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MCAS EL TORO
SSIC # 5090.3

Final

Marine Corps Air Station
El Toro
Hazardous Waste Minimization Plan

July 1994

Prepared for:

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TECHNICAL CERTIFICATION

I am:

☒ an engineer who is registered as a professional engineer pursuant to section 6762 of the Business and Professions Code

☐ an environmental assessor who is registered pursuant to section 25570 of the Health and Safety Code

☐ an individual who is responsible for the processes and operations of the site

"I certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who manage the system, or the persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for making false statements or representations to the Department, including the possibility of fines for criminal violations."

Name: Curtis J. Schmidt

Title: Professional Engineer

Signature: Curtis J. Schmidt

Date: 4/22/96

FINANCIAL CERTIFICATION

I am:

☐ the owner

☐ the operator

☐ the corporate officer responsible for the site

☐ an authorized individual capable of committing financial resources necessary to implement selected source reduction measures.

"I certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who manage the system, or the persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for making false statements or representations to the Department, including the possibility of fines for criminal violations."

Name:

Title:

Signature:

Date:

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LIST OF ABBREVIATIONS

ABO	Air Base Order
CCR	California Code of Regulations
CFR	Code of Federal Regulations
CMC	Commandant of the Marine Corps
CNO	Chief of Naval Operations
CWC	California Waste Code
CY	Calendar Year
DHS	California Department of Health Services
DLA	Defense Logistics Agency
DOD	Department of Defense
DRMO	Defense Reutilization and Marketing Organization
EHW	Extremely Hazardous Waste
FAR	Federal Acquisition Regulation
FMD	Facilities Management Division
FSCS	Federal Supply Catalog System
GSO	Ground Safety Office
HAZMIN	Hazardous Waste Minimization
HM/HW	Hazardous Materials/Hazardous Waste
MAG	Marine Aircraft Group
MAW	Marine Aircraft Wing
MCAS	Marine Corps Air Station
MCO	Marine Corps Order
MIL-SPECS	Military Specifications
MRS	Mercury Recovery Services
MSDS	Material Safety Data Sheet
NAVFAC	Naval Facilities Command
NEESA	Naval Energy and Environmental Support Activity
NSN	National Stock Number
OPNAVNOTE	Naval Operation Notice
PC	Policy Committee
PCB	Polychlorinated Biphenyl
QPI	Quicksilver Products, Inc.
SB 14	Senate Bill 14, the commonly applied name of the Hazardous Waste Source Reduction and Management Review Act of 1989
SCP	Spill Contingency Plan
SPCC	Spill Prevention, Countermeasure and Control
TCA	Trichloroethane
TCE	Trichloroethene
TFC	Task Force Committee
TSDF	Treatment, Storage, and Disposal Facility
USMC	United States Marine Corps
UST	Underground Storage Tank

DEFINITIONS

Applicable Hazardous Waste. Any hazardous wastes, including extremely hazardous waste, subject to Health and Safety Code Section 25244.19(b)(3) or Title 22, Chapter 30, Article 6.1, Section 66523.1(h).

Appropriate Local Agency. A county, city, or local agency which has regulatory authority over the management of hazardous waste.

Automotive Fluid. Fluid associated with operating motor vehicles such as transmission oil, hydraulic fluid, brake fluid, antifreeze, power steering fluid, gasoline, etc.

Best Management Practices (BMP). Methods, measures, or practices to prevent or reduce water pollution, including, but not limited to, structural and nonstructural controls and operation and maintenance procedures. Usually, BMP's are applied as a system of practices rather than a single practice. BMP's are selected on the basis of site-specific conditions that reflect natural background conditions and political, social, economic, and technical feasibility. These BMP's are prepared by State agencies.

Contaminated Fuel. A mixture of one or more types of fuel oils, or an oil or oil mixture containing foreign matter such as dust, dirt, rust, water, or emulsion.

EPA Identification Number. The number assigned by EPA to each generator, transporter, and treatment, storage, and disposal facility.

Facility. Any building, structure, installation, equipment, pipe or pipeline, well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, or aircraft; or any site where an HS has been deposited, stored, disposed of, placed, or otherwise come to be located. The term "site" is used synonymously with the term "facility."

Generator. Any person whose act or process produces hazardous waste as identified or listed in 40 CFR 261, or whose act first causes a HW to become subject to regulations.

Hazardous Material. Any material that because of its quantity, concentration, or physical, chemical, or infectious characteristics may pose a substantial hazard to human health or the environment when released or spilled. Designation of a material by this definition, when separately regulated or controlled by other orders or directives, does not eliminate the need for adherence to that hazard-specific guidance that takes precedence over this order for control purposes. Such materials include ammunition, weapons, explosives, and explosive-actuated devices, propellants, pyrotechnics, chemical and biological warfare materials, medical and pharmaceutical materials, medical waste and infectious materials, bulk fuels, radioactive materials, and other materials such as asbestos and mercury. Nonetheless, the foregoing materials should be considered hazardous to the

extent personnel exposure may occur incident to manufacture, storage, use, and demilitarization of these items.

Hazardous Waste. Any discarded material (liquid, solid, or gaseous) that because of quantity, concentration, or physical or chemical characteristics, may bring about the following:

a. Cause or significantly contribute to an increase in mortality or a serious irreversible or incapacitating reversible illness.

b. Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

This excludes infectious and radioactive waste; if infectious or radioactive wastes are mixed with EPA-State-regulated HW, then the mixture remains regulated as an HW. HW does not include HM with an expired shelf life unless designated as such by a DRMO.

An HW is defined as follows: (a) a waste or combination of wastes as defined in 40 CFR 261.3, or (b) those substances defined in 49 CFR 171.8.

Lubricating (Lube) Oil. Crankcase oil, cutting oil, gear lubricant, metal-working lubricant, hydraulic oil, and transmission fluid.

Oil. Any petroleum-based fluid or semisolid. Oil includes crude oil and liquid fuels (gasoline, kerosene, diesel, and all light and heavy fuel oil(s), lube oil, all waste oils, oil sludge, and oil refuse). Oil also includes synthetic-based lubricating and transmission products. In some instances, oil mixed with other wastes other than dredged spoil is defined as oil; in other instances oil mixed with other wastes is defined as HW.

Oily Wastewater. An oil-water mixture that has a water content greater than 50 percent. This mixture may also contain other nonpetroleum material.

Recyclable Materials. Materials that normally have been, or would be, discarded (e.g., scrap and waste) and that may be reused after undergoing some type of physical or chemical processing. Recyclable materials do not include precious metal-bearing scrap and those items that may be used again for their original purposes or functions without any special processing (e.g., used vehicles, vehicle or machine parts, bottles (not scrap glass), electrical components, unopened containers of unused oil/solvent. Recyclable materials also do not include boats, planes, weapons, or any discarded material that must undergo demilitarization or mutilation prior to sale. Finally, materials that are normally disposed of through other higher priority programs, such as reutilization, transfer, donation, foreign military sales, strategic and critical materials stockpile, etc., are also excluded.

Recycling. The process by which recovered or regained materials are transformed into new, usable products.

Solid Waste. Any garbage, refuse, trash, rubbish, sludge, or waste from commercial, agricultural, industrial, or residential activities. Does not include any of those materials that are classified as HW.

Source Reduction. Reducing, at the point of production or generation (or extending their useful life), the volume or toxicity of materials before the materials are purchased, used, or discarded. Includes the reuse of materials, items, or products prior to recycling.

Source Separation. The separation of recyclable materials at their point of generation by the generator.

Toxic Pollutant. A pollutant that has been listed by the EPA as causing death, disease, behavioral abnormalities, cancer, genetic mutations, physical deformities, or physiological malfunctions, and is subject to effluent limitations.

Waste Oil. Oil that has been changed markedly from the original specification, thereby becoming unsuitable for further use within the Marine Corps.

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1.0 Hazardous Waste Source Reduction Evaluation Review and Plan Summary

1.1 Site Information

EPA Identification Number:	CA 6170023208
Generator's Name:	Marine Corps Air Station El Toro
Mailing Address:	Facilities Management Division Code - 1JG
	Santa Ana, California 92079-5001
Site Address:	Same as above
Telephone Number:	714 / 726-2772
Contact Name:	Capt. D. G. Clark II
SIC Code:	9711 (National Security)

1.2 Plan Overview

In 1989, the Legislature of the State of California passed the Hazardous Waste Source Reduction and Management Review Act, commonly referred to as Senate Bill 14 (SB 14). The goals of SB 14 are to:

1. Reduce the generation of hazardous waste at its source
2. Reduce the release into the environment of chemical contaminants which have adverse and serious health or environmental effects, and
3. Document hazardous waste management information and make that information available to the state and local government.

SB 14 establishes a format to be used by generators to:

1. Complete and conduct a source reduction evaluation review and plan, and a plan summary, and
2. Prepare a hazardous waste management performance report, and report summary.

SB 14, as amended by Senate Bill 1726 of 1992, applies to generators who routinely generate, through ongoing processes and operations, more than 5,000 kilograms of hazardous waste in a calendar year (CY), or more than 12 kilograms of extremely hazardous waste in a calendar year. The reports required by SB 14 were to be prepared on or before September 1, 1991, and every 4 years thereafter, and include a review of the waste generated during the calendar year prior to the year in which the plan is prepared.

