as reflected in the second column of Table 7-1.

More specifically, three waste oil "route service hauler" firms operated in San Mateo County (1986) using the "modified manifest" procedure: (1) California Oil Recyclers, (2) Bayshore Oil Company, and (3) Bay Area Oil Recycling. Through communication with each operator, it was detemined that: (1) California Oil Recyclers imported 92% of the total amount of waste oil it manifested as San Mateo County waste, (2) Bayshore Oil Company imported 42% of the total amount of waste oil it manifested as San Mateo County waste, and (3) Bay Area Oil Recycling imported 71% of the total amount of waste oil it manifested as San Mateo County waste. A more detailed analysis of the waste oil stream associated with route service haulers in San Mateo County appears as Table 7-2.

TAI 7-1

EXISTING HAZARDOUS WASTE GENERATION/MANAGED OFF SITE (1986)

WASTE GROUP	AMOUNT FROM MANIFEST DATA SOURCES[1] (Tons/Year)	CORRECTION DUE TO MODIFIED MANIFEST REPORTING TECHNIQUE[2] (Tons/Year)	CORRECTION DUE TO TRANSFER STATION[3] STORAGE (Tons/Year)	ADJUSTED TOTAL (Tons/Year)
Waste Oil	36,410	(-29,199)	(-795)	6,416
Halogenated Solvents	639	(+55)	(-29)	665
Non-Halogenated Solvents	10,440	(+254)	(-70)	10,624
Organic Liquids	473	0	(-5)	468
Pesticides	2,429	0	0	2,429
PCB's and Dioxins	903	0	0	903
Oily Sludges	1,820	0	(-1)	1,819
Halogenated Organic Sludges and Solids	14	0	0	14
Non-Halogenated Organic Sludges and Solids	1,670		(-7)	1,663
Dye and Paint Sludges and Resins	1,097	0	(-1)	1,096
Metal-Containing Liquids	1,183	0	0	1,183
Cyanide and Metal Liquids	7	0	0	7
Non-Metallic Inorganic Liquids	1,054	(+4)	(-4)	1,054
Metal-Containing Sludges	150	0	0	150
Non-Metallic Inorganic Sludges	1,519	0	0	1,519
Contaminated Soil	2,366	0	0	2,366
Miscellaneous Wastes	3,115	0	(-1)	3,114
TOTAL	**65,289**	**(-28,886)**	**(-913)**	**35,490**

[1]Minor discrepancies exist between data reflected in this column and in the 1986 manifest summary due to County efforts which identified: (1) firms generating waste in San Mateo County which were erroneously assigned to another county's manifest summary, (2) firms located in another county but erroneously included in the San Mateo County summary, and (3) firms which transported waste under manifest but were not included in the 1986 summary sent to the County.

[2]Explanation for corrections made in this column appear on page 7.2.

[3]Explanation for corrections made in this column appear on page 7.5.

TABLE 7-2

WASTE OIL GENERATION BY ROUTE SERVICE HAULERS IN SAN MATEO COUNTY (1986)

HAULER	AMOUNT OF WASTE OIL (221) SHOWN IN SAN MATEO COUNTY MANIFEST SUMMARY (TONS)	AMOUNT OF WASTE OIL (221) ACTUALLY GENERATED IN SAN MATEO COUNTY (TONS)	PERCENTAGE (%)
California Oil Recyclers	32,019	2,667	(8.3%)
Bayshore Oil Company	1,413	814	(57.6%)
Bay Area Oil Recycling	791	329	(29.0%)
TOTAL	**34,223**	**3,710**	**(10.8%)**

c. Correction for Hazardous Waste Shipped to Transfer Stations for Temporary Storage

In 1986, approximately 913 tons of hazardous waste generated for off-site management were shipped to a "transfer station" in the County for temporary storage before reshipment to a facility for treatment or disposal. Wastes shipped to a transfer station before being shipped onward to a final destination are recorded twice in the State manifest system, and therefore "double counting" occurs. Table 7-1 corrects for the double counting by subtracting out transfer station waste volumes.

d. Adjusted Manifest Data

After adjusting for modified manifest reporting and transfer station storage, approximately 35,490 tons of hazardous waste was transported to off-site facilities in 1986.

e. Generalized Treatment Method for Each Waste Group

Table 7-3 identifies the primary treatment method for each waste group of the 35,490 tons generated for off-site management in 1986.

f. Survey Questionnaire

The State Department of Health Services requires that the plan use the manifest data information when documenting off-site hazardous waste generation. However, to augment or expand upon this information source, staff has prepared a survey questionnaire which has been distributed to approximately 53 known generators of hazardous waste in San Mateo County, including the 20 largest generators identified by the State manifest (greater than 75 tons/year). The survey questionnaire is found in the Appendix.

The response rate among the large quantity generating firms was 14/20 or 70%. The deviation, on average, between waste reported in the survey and that in the manifest was approximately $\pm$35%. Explanations include: (a) use of 1987, rather than 1986, data in the survey, (b) reporting net, rather than total, waste generation due to repurchase of recycled wastes, (c) omitting certain wastes from the survey due to a perceived inapplicability, (d) maintaining incomplete records, or (e) incomplete manifest reporting due to "suspense file" data separation.

2. Principal Waste Generating Firms

Manifest information sources indicate that approximately 77 percent of the hazardous waste generated in San Mateo County for off-site treatment and disposal is generated by just 15 firms. This is not uncommon as a very small number of companies are typically responsible for generating the majority of the hazardous waste in an area. Therefore, an understanding of the top generators' needs and operations can facilitate a responsive waste reduction program and an improved forecasting of future waste generation.

TABLE 7-3

GENERALIZED TREATMENT METHOD FOR EACH WASTE GROUP (1986)

WASTE GROUP	ADJUSTED TOTAL (Tons/Year)	GENERALIZED TREATMENT METHOD (Primary)[1]
Waste Oil	6,416	Oil Recovery
Halogenated Solvents	665	Solvent Recovery
Non-Halogenated Solvents	10,624	Solvent Recovery
Organic Liquids	468	Other Recycling
Pesticides	2,429	Aqueous Treatment-Organic
PCB's and Dioxins	903	Incineration
Oily Sludges	1,819	Oil Recovery
Halogenated Organic Sludges and Solids	14	Incineration
Non-Halogenated Organic Sludges and Solids	1,663	Incineration
Dye and Paint Sludges and Resins	1,096	Incineration
Metal-Containing Liquids	1,183	Aqueous Treatment
Cyanide and Metal Liquids	7	Metals/Neutralization
Non-Metallic Inorganic Liquids	1,054	Aqueous Treatment Metals/Neutralization
Metal-Containing Sludges	150	Stabilization
Non-Metallic Inorganic Sludges	1,519	Stabilization
Contaminated Soil	2,366	Incineration
Miscellaneous Waste		
Expired/Surplus Inorganics (141)	7	Stabilization
Asbestos (151)	411	Stabilization
Metal Dust (172)	389	Other Recycling
FCC Waste (161)	15	Stabilization
Other Inorganic Solid Waste (181)	1,691	Other Recycling
Pharmaceutical Waste (311)	4	Stabilization
Expired/Surplus Organics (331)	2	Other Recycling
Empty Containers (Large) (512)	431	Other Recycling
Empty Containers (Small) (513)	37	Other Recycling
Laboratory Waste (551)	82	Other Recycling
Baghouse Waste (591)	17	Stabilization
Household Waste (612)	28	Other Recycling
TOTAL	**35,490**	

[1]The figures shown in this table reflect data in Table 7-1. An explanation of the discrepancies between data in this table and the 1986 manifest summary is found on pages 7.2 - 7.5. Determination of Generalized Treatment Method, including Other Reclycling, was based solely upon Table E-1 of the State Department of Health Service's Technical Reference Manual of the Guidelines for Preparation of Hazardous Waste Management Plans.