This Waste Minimization Plan closely follows the format of the initial Waste Minimization Plan (Plan) for Marine Corps Air Station (MCAS) El Toro (Station), developed in July 1991 for wastes generated during (CY) 1990, the baseline reporting year. This current Plan provides an update of waste generation rates and waste minimization activities that have taken place since 1991. The recommendations made in the 1991 Plan (CY 1990) are reviewed and their implementation and effectiveness are evaluated. Current waste minimization activities at MCAS El Toro are also evaluated. The Navy requested that this update of the Waste Minimization Plan be prepared as a means of tracking the ongoing waste generation and minimization activities taking place at MCAS El Toro. Though this update was requested during the period between required reporting years, it follows the guidelines of SB 14 which requires:

- A plan summary (Section 1)
- The plan, (Sections 2-10), including:
  - An analysis of the hazardous waste generated during CY 1992
  - A comparison of the hazardous wastes generated during baseline year 1990 (CY 1990) and CY 1992
  - A progress report on the implementation of the recommendations made in the 1991 Waste Minimization Plan

- A Source Reduction Evaluation for the major waste streams generated in 1992
- A Hazardous Waste Management Performance Report Summary (Section 11)
- A Hazardous Waste Management Performance Report (Section 12)

1.3 Hazardous Waste Generation at MCAS El Toro

The guidelines presented in SB 14 were followed to identify the hazardous waste streams generated at MCAS El Toro, and to identify and evaluate source reduction measures for the major waste streams. The manifests of all hazardous waste shipped off-site were entered in a database and sorted to determine the types and quantities of waste generated. Furthermore, background data covering process information and waste management procedures used at MCAS El Toro was collected to prepare this CY 1992 Waste Minimization Plan.

The hazardous and extremely hazardous wastes were sorted and grouped according to their California Waste Code (CWC). Table 1-1 lists the hazardous waste streams produced in CY 1992 along with the associated CWCs, waste type, frequency code, and the annual generation rate in pounds. The hazardous and extremely hazardous wastes were segregated to determine if the regulatory thresholds (26,400 pounds of hazardous waste and 26.4 pounds of extremely hazardous waste) were exceeded. In CY 1992, MCAS El Toro manifested approximately 275,000 pounds of extremely hazardous waste and approximately 4.01 million pounds of hazardous wastes. After the elimination of wastes exempted from consideration under SB 14, the annual total manifested off-Station was approximately 2,000 pounds of extremely hazardous waste and approximately 2.71 million pounds of hazardous waste. Both of these are above the regulatory threshold quantities. Tables 1-2 and 1-3 present a summary of the resulting extremely hazardous waste and hazardous waste streams, respectively, and identify the major waste streams for which source reduction measures were developed and evaluated.

The activities that produce hazardous wastes at MCAS El Toro, shown in Figure 1-1 and 1-2 for extremely hazardous and hazardous wastes, respectively, include: maintenance of aircraft, aircraft electronic components, and vehicles; painting; sandblasting; aircraft

defueling; photoprocessing; spill cleanups; site remediation; polychlorinated biphenyl (PCB) and asbestos removal; and discarded surplus inventory.

Five extremely hazardous wastes were identified as major waste streams:

CWC 141	Calcium hypochlorite
CWC 181	Mercury batteries
CWC 725	Waste mercury
CWC 541	Photochemicals
CWC 792	Hydrochloric acid with metals

Two hazardous wastes were identified as major waste streams:

CWC 222	Water with fuel and oil
CWC 223	Oil-containing waste

Source reduction measures were evaluated and selected for each of these major waste streams. If applicable, measures under each of the following approaches were considered:

- Input changes
- Operational improvements
- Production process change
- Product reformulations
- Administrative steps

Detailed background information on processes and input materials for the major waste streams evaluated in the CY 1992 Waste Minimization Plan was difficult to acquire. This is partly due to the types of waste streams being evaluated and the nature of the Station's operations and processes that generate these wastes. Most waste-generating activities at the Station are batch-type operations such as maintenance of aircraft and vehicles, spill cleanups, touch-up painting, etc. These activities are conducted concurrently by multiple squadrons,

Table 1-1
Calendar Year 1992 Waste Generation Data
MCAS El Toro

Waste Stream	CWC	Waste Type	Frequency	Weight (lb)
Calcium hypochlorite	141	E	R	173
Mercury batteries and waste mercury	181	E	R	468
PCB containing waste	261	E	X	273,211
Photochemicals	541	E	R	450
Waste mercury metallic	725	E	R	165
Waste hydrochloric acid	792	E	R	727
Alkaline solution without metals	122	H	R	5,316
Wet alkaline batteries	122	H	R	42
Unspecified alkaline solution	123	H	R	32
Aqueous solution with metals	132	H	R	3,625
Detergent	133	H	R	184
Unspecified aqueous solution	135	H	R	109,046
Surplus inorganics	141	H	R	1,040
Asbestos	151	H	X	15,562
Washrack sludge	171	H	R	20,099
Blasting booth sand	172	H	R	94,196
Inorganic solid waste	181	H	R	114,155
Contaminated soil	181	H	X	436,552
Lead acid batteries	181	H	X	126
Dry alkaline batteries	181	H	R	48
Lithium batteries	181	H	R	2,095
Nickel/cadmium batteries	181	H	R	26
Halogenated solvents	211	H	R	23,479
Oxygenated solvents	212	H	R	12,580
Hydrocarbon solvents	213	H	R	14,717
Unspecified solvents	214	H	R	57,009
Waste aviation fuel	221	H	X	276,556
Waste hydraulic fluid, oil, and grease	221	H	X	248,630
Water with fuel and oil	222	H	R	629,656
Oil sludge	222	H	R	148

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Table 1-1 (Continued)
Calendar Year 1992 Waste Generation Data
for MCAS El Toro

Waste Stream	CWC	Waste Type	Frequency	Weight (lb)
Rag/absorbent containing oil	223	H	R	121,203
Oil and fuel filters	223	H	R	19,921
Oil containing waste	223	H	R	1,337,077
Automotive fluid, jet fuel	223	H	X	215,734
Oil contaminated soil	223	H	X	28,167
Pesticide related material	232	H	X	74
Adhesives	281	H	R	1,503
Off-spec organics	331	H	R	11,690
Liquid organic mixtures	343	H	R	29,168
Other organic solids	352	H	R	5,356
Paint waste	461	H	R	52,113
Empty containers	512	H	R	22,450
Photochemical waste	541	H	R	919
Lab waste chemicals	551	H	R	2,987
Contaminated soil from site cleanups	611	H	X	75,450
Solvents	741	H	R	17,212
Waste acids	791	H	R	1,415
Alodine and acids w/metals	792	H	R	769
Non-hazardous material	N/A	W	X	28,985
Total				**4,312,306**

CWC = California Waste Code
Waste Type
E = Extremely hazardous waste
H = Hazardous waste
W = Non-Hazardous Waste

Frequency
R = Routinely generated waste
X = Wastes exempted by Title 22, Section 66521(c), California Code of Regulations
N/A = No applicable CWC

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Table 1-2
Calendar Year 1992 Routinely Generated Extremely Hazardous Waste Streams
and
Identification of Major (>5 Percent) Waste Streams
MCAS El Toro

Extremely Hazardous Waste Stream	CWC	Quantity (lb)	Percent of Total	Major (>5%) (lb)	Minor (<5%) (lb)
Calcium hypochlorite	141	173	8.72	173	
Mercury batteries and waste mercury	181	468	23.60	468	
Photochemicals	541	450	22.69	450	
Waste mercury-metallic	725	165	8.32	165	
Waste hydrochloric acid	792	727	36.66	727	
Totals		**1,983**	**100**	**1,983**	**0**

CWC - California Waste Code
Major waste streams included in SB 14 Source Reduction Evaluation

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Table 1-3
Calendar Year 1992 Routinely Generated Hazardous Waste Streams
and
Identification of Major (>5 Percent) Waste Streams
MCAS El Toro

Hazardous Waste Stream	CWC	Quantity (lb)	Percent of Total	Major (>5%) (lb)	Minor (<5%) (lb)
Alkaline solution without metals	122	5,358	0.20		5,358
Unspecified alkaline solution	123	32	0.00		32
Aqueous solution with metals	132	3,625	0.13		3,625
Detergent	133	184	0.01		184
Unspecified aqueous solution	135	109,046	4.02		109,046
Surplus inorganics	141	1,040	0.04		1,040
Washrack sludge	171	20,099	0.74		20,099
Blasting booth sand	172	94,196	3.47		94,196
Inorganic solid waste	181	116,324	4.29		116,324
Halogenated solvents	211	23,479	0.87		23,479
Oxygenated solvents	212	12,580	0.46		12,580
Hydrocarbon solvents	213	14,717	0.54		14,717
Unspecified solvents	214	57,009	2.10		57,009
Water with fuel and oil, oil sludge	222	629,804	23.23	629,804	
Oil containing waste	223	1,478,201	54.52	1,478,201	
Adhesives	281	1,503	0.06		1,503
Off-spec organics	331	11,690	0.43		11,690
Liquid organic mixtures	343	29,168	1.08		29,168
Other organic solids	352	5,356	0.20		5,356
Paint waste	461	52,113	1.92		52,113
Empty containers	512	22,450	0.83		22,450
Photochemical waste	541	919	0.03		919
Lab waste chemicals	551	2,987	0.11		2,987
Solvents	741	17,212	0.63		17,212
Waste acids	791	1,415	0.05		1,415
Alodine and acids w/metals	792	769	0.03		769
Totals		**2,711,276**	**100**	**2,108,005**	**603,271**

CWC = California Waste Code
Major waste streams included in SB 14 Source Reduction Evaluation