The top 15 waste generators are identified in Table 7-4, with a brief discussion of the type of operation, products produced, and categories of wastes generated, found in the Appendix. According to the manifest system, the County's third largest waste generator in 1986 was California Oil Recyclers. Actually, California Oil Recyclers did not generate the hazardous waste as a result of its industrial operations but rather provided a hauling service which transports waste oil from many businesses in the County. It should be noted that California Oil Recyclers has recently moved its operations from San Mateo County to Newark. However, the departure of the firm from San Mateo County should not affect future waste generation in the County, since these wastes will now be exported to Alameda County.

The relative distribution of the principal hazardous waste generating firms in San Mateo County is shown in Map 7-1. The map includes 20 firms, all of which generated at least 75 tons of hazardous waste for off-site treatment or disposal (1986). All of the firms are located in the eastern bayside portion of the County, and generally within one mile of a major highway.

3. Comparison Between 1986 and 1987 Data to Assure Representativeness.

To assure a representative data base, a comparison was made between 1986 and 1987 data for the largest waste generating firms in the County (firms generating at least 500 tons/year (1986). As can be seen in Table 7-5, waste generation was marginally lower for most of the firms in 1987, and aggregate generation was 14% less. Reduced values in 1987 are known to be attributed to waste reduction efforts for several firms (O'Brien Corporation and Kelly Moore Paint Company), and presumed for others. No conspicuous anomalies are present for the firms sampled. Although the 1987 values are generally lower than those in 1986, the 1986 data is considered a representative base for planning purposes.

4. Components of the Waste Stream

a. Wastes From Clean-up Activities

Of the 35,490 tons of hazardous waste generated in San Mateo County for off-site management, approximately 4,116 tons (12%) resulted from the clean-up activities associated with known contaminated hazardous waste sites or accidental releases or spills. Clean-up activities are not typically an ongoing means of waste generation, and therefore will be analyzed separately in this plan for purposes of projecting future hazardous waste generation. Table 7-6 also disaggregates clean-up wastes from the current waste stream data.

b. Wastes From Small Quantity Generators

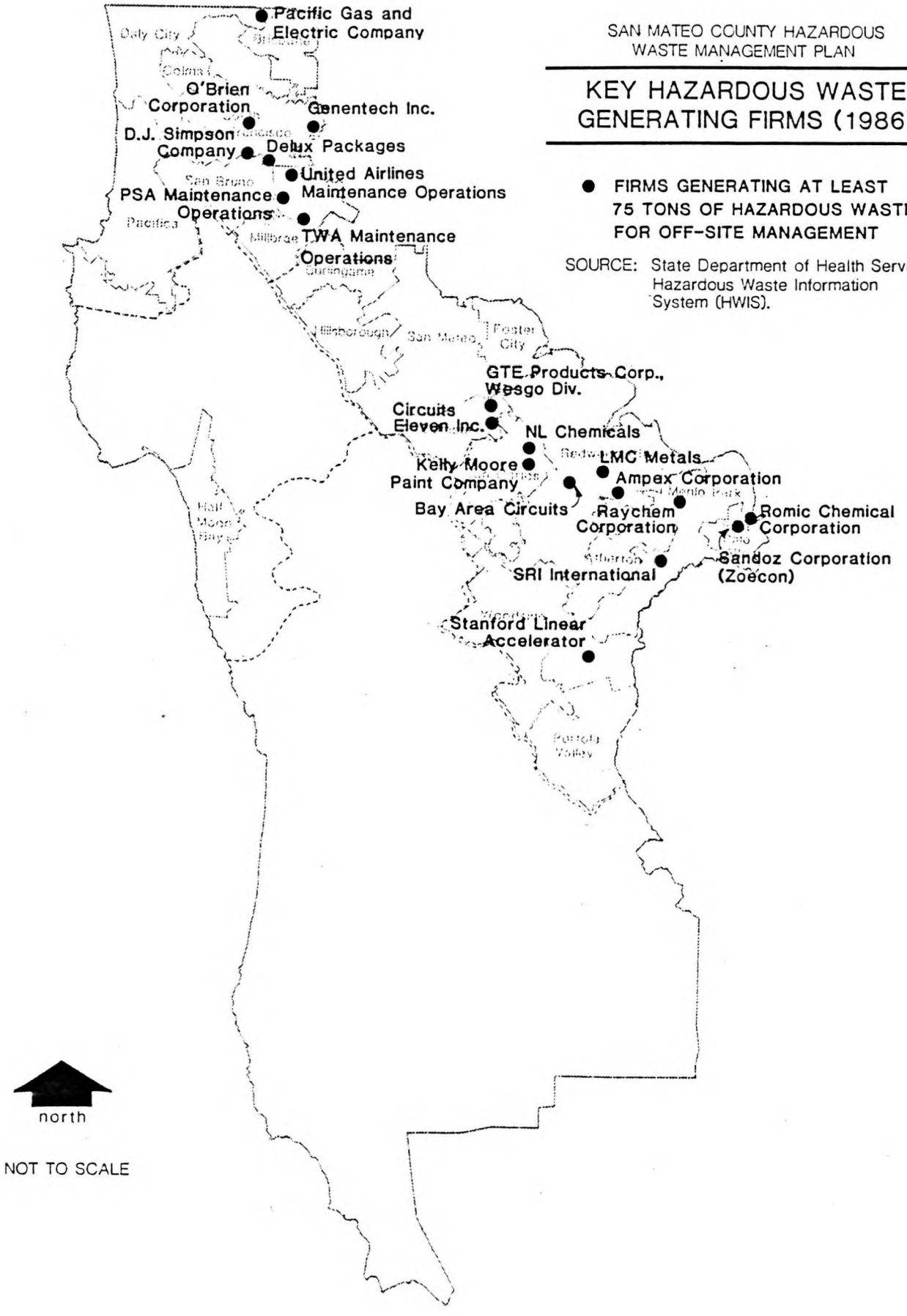
There is growing attention and concern for the proper disposal of small amounts of hazardous waste. Generators of small quantities of hazardous waste primarily include commercial businesses and households. Individually, hazardous waste from small quantity generators may not appear significant but, collectively, they represent a critical component of the total waste stream, particularly when such wastes

TABLE 7-4

PRINCIPAL HAZARDOUS WASTE GENERATING FIRMS (1986)

NAME OF FIRM	BUSINESS TYPE	TOTAL OFFSITE WASTE GENERATION (1986) (Tons/Year)
Romic Chemical Corporation, East Palo Alto	Chemical Recycler	10,257.82
United Airlines, San Francisco International Airport	Aircraft Maintenance Center	4,144.91
California Oil Recyclers, San Carlos	Oil Hauler and Recycler	2,616.75
Sandoz Corporation (formerly Zoecon), East Palo Alto	Chemical Reseach and Manufacturing	2,532.28
LMC Metals, Redwood City	Scrap Metal Recycler	1,551.44
Raychem Corporation, Menlo Park	Plastic and Metal Products Producer	1,199.93
O'Brien Corp., South San Francisco	Paint Manufacturer	971.46
PG & E., Daly City	Materials Facility	880.14
Bayshore Oil Company, Redwood City	Oil Hauler	821.38
Stanford Linear Accelerator, Menlo Park	High Energy Physics Research	799.84
Kelly Moore Paint Company, San Carlos	Paint Manufacturer	660.95
TWA, S.F. International Airport	Aircraft Maintenance Center	302.91
Bay Area Oil Recyclers, Pacifica	Oil Hauler	232.39
Ampex Corporation, Redwood City	Communications Equipment Research and Manufacturing	231.50
NL Chemicals (formerly Spencer Kellogg), San Carlos	Paint/Resin Manufacturer	224.53
TOTAL		**27,428.20**

MAP 7-1



SAN MATEO COUNTY HAZARDOUS WASTE MANAGEMENT PLAN

KEY HAZARDOUS WASTE GENERATING FIRMS (1986)

● FIRMS GENERATING AT LEAST 75 TONS OF HAZARDOUS WASTE FOR OFF-SITE MANAGEMENT

SOURCE: State Department of Health Services Hazardous Waste Information System (HWIS).