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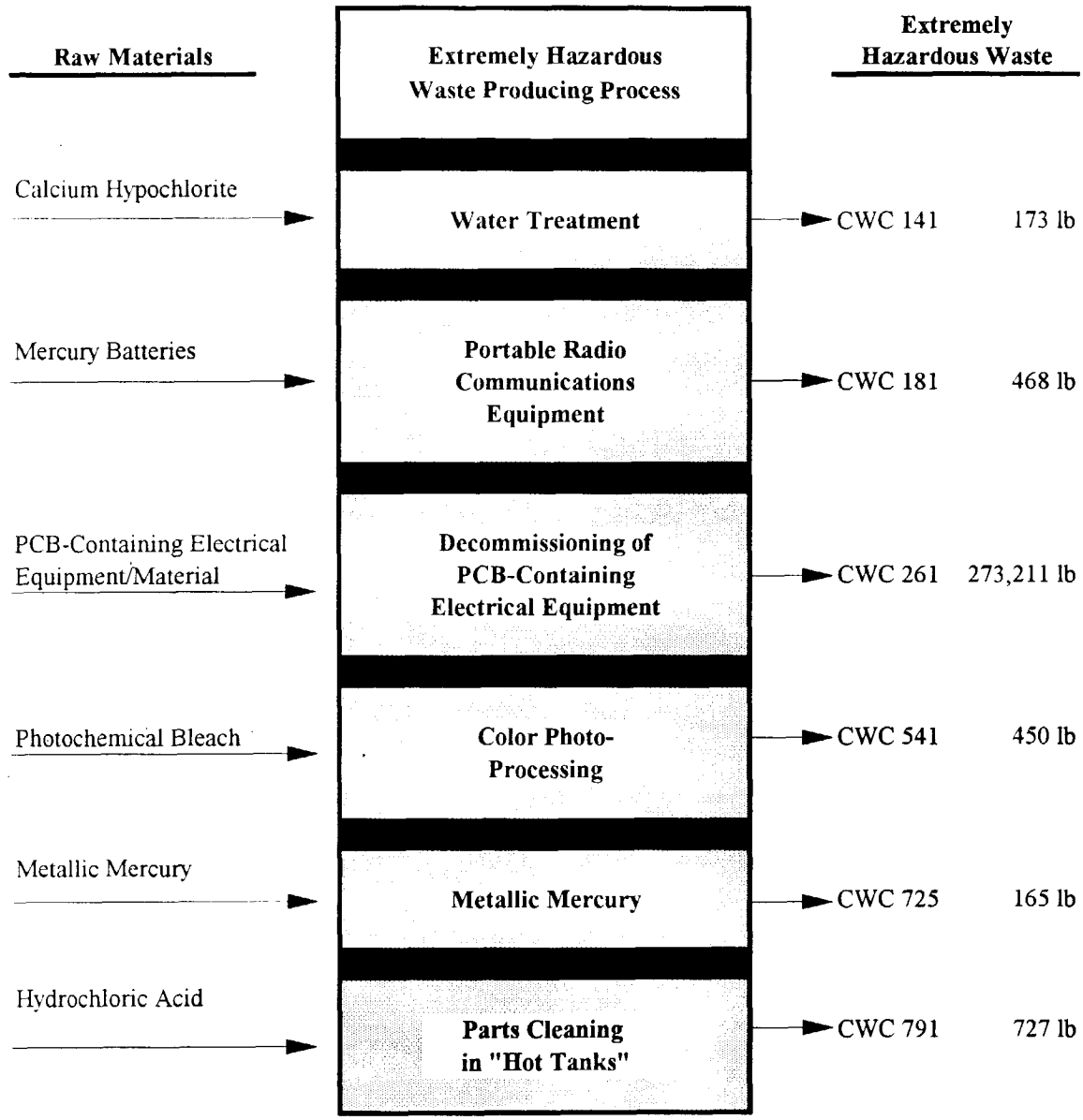

Note: This is not a manufacturing facility; therefore, no products are produced.

CWC = California Waste Code

Figure 1-1
Block Flow Diagram for Extremely Hazardous Waste Generated During Calendar Year 1992 at MCAS El Toro

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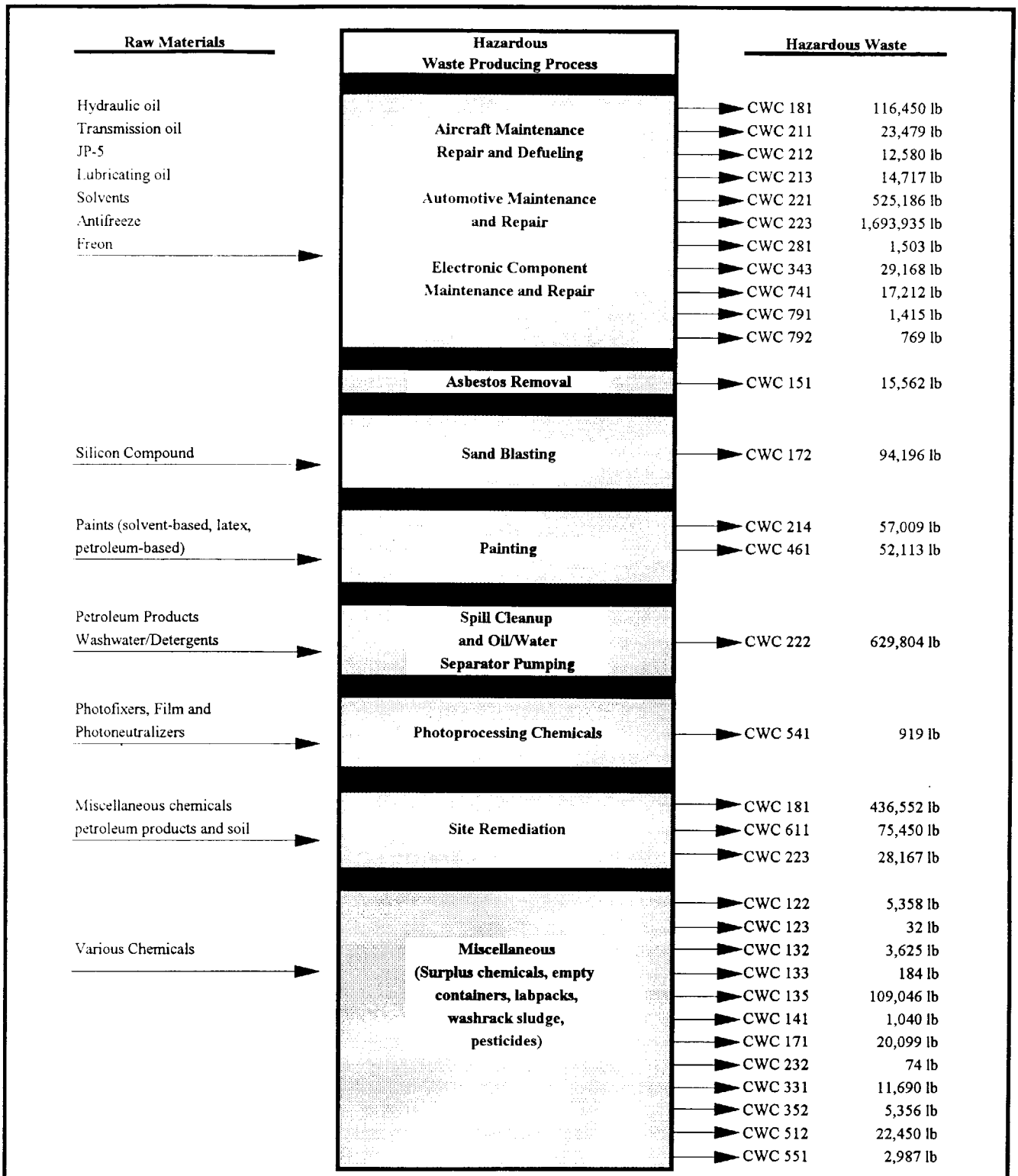

Note: This is not a manufacturing facility; therefore, no products are produced.

CWC = California Waste Code

Figure 1-2
Block Flow Diagram for Hazardous Waste Generated During Calendar Year 1992 at MCAS El Toro

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each of which contributes a portion of the total hazardous waste. This makes it difficult to trace hazardous wastes generation and hazardous materials usage to individual processes and operations within the Station. There is currently no existing Stationwide tracking system for hazardous wastes and materials.

In addition, 50 percent of the total extremely hazardous and hazardous wastes are considered to be major waste streams under SB 14 regulations. Background information on the waste generating processes and input materials for the smaller waste streams that contribute to the total waste generated is not as readily available as the information for larger waste streams.

Because of the above factors, some of the source reduction approaches, source reduction measures evaluation criteria, and the matrix for source reduction measure evaluation recommended by SB 14 cannot be readily applied to the Station. To this end, a narrative feasibility analysis is provided for each of the possible source reduction alternatives.

1.4 Measure Evaluation Summary and Selected Measures

Because the number of potentially viable measures for MCAS El Toro's waste streams was limited, a matrix analysis for each CWC was not done. Instead, a narrative analysis for each evaluation criteria is presented in this current Plan for the applicable (major) waste streams. Table 1-4 presents a summary of the measures that were evaluated for source reduction. Those measures evaluated and rejected in the 1991 Plan that are still considered not applicable (based on a change in waste generation or because better alternatives are available) were not reevaluated.