Apr.1988/rp

TABLE 7-5

COMPARISON BETWEEN 1986 AND 1987 MANIFEST DATA FOR MOST SIGNIFICANT WASTE GENERATING FIRMS[1]

NAME OF FIRM	TOTAL OFF-SITE WASTE GENERATION (1986) (Tons/Year)	TOTAL OFF-SITE WASTE GENERATION (1987) (Tons/Year)
Romic Chemical Corporation	10,258	8,604
United Airlines	4,145	4,027
Sandoz Corporation	2,532	2,001
LMC Metals	1,551	2,305
Raychem Corporation	1,200	1,212
O'Brien Corporation	971	599
PG&E	880	488
Stanford Linear Accelerator	800	285
Kelly Moore Paint Company	661	151
TOTAL	**22,998**	**19,672**

[1]Firms generating at least 500 tons/year (1986), excluding "route service haulers."

EXISTING HAZARDOUS WASTE MANAGEMENT CAPACITY

Hazardous waste may be managed at either an "on-site" or "off-site" treatment, storage, or disposal facility. An on-site facility consists of a business or operation which manages its own waste, whereas an off-site facility receives waste from other waste generating firms. Off-site facilities tend to be commercial operations.

A primary emphasis of the Hazardous Waste Management Plan will be to assure that sufficient off-site facility capacity is available proportionate to the County's waste generation needs. The availability of on-site facility capacity is also important, and will be considered in the plan. Although hazardous waste managed on-site does not pose an immediate planning problem, should existing on-site facilities lose their operating privileges, such waste would require treatment or dispsoal at an off-site facility. Also, should excess capacity be available at on-site facilities, such facilities could consider converting to an off-site operation.

OFF-SITE HAZARDOUS WASTE MANAGEMENT FACILITIES

In 1986, there were three commercial off-site facilities in San Mateo County. They are: (a) California Oil Recyclers, (b) Romic Chemical Corporation, and (c) BFI of San Mateo County.

1. Treatment/Disposal Capacity

   a. California Oil Recyclers

      California Oil Recyclers terminated its operations as a commercial oil recycler in September 1987, and recently relocated to Newark in Alameda County. While located in San Mateo County, the firm served as both a hauler and reprocessor of used lubricating oil, recycling it into usuable petroleum products, fuel oil, and asphalt flux.

      Data furnished by the State Department of Health Services indicates that in 1986 California Oil Recyclers operated at 98% of its full treatment capacity (25,200 tons), as shown in Table 7-14.

   b. Romic Chemical Corporation

      Romic Chemical Corporation, located in East Palo Alto, serves as a major chemical recycler for businesses using solvents and other organic compounds, including alcohols, acetates, and fluorocarbons. The firm remains as the only commercial off-site hazardous waste management facility in San Mateo County. The location of Romic Chemical Corporation within the County is shown on Map 7-2.

      Data furnished by the Romic Chemical Corporation indicates that the facility in 1986 operated at approximately 35%-37% of their full treatment capacity (58,800 tons), as shown in Table 7-14.

TABLE 7-14

EXISTING COMMERCIAL OFF-SITE TREATMENT/DISPOSAL CAPACITY/ QUANTITIES OF WASTE TREATED OR DISPOSED (PERMITTED FACILITIES) (1986)

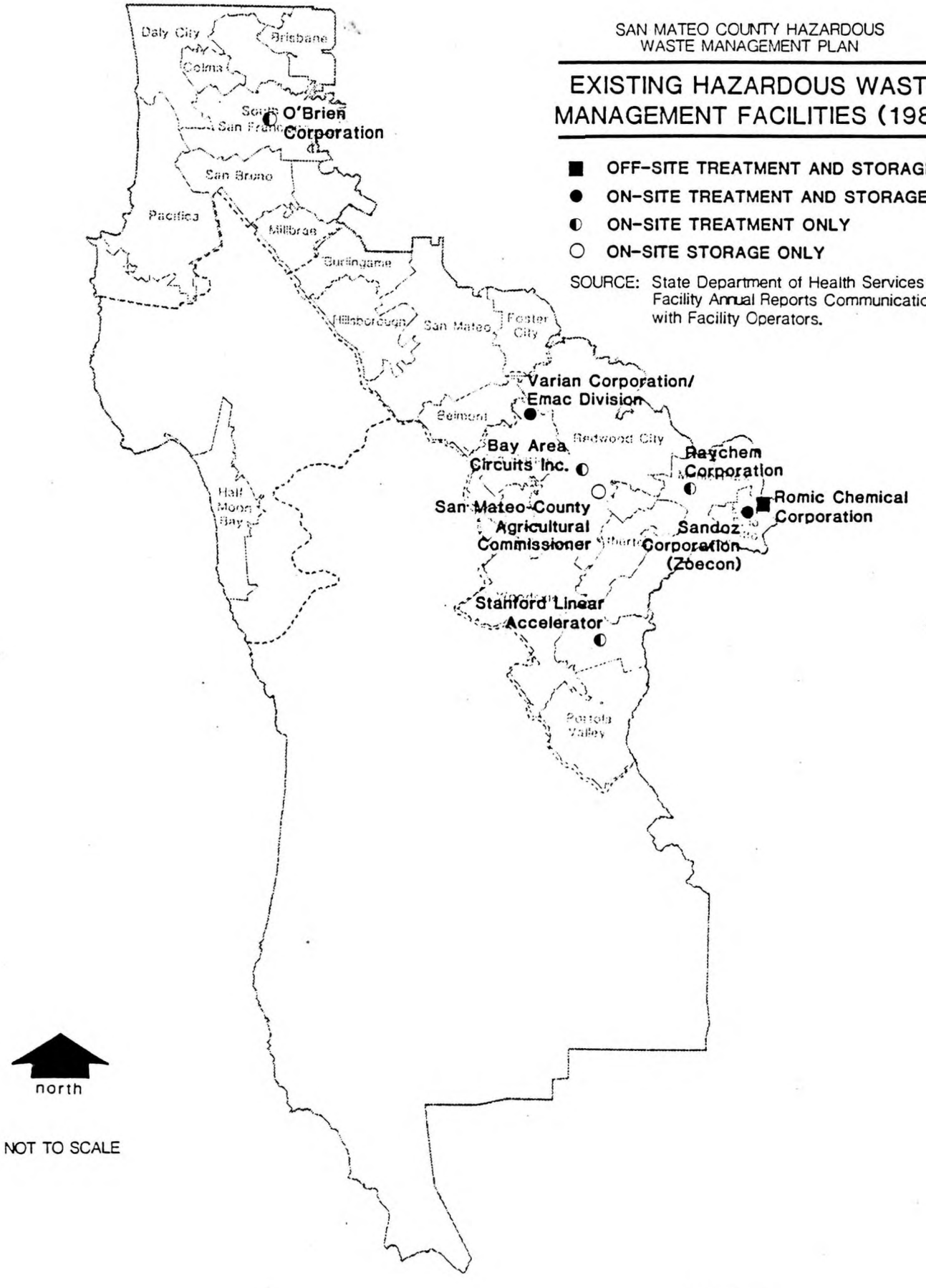
FACILITY[1]	GENERALIZED TREATMENT METHOD	FACILITY CAPACITY (Tons/Year)	QUANTITY OF WASTE TREATED OR DISPOSED (Tons/Year)	PERCENTAGE OF CAPACITY USED
California Oil Recyclers[2]	Oil Recovery	25,200	24,813	98%
Romic Chemical Corporation	Aqueous Treatment--Organic	8,400	2,940	35%
	Solvent Recovery	50,400	18,480	37%
BFI of San Mateo County[3]	Residuals Disposal	N/A	304	N/A
TOTAL		**84,000**	**46,537**	**55%**

[1]Quicksilver Products, Inc., an existing mercury recovery operation with facility permit approval pending, maintains 1.13 tons/year treatment capacity.

[2]Terminated Operations in 1987.