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Table 1-4
Summary of Waste Minimization Options Investigated at MCAS El Toro
El Toro, California

CWC	Waste Description	Waste Minimization Options	Method (a)	Implementation Status (b)	Implementation Schedule (c)	Expected Waste Reduction (d)	Comments
NA	NA	Stationwide Administrative Measures					
	See Section 4.0	Option 1. Establish waste minimization committees	S	I	Jan. 1995	NQ	This option was recommended in 1991 and has not yet been implemented.
		Option 2. Establish an employee training program	S	I	Jan. 1995	NQ	24-Hour Hazardous Materials Training Course will be expanded to include more than one hour of waste minimization instruction
		Option 3. Establish an employee recognition/incentive program	S	I	Jan. 1995	NQ	MCAS El Toro will continue to promote and recognize HAZMIN successes.
		Option 4. Implement a hazardous material tracking program	S	I	June 1995	NQ	This option was recommended in 1991 and has not yet been implemented.
		Option 5. Implement a hazardous waste tracking program	S	I	June 1995	NQ	This option was recommended in 1991 and has not yet been implemented.
		Option 6. Develop new military specs	S	A	—	TBD	

a
S - Source Reduction
R - Recycling

b
A - Additional investigation required
El - Scheduled for evaluation and then, if feasible, implementation
I - Scheduled for implementation

c
Implementation is planned by the end of the month presented in this column.

d
NQ - Not quantifiable
TBD - To be determined

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Table 1-4 (Continued)
Summary of Waste Minimization Options Investigated at MCAS El Toro
El Toro, California

CWC	Waste Description	Waste Minimization Options	Method (a)	Implementation Status (b)	Implementation Schedule (c)	Expected Waste Reduction (d)	Comments
141 EHW	Off-specification, aged, or surplus inorganics	Option 1. Control hazardous materials inventory	S	I	Jan. 1995	100%	Good materials management will effectively eliminate wastes from surplus inventory.
	See Section 5.0	Option 2. Return surplus chemicals to DRMO	S	I	July 1994	100%	Currently an existing option. Needs more emphasis to be fully used.
181 and 725 EHW	Spent mercury batteries and waste mercury	Option 1. Substitute mercury batteries with non-mercury batteries	S	I	Jan. 1995	100%	Will result in a cost savings of approximately $200.
	See Section 6.0	Option 2. Recycle spent mercury batteries off-Station	R	I	Jan. 1995	0%	This is a waste recycling measure. Waste reduction is zero.
541 EHW	Photochemical/ photoprocessing waste	Option 1. Substitute photochemical bleach with non-mercuric bleach	S	I	Jan. 1995	100%	Will result in a cost savings of approximately $250.
	See Section 7.0	Option 2. Control hazardous materials inventory	S	I	Jan. 1995	100%	Good materials management at the squadron level will effectively eliminate wastes from surplus inventory.
		Option 3. Employee Training	S	I	Jan. 1995	NQ	

a
S - Source Reduction
R - Recycling

b
A - Additional investigation required
El - Scheduled for evaluation and then, if feasible, implementation
I - Scheduled for implementation

c
Implementation is planned by the end of the month presented in this column.

d
NQ - Not quantifiable
TBD - To be determined

[This page intentionally left blank.]

Table 1-4 (Continued)
Summary of Waste Minimization Options Investigated at MCAS El Toro
El Toro, California

CWC	Waste Description	Waste Minimization Options	Method (a)	Implementation Status (b)	Implementation Schedule (c)	Expected Waste Reduction (d)	Comments
791 EHW	Liquids with pH <2	Option 1. Evaluate use of alternative cleaners	S	EI	Dec. 1994	NQ	
	See Section 8.0	Option 2. Control hazardous materials inventory	S	I	Jan. 1995	100%	Good materials management will effectively eliminate wastes from surplus inventory.
		Option 3. Return surplus chemicals to DRMO	S	I	July 1994	100%	Currently an existing option. Needs more emphasis to be fully used.
222 HW	Water contaminated with fuel	Option 1. Install high level alarms or automatic feed cutoff systems on bulk fuel storage tanks	S	EI	Dec. 1994	NQ	
	See Section 9.0	Option 2. Evaluate existing spill prevention, management, and cleanup procedures	S	EI	July 1994	NQ	
		Option 3. Employee training	S	I	Jan. 1995	NQ	
223 HW	Unspecified oil-containing waste	Option 1. Evaluate other absorbents	S	EI	Dec. 1994	NQ	MCAS El Toro is currently conducting such an evaluation
	See Section 10.0	Option 2. Use a rag supplier/recycler service	S	I	Jan. 1995	100%	MCAS El Toro is currently contracting for a supplier/recycler.
		Option 3. Recycle used oil and fuel filters	R	I	July 1994	0%	MCAS El Toro currently recycles approximately 20 drums of filters per month.

a
S - Source Reduction
R - Recycling

b
A - Additional investigation required
EI - Scheduled for evaluation and then, if feasible, implementation
I - Scheduled for implementation

c
Implementation is planned by the end of the month presented in this column.

d
NQ - Not quantifiable
TBD - To be determined

MCAS\ELTORO\WASTEMIN\TABLE 1-4\11-25-94

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2.0 Background and Site Information

2.1 Site Information

EPA Identification Number:	CA 6170023208
Generator's Name:	Marine Corps Air Station El Toro
Mailing Address:	Facilities Management Division Code - 1JG
	Santa Ana, California 92079-5001
Site Address:	Same as above
Telephone number:	714/726-2772
Contact Name:	Capt. D. G. Clark II
SIC Code:	9711 (National Security)

2.2 Facility Location

MCAS El Toro is located in unincorporated territory within Orange County, California, about 8 miles southeast of the city of Santa Ana, and 12 miles inland (north-northeast) from the coastal city of Laguna Beach.

The land around MCAS El Toro has historically been largely agricultural. On the south, southeast, and southwest, however, the land has been recently developed as commercial and light industrial, with some residential usage.

A map showing the Station's boundaries and location relative to local freeways and cities is presented in Figure 2-1.

2.3 Standard Industrial Classification Code

9711 (National Security)

2.4 Business Activity

The mission of MCAS El Toro is to maintain and operate facilities and provide services and material to support the operation of aviation activities and units of the operating forces of the United States Marine Corps (USMC), United States Navy (Navy), and other activities as designated by the Commandant of the Marine Corps (CMC), in coordination with the Chief of Naval Operations (CNO).

2.5 Time in Business

In July 1942, construction of a USMC pilots' fleet operational training facility began on approximately 2,320 acres in Orange County, California. On 17 March 1943, that facility was commissioned as MCAS El Toro. In 1950, MCAS El Toro was selected for development as a master jet air Station and permanent center for Marine aviation on the West Coast to support the operations and combat readiness Fleet Marine Forces, Pacific. Between 1944 and 1988, additional land was acquired to bring MCAS El Toro to its present size of 4,741 acres.

2.6 Major Products or Services

The MCAS El Toro is not a manufacturing facility and, therefore, does not produce any products. The primary mission of the Station is to maintain and operate facilities and provide services and materials to support the operation of aviation activities. The mission involves the operation, operation level, and intermediate level maintenance of a relatively large number of military aircraft and ground support equipment. Types of aircraft operated and maintained include F/A-18 Hornets, C-130 cargo aircraft, and A-6 Intruders. Ground support equipment includes generators, weapons loaders, tow tractors, trailers, trucks, and automobiles.

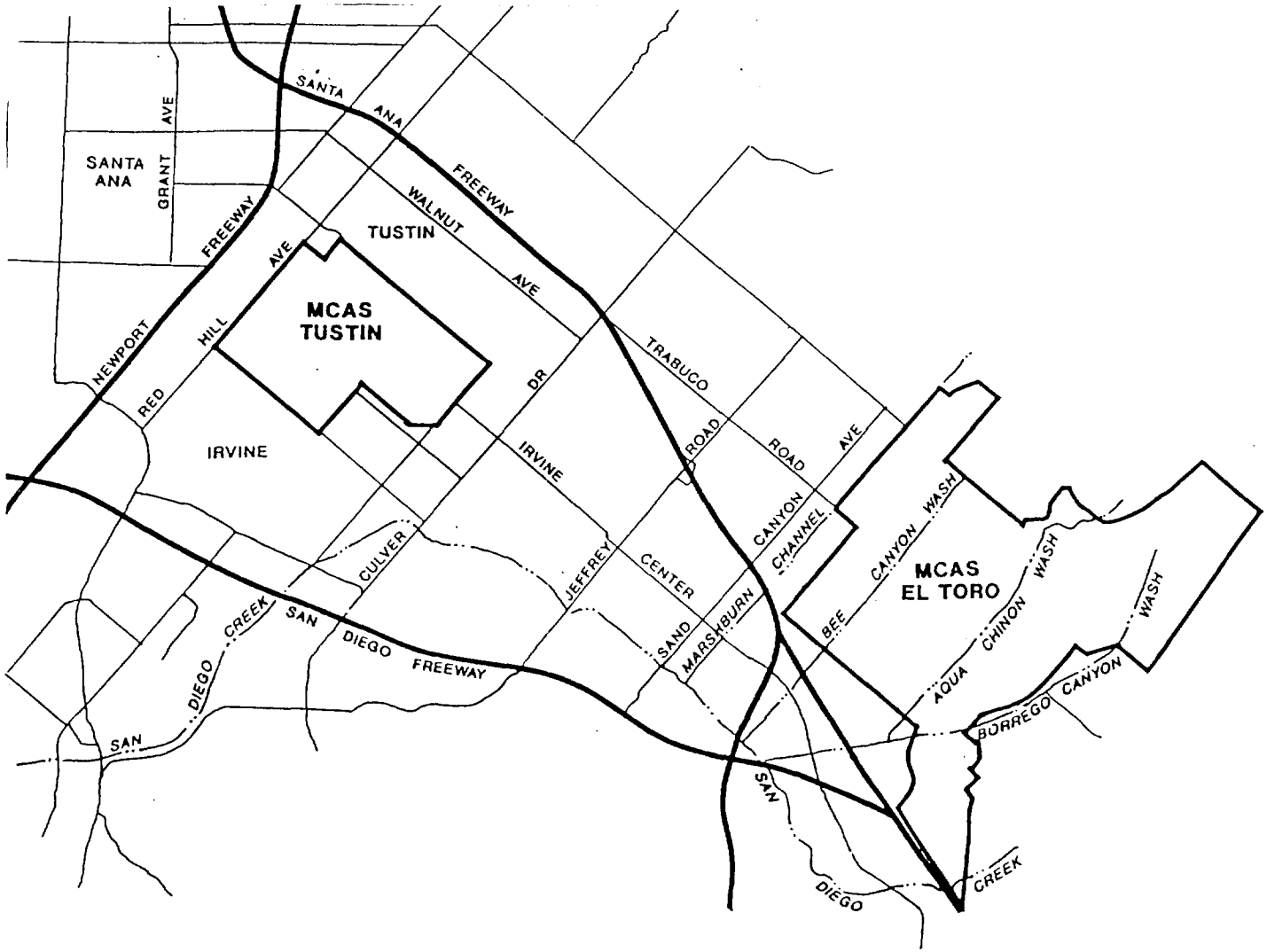

Figure 2-1

MCAS El Toro
Santa Ana, California

MCAS EL TORO AND
MCAS TUSTIN
SITE BOUNDARIES

November 5, 1993

N

SCALE
0 4000 8000 FT

Science Applications International Corporation
An Employee-Owned Company

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The aircraft and equipment operation and maintenance activities require storage and use of hazardous materials such as fuels, oil, solvents, batteries, cleaning compounds, paints, photoprocessing chemicals, decontamination agents, and other hazardous wastes at the facility. Hazardous wastes generated at MCAS El Toro are manifested and transported off-Station for disposal or recycling.

2.7 Number of Employees

The personnel employed at MCAS El Toro include the following:

Military	2,800
Civilian	1,900
Housing	7,250 military personnel and dependents

2.8 Site Description

The Station supports various tenants, though the primary tenant is the Third Marine Aircraft Wing. Various departments are responsible for the management of hazardous materials and hazardous wastes (HM/HW). The director of the Facilities Management Division (FMD) is responsible for management and disposal of HM/HW. The Environmental Office of FMD provides overall coordination of operations related to HM/HW. Other groups that have responsibility for management of HM/HW include the Supply Department (Supply), the Defense Reutilization and Marketing Office (DRMO), the Station Ground Safety Office (GSO), and individual groups and squadrons.

The responsibilities of FMD and the Environmental Office include the following:

- Interpret regulations
- Provide guidance, technical information, and training
- Provide regulatory reporting

- Conduct inspections of HM/HW storage areas
- Provide for pickup of hazardous waste from various squadrons and shops
- Sign manifests and maintain records
- Manage recycling projects
- Operate the centralized hazardous waste storage facility.

Supply is responsible for processing requisitions, procuring materials including hazardous materials, awarding contracts, and monitoring inventory levels. Hazardous materials are procured for MCAS El Toro, MCAS Tustin, and MCAS Pendleton through MCAS El Toro Supply.

The DRMO is responsible for the sales for surplus government property, which includes the sales of unused or surplus hazardous materials. If DRMO cannot identify customers at the federal level, items are made available to state and local governments. Any remaining items are sold to the public. In addition to hazardous materials, the DRMO is responsible for the disposal of hazardous waste. The DRMO selects and oversees the contracts for off-Station transportation and disposal of hazardous waste. In conjunction with the Environmental Office, DRMO inspects containers prior to shipment, and keeps records of all paper work.

The Station Ground Safety Office is in charge of the hazard communication training program. The GSO is also responsible for maintaining material and safety data sheets (MSDSs) on hazardous materials, and for evaluating employee exposure to hazardous materials.

The individual squadrons are required to handle all HM/HW in accordance with the Station's HM/HW Management Plan. Specific responsibilities include:

- Proper segregation, storage, and use of HM/HW

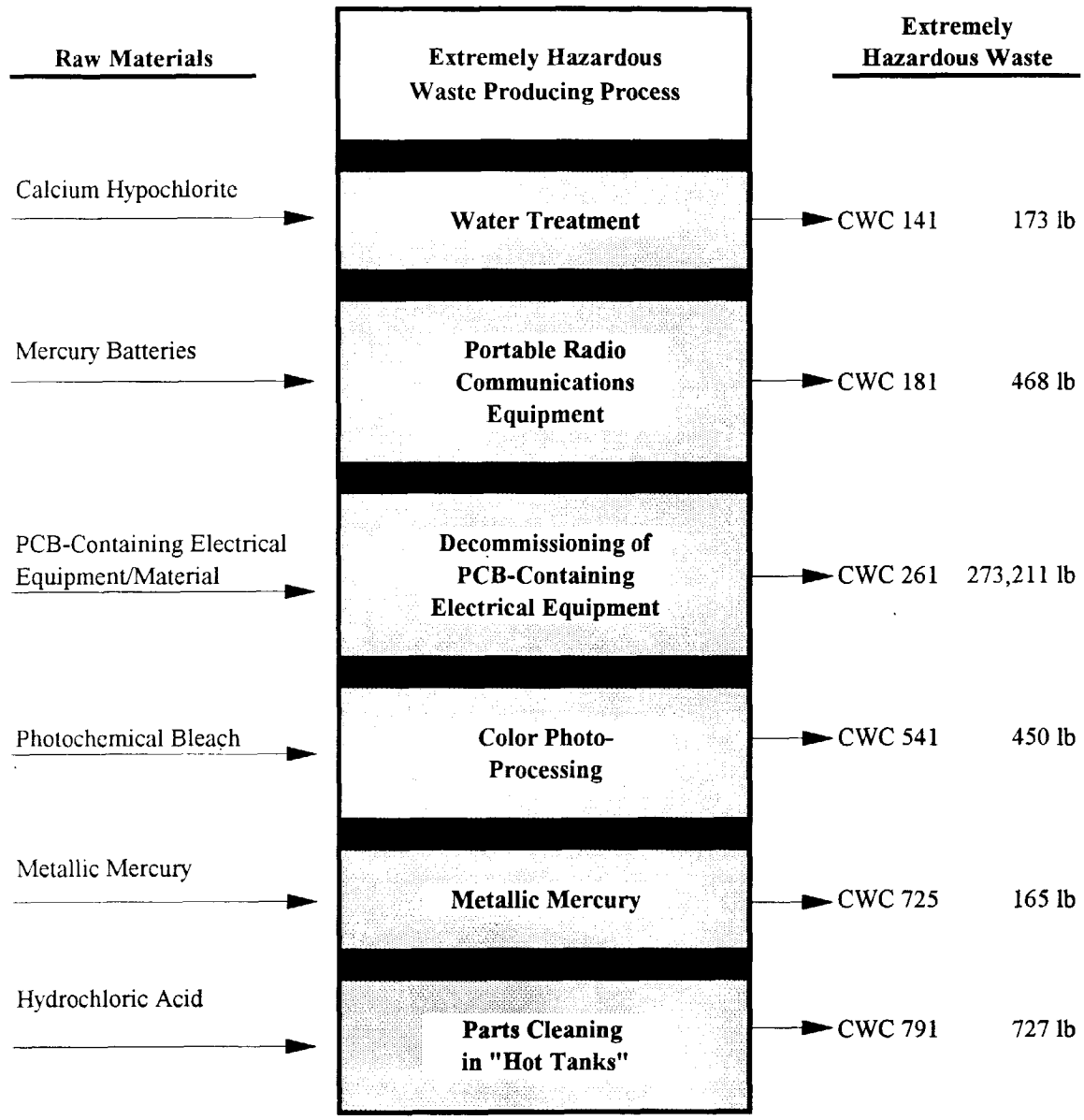
- Compliance with generator requirements for proper identification of hazardous waste, satellite accumulation restrictions, labelling of containers, container standards, and storage area standards
- Submission of surplus materials to DRMO for reutilization.

To support the Station mission, various squadrons and shops conduct maintenance and other support activities that result in the generation of hazardous wastes. The activities performed and hazardous materials used by each squadron or shop are dictated by standard operating procedures. Figures 2-2 and 2-3 are block flow diagrams of major activities that produced extremely hazardous and hazardous waste, respectively, in 1992. The processes that result in the generation of hazardous waste include:

- Aircraft maintenance, including mechanical and routine maintenance, flight preparation, and corrosion control
- Maintenance of aircraft electronic components such as circuit boards, radar, and radios
- Maintenance of ground support equipment such as tractors, trailers, trucks, generators, mobile electric power units, weapons loaders, cranes and forklifts
- Automotive servicing and repair of vehicles at the auto hobby shop and the Marine Corps Exchange automotive service station
- Painting of small aircraft components and other small metal parts. Paint booths equipped with a water cascade control system for collecting overspray are used for major painting. Touch up painting of parts is done at various squadrons and shops. Painting of large items, such as entire aircraft or vehicles, is not done at MCAS El Toro
- Abrasive blasting (i.e., sandblasting) for paint removal and cleaning
- Aircraft defueling
- Film developing and printing at the on-Station photographic laboratory, and X-ray development at dental and medical clinics.

Other activities that produce hazardous wastes include spill cleanups, site remediation, removal of PCB transformers and PCB-contaminated waste, asbestos removal, discarding of unused chemicals or chemicals with expired shelf lives, and washing of aircraft and vehicles at washracks.

All hazardous wastes are manifested and shipped off-Station for recycling, treatment, or disposal. No hazardous wastes are recycled, treated, or disposed of on-Station. Appendix A lists all the wastes manifested off-Station in CY 1992, sorted by the California Waste Code (CWC).