[3]Ceased accepting hazardous waste in 1987.

MAP 7-2


SAN MATEO COUNTY HAZARDOUS WASTE MANAGEMENT PLAN
EXISTING HAZARDOUS WASTE MANAGEMENT FACILITIES (1988)
OFF-SITE TREATMENT AND STORAGE
ON-SITE TREATMENT AND STORAGE
ON-SITE TREATMENT ONLY
ON-SITE STORAGE ONLY
SOURCE: State Department of Health Services - Facility Annual Reports Communication with Facility Operators.
Daly City
Brisbane
Colma
South San Francisco
San Bruno
Pacifica
Millbrae
Burlingame
Hillsborough
San Mateo
Foster City
Belmont
Redwood City
Half Moon Bay
Portola Valley
O'Brien Corporation
Varian Corporation/ Emac Division
Bay Area Circuits Inc.
Raychem Corporation
Romic Chemical Corporation
San Mateo County Agricultural Commissioner
Sandoz Corporation (Zoecon)
Stanford Linear Accelerator
north
NOT TO SCALE
Apr.1988/rp

c. BFI of San Mateo County

BFI of San Mateo County operates the Ox Mountain municipal landfill near Half Moon Bay, which accepted asbestos for disposal in 1986. The facility ceased accepting asbestos in 1987, and does not plan to reaccept the waste in the future. Data furnished by the State Department of Health Services indicates that in 1986 the facility disposed approximately 304 tons (1,216 cubic yards) of asbestos, as shown in Table 7-14.

d. Quicksilver Products, Inc.

Quicksilver Products, Inc. operates an off-site storage, treatment and recycling facility in Brisbane. The firm currently recycles materials containing mercury, particularly those derived from laboratory instruments. In 1986, the firm applied for a facility permit from the State Department of Health Services, which is currently pending approval. Communication with the State Department of Health Services indicates that the firm has requested an annual treatment capacity of 1.13 tons (20 gallons). As facility permit approval is pending, this statistic is not formally included in Table 7-14.

2. Storage Capacity

Each of the three facilities operating in 1986 provided capacity for long-term storage of hazardous waste. Storage is usually necessary to consolidate wastes in advance of treatment or disposal, or before shipping untreatable or residual wastes to another off-site management facility. Available storage capacity can be used to mitigate the effect of temporary closure of an off-site treatment or disposal facility, or provide an interim solution during a hazardous waste emergency or crisis. Table 7-15 reflects hazardous storage capacity in 1986, as derived from State Department of Health Services data, and communication with facility operators.

ON-SITE HAZARDOUS WASTE MANAGEMENT FACILITIES

1. Facilities Operating Under Permit From State Department of Health Services

Many companies, particularly manufacturers, manage their hazardous waste on-site, i.e., at the facility in which it is generated. The predominant "on-site" generators operate under a permit from the State Department of Health Services as a treatment, storage, or diposal facility. Within San Mateo County, there are nine firms (1986) permitted as on-site treatment, storage, or disposal facilities, as follows:

a. Raychem Corporation, Menlo Park

b. The O'Brien Corporation, South San Francisco

c. Stanford Linear Accelerator, Menlo Park

d. Varian Corporation, San Carlos

TABLE 7-15

EXISTING COMMERCIAL OFF-SITE STORAGE CAPACITY (1986)

FACILITY	STORAGE METHOD	AVERAGE MONTHLY QUANTITY OF WASTES STORED OVER 90 DAYS (Tons)	STORAGE CAPACITY (Tons)	PERCENTAGE OF STORAGE CAPACITY USED
California Oil Recyclers[1]	Tank (S02)	1,008	1,281	79%
Romic Chemical Corporation[2]	Container (S01)	10.5	620	2%
	Tank (S02)	210	452	46%
TOTAL		**1,229**	**2,353**	**52%**

[1]Data based upon information supplied by the State Department of Health Services. The firm terminated operations in 1987, and has relocated to Alameda County.

[2]Data based upon information supplied by Romic Chemical Corporation. No information was received from the State Department of Health Services.