Note: This is not a manufacturing facility; therefore, no products are produced.

CWC = California Waste Code

Figure 2-2
Block Flow Diagram for Extremely Hazardous Waste Generated During Calendar Year 1992 at MCAS El Toro

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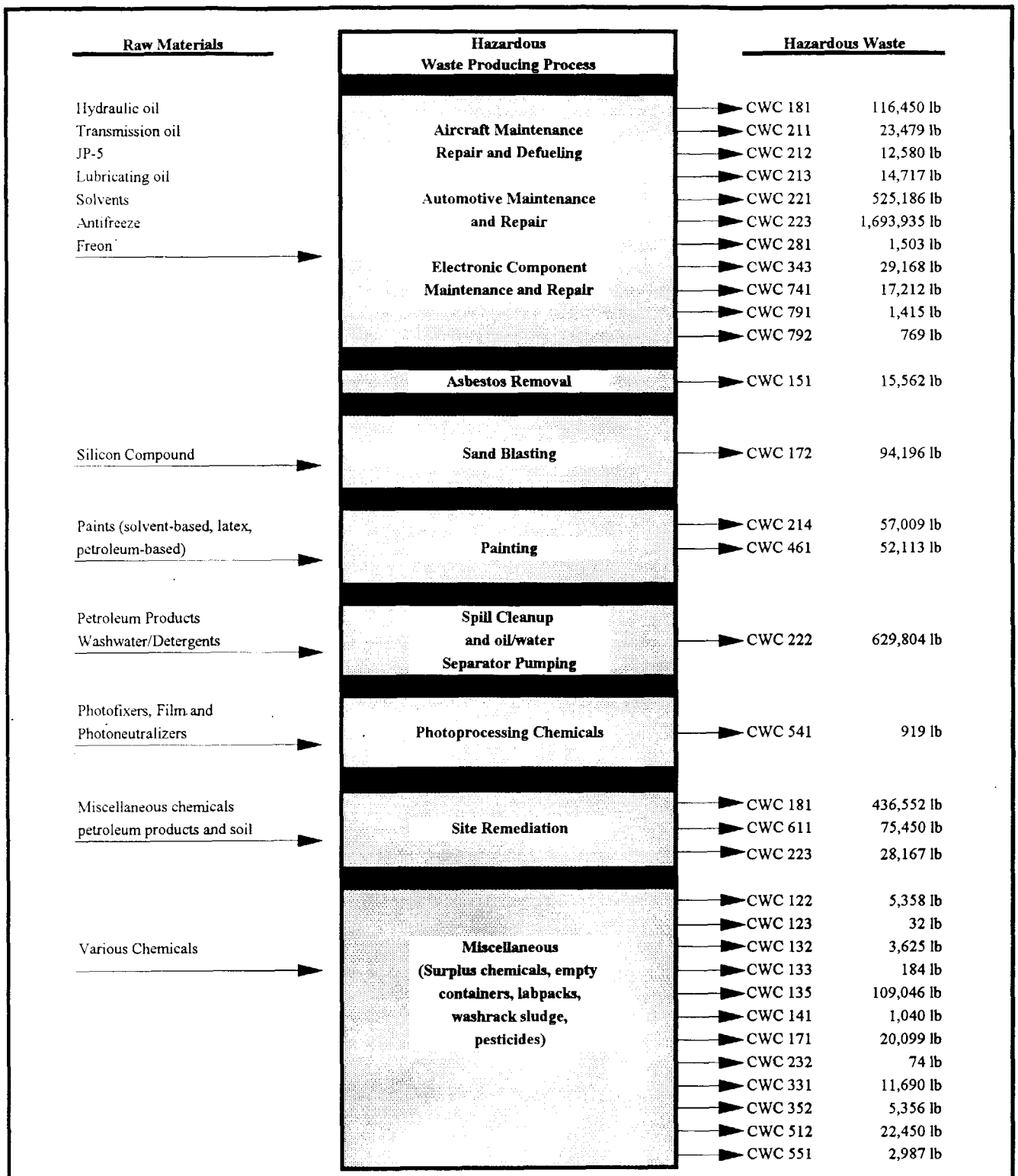

Note: This is not a manufacturing facility; therefore, no products are produced.

CWC = California Waste Code

Figure 2-3
Block Flow Diagram for Hazardous Waste Generated During Calendar Year 1992 at MCAS El Toro

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3.0 Major Hazardous Waste Streams

3.1 Introduction

The Hazardous Waste Source Reduction and Management Review Act of 1989 (SB 14) requires that a hazardous waste source reduction evaluation be conducted on those waste streams that constitute over 5 percent of the total non-exempt hazardous and extremely hazardous waste generated at the Station. This section identifies the major hazardous waste streams generated at MCAS El Toro in CY 1992. Furthermore, the current major waste streams are compared to the major waste streams identified during the baseline year, 1990, and the recommendations made in the 1990 Waste Minimization Plan are briefly discussed in Table 3-5 to measure their success in reducing the amount of hazardous waste generated at MCAS El Toro.

3.2 Waste Generated at MCAS El Toro During 1992

Information about hazardous waste types, quantities, process information, and waste management procedures used at MCAS El Toro was collected by reviewing records and by interviewing various waste generators. The records reviewed included:

- Hazardous waste manifests
- The logbook for tracking the movement of hazardous wastes from generators to the centralized storage facility
- Monthly reports to the California Regional Water Quality Control Board, Santa Ana Region
- Annual reports to the California Department of Health Services (DHS)
- Annual reports to the Naval Energy and Environmental Support Activity (NEESA)

Upon evaluation of the collected data, the manifest data sheets were considered to be more detailed and reliable than data obtained from site visits or other records. Information on hazardous waste types, quantities, waste codes, and other pertinent data from the manifests was entered in a database. The spreadsheet included in Appendix A lists the hazardous wastes shipped off-Station in 1992, sorted by California Waste Code (CWC).

To identify the waste streams subject to SB 14, hazardous and extremely hazardous wastes were separated and sorted according to their CWC. Table 3-1 lists the waste streams generated in 1992 along with the following information:

California Waste Code (CWC)

The CWCs assigned to the wastes and shipped off-Station in 1992 by the Environmental Office were taken from the hazardous waste manifests. In instances where more than one type of waste falls under a single CWC, the different types of wastes are identified separately within the CWC. For example, six different types of waste in Table 3-1 contribute to CWC 181 because the wastes that are included in this category include four types of spent batteries, one waste category for contaminated soil, and one category for generic inorganic solid waste.

Waste Type

The data in this column identifies the waste as either an extremely hazardous waste ("E"), a hazardous waste ("H"), or a nonhazardous waste ("W").

Frequency

The data in this column indicates whether the waste is generated routinely, through ongoing processes or operations, ("R") or non-routinely ("N"), or is specifically exempted from SB 14 ("X"). Exempted waste streams are listed in Title 22, Section 67100.2 (c) of the California Code of Regulations (CCR), and discussed briefly below. Waste streams identified by an "N" or "X" are not included in the determination of major hazardous waste streams for source reduction evaluation.

Table 3-1
CY 1992 Waste Generation Data
MCAS El Toro

Waste Stream	CWC	Waste Type	Frequency	Weight (lb)
Calcium hypochlorite	141	E	R	173
Mercury batteries and waste mercury	181	E	R	468
PCB containing waste	261	E	X	273,211
Photochemicals	541	E	R	450
Waste mercury metallic	725	E	R	165
Waste hydrochloric acid	792	E	R	727
Alkaline solution without metals	122	H	R	5,316
Wet alkaline batteries	122	H	R	42
Unspecified alkaline solution	123	H	R	32
Aqueous solution with metals	132	H	R	3,625
Detergent	133	H	R	184
Unspecified aqueous solution	135	H	R	109,046
Surplus inorganics	141	H	R	1,040
Asbestos	151	H	X	15,562
Washrack sludge	171	H	R	20,099
Blasting booth sand	172	H	R	94,196
Inorganic solid waste	181	H	R	114,155
Contaminated Soil	181	H	X	436,552
Lead acid batteries	181	H	X	126
Dry alkaline batteries	181	H	R	48
Lithium batteries	181	H	R	2,095
Nickel/cadmium batteries	181	H	R	26
Halogenated solvents	211	H	R	23,479
Oxygenated solvents	212	H	R	12,580
Hydrocarbon solvents	213	H	R	14,717
Unspecified solvents	214	H	R	57,009
Waste aviation fuel	221	H	X	276,556
Waste hydraulic fluid, oil, grease	221	H	X	248,630
Water with fuel and oil	222	H	R	629,656
Oil sludge	222	H	R	148

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Table 3-1 (Continued)
CY 1992 Waste Generation Data
for MCAS El Toro

Waste Stream	CWC	Waste Type	Frequency	Weight (lb)
Rag/absorbent containing oil	223	H	R	121,203
Oil and fuel filters	223	H	R	19,921
Oil containing waste	223	H	R	1,337,077
Automotive fluid, jet fuel	223	H	X	215,734
Oil contaminated soil	223	H	X	28,167
Pesticide related material	232	H	X	74
Adhesives	281	H	R	1,503
Off-spec organics	331	H	R	11,690
Liquid organic mixtures	343	H	R	29,168
Other organic solids	352	H	R	5,356
Paint waste	461	H	R	52,113
Empty containers	512	H	R	22,450
Photochemical waste	541	H	R	919
Lab waste chemicals	551	H	R	2,987
Contaminated soil from site cleanups	611	H	X	75,450
Solvents	741	H	R	17,212
Waste acids	791	H	R	1,415
Alodine and acids w/metals	792	H	R	769
Non-hazardous material	N/A	W	X	28,985
Total				**4,312,306**

CWC = California Waste Code
Waste Type
E = Extremely hazardous waste
H = Hazardous waste
W = Non-Hazardous Waste
Frequency
R = Routinely generated waste
N = Non-routinely generated waste
X = Wastes exempted by Title 22, Section 67100.2(c), California Code of Regulations
N/A = No applicable CWC

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Weight

The data in this column lists the approximate weight, in pounds, for each waste shipped off-Station in 1992.

The following wastes may be considered exempt under SB 14 regulations:

- Waste JP-5 from aircraft, waste oil from maintenance of aircraft and vehicles. According to DTSC, these wastes fall under the exemption for automotive fluids.
- Asbestos waste
- PCB waste
- Lead acid batteries
- Contaminated soil from site cleanup
- Waste pesticides and pesticide containers.

3.2.1 Extremely Hazardous Waste

In CY 1992, MCAS El Toro manifested approximately 275,000 pounds of extremely hazardous waste including wastes exempted by SB 14. PCB-containing waste, which is exempted by SB 14, accounts for greater than 99 percent of this total. The net weight of the extremely hazardous waste to be considered for SB 14 source reduction evaluation is approximately 2,000 pounds.

Table 3-2 lists the five waste streams that comprise the routinely generated extremely hazardous waste at MCAS El Toro. All five waste streams are considered major (>5 percent) because they each contribute between 8 percent and 37 percent of the total. Sections 5 through 8 evaluate each of the five waste streams. Section 6 covers both types of mercury-containing waste.

3.2.2 Hazardous Waste

In CY 1992, MCAS El Toro manifested approximately 4.01 million pounds of hazardous waste including wastes exempted by SB 14. The following waste streams are the primary contributors to the total: oil-containing waste (including spill cleanup, waste oil and petroleum products) (37 percent); water contaminated with fuel and oil (16 percent); automotive fluids (12 percent); fuel- and oil-contaminated soil (12 percent); and waste aviation fuel (7 percent). The remaining 16 percent is made up of 25 different waste streams that contribute less than 5 percent each, with the majority contributing less than 1 percent each to the total hazardous waste generated. Of the five large quantity hazardous waste streams listed above, only oil-containing waste, and water contaminated with fuel and oil are non-exempt and contribute more than 5 percent to the total. The other three are exempt from consideration under SB 14. The water contaminated with fuel and oil is primarily generated from spill cleanup, and has not been considered exempt because this waste has been generated in each of the last 4 years (1989 - 1992) and is considered to be routinely generated.

After eliminating the exempted wastes from consideration, approximately 68 percent of the 4 million pounds of hazardous waste remains for identification of major (>5 percent) hazardous waste streams subject to SB 14 source reduction evaluation. Table 3-3 lists the routinely generated hazardous waste and identifies the two major waste streams, which include:

CWC 222	Water with fuel and/or oil
CWC 223	Oil-containing waste

Sections 9 and 10 evaluate these waste streams for source reduction options.

Table 3-2
Calendar Year 1992 Routinely Generated Extremely Hazardous Waste Streams
and
Identification of Major (>5 Percent) Waste Streams
MCAS El Toro

Extremely Hazardous Waste Stream	CWC	Quantity (lb)	Percent of Total	Major (>5%) (lb)	Minor (<5%) (lb)
Calcium hypochlorite	141	173	8.72	173	
Mercury batteries and waste mercury	181	468	23.60	468	
Photochemicals	541	450	22.69	450	
Waste mercury-metallic	725	165	8.32	165	
Waste hydrochloric acid	792	727	36.66	727	
Totals		**1,983**	**100**	**1,983**	**0**

CWC - California Waste Code
Major waste streams included in SB 14 Source Reduction Evaluation

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Table 3-3
Calendar Year 1992 Routinely Generated Hazardous Waste Streams
and
Identification of Major (>5 Percent) Waste Streams
MCAS El Toro

Hazardous Waste Stream	CWC	Quantity (lb)	Percent of Total	Major (>5%) (lb)	Minor (<5%) (lb)
Alkaline solution without metals	122	5,358	0.20		5,358
Unspecified alkaline solution	123	32	0.00		32
Aqueous solution with metals	132	3,625	0.13		3,625
Detergent	133	184	0.01		184
Unspecified aqueous solution	135	109,046	4.02		109,046
Surplus inorganics	141	1,040	0.04		1,040
Washrack sludge	171	20,099	0.74		20,099
Blasting booth sand	172	94,196	3.47		94,196
Inorganic solid waste	181	116,324	4.29		116,324
Halogenated solvents	211	23,479	0.87		23,479
Oxygenated solvents	212	12,580	0.46		12,580
Hydrocarbon solvents	213	14,717	0.54		14,717
Unspecified solvents	214	57,009	2.10		57,009
Water with fuel and oil, oil sludge	222	629,804	23.23	629,804	
Oil containing waste	223	1,478,201	54.52	1,478,201	
Adhesives	281	1,503	0.06		1,503
Off-spec organics	331	11,690	0.43		11,690
Liquid organic mixtures	343	29,168	1.08		29,168
Other organic solids	352	5,356	0.20		5,356
Paint waste	461	52,113	1.92		52,113
Empty containers	512	22,450	0.83		22,450
Photochemical waste	541	919	0.03		919
Lab waste chemicals	551	2,987	0.11		2,987
Solvents	741	17,212	0.63		17,212
Waste acids	791	1,415	0.05		1,415
Alodine and acids w/metals	792	769	0.03		769
Totals		**2,711,276**	**100**	**2,108,005**	**603,271**

CWC = California Waste Code
Major waste streams included in SB 14 Source Reduction Evaluation

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3.2.3 Source Reduction Evaluation Methodology

A source reduction evaluation for each major waste stream, including process descriptions and details on selected source reduction measures, is presented in Sections 5.0 through 10.0. Source reduction options evaluated and rejected in the 1991 Waste Minimization Plan were not re-evaluated. Section 4.0 presents a description of administrative source reduction measures that apply Stationwide.

Detailed background information on processes and input materials for the major waste streams evaluated in Sections 5.0 through 10.0 has been difficult to obtain. This is partly due to the types of waste streams being evaluated and the nature of the Station's operations and processes that generate these wastes. Most waste-generating activities at the Station are batch-type operations such as maintenance of aircraft and vehicles, spill cleanups, touch-up painting, etc. These activities are conducted concurrently by multiple squadrons at the Station, each of which contributes a portion of the total hazardous waste. This makes it difficult to trace hazardous wastes and hazardous materials usage to individual processes and operations within the Station.

Because of the above factors, some of the source reduction approaches, source reduction measures evaluation criteria, and the matrix for source reduction measure evaluation required by SB 14 cannot be readily applied to the Station. As discussed in Section 4.0, MCAS El Toro will continue to implement the simpler source reduction measures under administrative steps and operational improvements that were recommended in 1991. When a tracking system for hazardous wastes and materials and a hazardous waste minimization (HAZMIN) program are established and implemented, MCAS El Toro can better evaluate other approaches to source reduction, such as input changes and production process changes, which are more process-specific.

3.3 Comparison of Waste Generated During 1990 and 1992

3.3.1 Overview

Between 1990 and 1992 the hazardous waste generated at MCAS El Toro has increased from 2.72 million pounds to 4.01 million pounds, and the extremely hazardous waste generated has increased from 20,000 pounds to 275,000 pounds. According to base personnel, this may be the result of an increase in the number of squadrons, units, shops, and activities operating out of the Station. The amount of waste generated per squadron or unit has been decreasing but due to base closures around the United States, and the transferring of operations and personnel to MCAS El Toro, the total amount of hazardous waste has been increasing. Better record keeping and more efficient tracking of hazardous waste at the Station may also have resulted in a more accurate, and possibly higher amount of waste recorded. As Station operations wind down in preparation for base closure in 1997, it is expected that the amount of non-exempt hazardous waste generated by routine operations will rapidly decrease.

Table 3-4 compares the amount of waste generated in calendar years 1990 and 1992, differentiating between extremely hazardous and hazardous waste.

3.3.2 Routinely Generated Extremely Hazardous Waste

In CY 1990, 20,000 pounds of extremely hazardous waste (EHW) was generated. PCB-contaminated material and equipment, which is exempt from consideration under SB 14, accounted for 98 percent of the EHW. The remaining 2 percent (approximately 400 pounds) consisted of five waste streams:

- Calcium hypochlorite
- Mercury batteries
- Photochemical bleach

Table 3-4
Comparison of Calendar Year 1990 and Calendar Year 1992 Waste Generation Data
MCAS El Toro

Waste Stream	CWC	Waste Type	1990 Weight (lbs)	1992 Weight (lbs)
Calcium hypochlorite	141	E	150	173
Mercury batteries and waste mercury	181	E	135	468
PCB containing waste	261	E	19,129	273,211
Photochemicals	541	E	100	450
Waste mercury metallic	725	E	2	165
Waste hydrochloric acid	792	E	10	727
Alkaline solution without metals	122	H	8,728	5,316
Wet alkaline batteries	122	H	2,000	42
Unspecified alkaline solution	123	H	-	32
Aqueous solution with metals	132	H	-	3,625
Detergent	133	H	2,669	184
Unspecified aqueous solution	135	H	25	109,046
Surplus inorganics	141	H	-	1,040
Asbestos	151	H	27,041	15,562
Washrack sludge	171	H	2,331	20,099
Blasting booth sand	172	H	13,322	94,196
Inorganic solid waste	181	H	68,535	114,155
Contaminated Soil	181	H	-	436,552
Lead acid batteries	181	H	19,361	126
Dry alkaline batteries	181	H	12,060	48
Lithium batteries	181	H	15	2,095
Nickel/cadmium batteries	181	H	2,068	26
Halogenated solvents	211	H	3,935	23,479
Oxygenated solvents	212	H	8,749	12,580
Hydrocarbon solvents	213	H	15,547	14,717
Unspecified solvents	214	H	34,059	57,009
Waste aviation fuel	221	H	1,238,471	276,556
Waste hydraulic fluid, oil, grease	221	H	1,875	248,630
Water with fuel and oil	222	H	272,716	629,656
Oil sludge	222	H	1,793	148

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Table 3-4 (Continued)
Comparison of Calendar Year 1990 and Calendar Year 1992 Waste Generation Data
MCAS El Toro

Waste Stream	CWC	Waste Type	1990 Weight (lbs)	1992 Weight (lbs)
Oil containing waste	223	H	20,822	1,337,077
Automotive fluid, jet fuel	223	H	618,261	215,734
Oil contaminated soil	223	H	26,495	28,167
Pesticide related material	232	H	-	74
Adhesives	281	H	527	1,503
Off-spec organics	331	H	600	11,690
Liquid organic mixtures	343	H	9,231	29,168
Other organic solids	352	H	710	5,356
Paint waste	461	H	33,833	52,113
Empty containers	512	H	32,909	22,450
Photochemical waste	541	H	59,647	919
Lab waste chemicals	551	H	684	2,987
Contaminated soil from site cleanups	611	H	142,660	75,450
Solvents	741	H	8,519	17,212
Waste acids	791	H	4,029	1,415
Alodine and acids w/metals	792	H	2,523	769
Total			2,716,276	**4,283,321**

CWC = California Waste Code
Waste Type
E = Extremely hazardous waste
H = Hazardous waste

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- Waste mercury
- Hydrochloric acid.

The first three each accounted for more than 5 percent of the total non-exempt EHW generated, and were included in the source reduction evaluation.

In CY 1992, 275,000 pounds of EHW were generated, and PCB-contaminated material and equipment accounted for greater than 99 percent of the total. The same five waste streams listed above account for the remaining 1 percent (approximately 2,000 pounds). Furthermore, each of the five now account for more than 5 percent of the total non-exempt EHW generated, and all five will be considered in this source reduction evaluation.

3.3.3 Routinely Generated Hazardous Waste

In CY 1990, 2.7 million pounds of hazardous waste were generated at MCAS El Toro. Of this amount, 77 percent was considered exempt from consideration under SB14. The remaining 23 percent (approximately 620,000 pounds) was composed of 26 waste streams, of which 5 were major and underwent a source reduction evaluation:

- CWC 181 Inorganic solid waste
- CWC 214 Unspecified solvents
- CWC 222 JP-5 contaminated water
- CWC 461 Paint waste
- CWC 541 Photochemicals

In CY 1992, 4.01 million pounds of hazardous waste were generated, of which 32 percent is exempt under SB14. Of the non-exempt 68 percent (approximately 2.71 million pounds), only 2 of the 30 waste streams contributed more than 5 percent of the total:

- CWC 222 Water contaminated with fuel and/or oil

- CWC 223 Oil-containing waste

The oil containing waste consists primarily includes: oil and fuel filters; oil contaminated with water, benzene, chromium, TCE and/or TCE; rags/absorbent with oil and/or petroleum products. The other 28 waste streams contributed less than 5 percent of the total, and most contributed less than 1 percent each.

3.4 Evaluation of Waste Minimization Options Recommended in 1991

This section evaluates the implementation, effectiveness, and current status of the waste minimization recommendations made in the 1991 Waste Minimization Plan. In the 1991 Plan, 55 waste minimization options were investigated, and of those, 24 were recommended for implementation, 15 were recommended for further evaluation and implementation (if feasible), 4 required additional investigation, and 12 were rejected. Table 3-5 summarizes the status of the 43 options that were not rejected.

Of the 24 recommended for implementation, 5 were Stationwide administrative measures, 7 recommended expanded employee training, 4 recommended better control of inventory, 2 recommended that surplus supplies be returned to DRMO, and 6 were process or activity specific. Only 5 of the 24 have been implemented, while 12 have been partially implemented and 7 have not been implemented. The cost savings has not yet been quantifiable because many of the options recommended for implementation have only recently been implemented, or are still under evaluation.

TABLE 3-5
EVALUATION OF WASTE MINIMIZATION OPTIONS RECOMMENDED IN 1991
MCAS EL TORO

CWC	Waste Description	Waste Minimization Options	Recommendation	Status	Comments
N/A	N/A	Stationwide Administrative Measures			
		1. Establish waste minimization committees	I	N	No initiative has been taken to form committees or update the current records keeping system
		2. Establish an employee training program	I	P	Waste minimization is covered during only one hour of the semi-annual 24-hour Hazardous Waste Management Training Course.
		3. Establish an employee recognition/ incentive program	I	N	There is no appropriate place or mode of communication to highlight employee contributions
		4. Implement a hazardous materials tracking program	I	N	Hazardous materials are tracked only as far as Supply. No tracking of usage has been implemented.
		5. Implement a hazardous waste tracking program	I	N	Hazardous wastes are tracked only after they have been generated and are ready for disposal.
		6. Develop new milspecs	A	N	No action can be taken on the base level to develop new milspecs.
141 EHW	Off-specification, aged, or surplus inorganics	1. Control hazardous materials inventory	I	P	Supply orders and keeps track of HM inventory, but once the HM leaves supply, it is not tracked
		2. Return surplus chemicals to DRMO	I	I	This option is available, though it is likely underutilized.
		3. DRMO to advertise in the California Waste Exchange Directory	E	R	DRMO is generally effective in finding new uses for HM/HW so it rarely needs to advertise.

Recommendation
- I - Scheduled for implementation
- A - Additional investigation required
- E - Scheduled for evaluation; then, if feasible, implementation

Status
- I - Has been, or is currently being implemented
- P - Partially implemented
- N - Not implemented or investigated further
- R - Rejected following evaluation

HW - Hazardous waste
EHW - Extremely hazardous waste
CWC - California Waste Code

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TABLE 3-5
EVALUATION OF WASTE MINIMIZATION OPTIONS RECOMMENDED IN 1991
MCAS EL TORO

CWC	Waste Description	Waste Minimization Options	Recommendation	Status	Comments
181 EHW	Spent mercury batteries	1. DRMO to advertise in the California Waste Exchange Directory	E	R	DRMO is generally effective in finding new uses for HM/HW so it rarely needs to advertise.
		2. Recycle spent mercury batteries off-station	I	N	This option is not cost-effective relative to disposal. The latest recommended option is to substitute non-mercuric batteries in place of mercury batteries.
541 EHW	Photochemical/ photoprocessing waste	1. Substitute photochemical bleach with nonmercuric bleach	I	N	This option has yet to be implemented. Supply must purchase the non-mercuric bleach.
		2. Control hazardous materials inventory	I	P	
		3. Employee training	I	P	Waste minimization is covered during one hour of the 24-hour Hazardous Waste Management Course.
181 HW	Other inorganic waste	Rags contaminated with oil			
		1. Use rag supplier/recycler service	I	I	MCAS El Toro is currently in the process of contracting a rag supplier/recycler service.
		2. Use drip pans and drip racks	I	I	Where appropriate, pans and racks are used.
		3. Employee training	I	P	Waste minimization is covered during one hour of the 24-hour Hazardous Waste Management Course.

Recommendation
- I - Scheduled for implementation
- A - Additional investigation required
- E - Scheduled for evaluation; then, if feasible, implementation

Status
- I - Has been, or is currently being implemented
- P - Partially implemented
- N - Not implemented or investigated further
- R - Rejected following evaluation

HW - Hazardous waste
EHW - Extremely hazardous waste
CWC - California Waste Code

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TABLE 3-5
EVALUATION OF WASTE MINIMIZATION OPTIONS RECOMMENDED IN 1991
MCAS EL TORO

CWC	Waste Description	Waste Minimization Options	Recommendation	Status	Comments
181 HW	Other inorganic waste	Oil contaminated absorbent			
		1. Evaluate other absorbents	E	I	MCAS El Toro is currently evaluating various types of absorbents.
		2. Install high level alarms or automatic shutoff valves on bulk storage tanks	E	I	High level alarms have been installed on most bulk storage tanks.
		3. As recommended by NAVAIR, use Safe Step instead of Speedy Dry for cleanup of spills.	I	N	MCAS El Toro is currently evaluating various types of absorbents.
		4. Employee training	I	P	Waste Minimization is covered during one hour of the 24-hour Hazardous Waste Management Course.
214 HW	Unspecified Solvent Mixture	1. Evaluate use of alternative cleaner	E	N	Solvent supplier/recycler is currently used.
		2. Equip solvent tanks with lids and drip racks	E	N	Solvent supplier/recycler is currently used.
		3. Investigate multistage counter-current cleaning systems in solvent tanks	E	N	Solvent supplier/recycler is currently used.
		4. Investigate use of ultrasonic cleaners	E	N	Solvent supplier/recycler is currently used.
		5. Employee training	I	P	Waste minimization is covered during one hour of the 24-hour Hazardous Waste Management Course.

Recommendation
- I - Scheduled for implementation
- A - Additional investigation required
- E - Scheduled for evaluation; then, if feasible, implementation

Status
- I - Has been, or is currently being implemented
- P - Partially implemented
- N - Not implemented or investigated further
- R - Rejected following evaluation

HW - Hazardous waste
EHW - Extremely hazardous waste
CWC - California Waste Code

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TABLE 3-5
EVALUATION OF WASTE MINIMIZATION OPTIONS RECOMMENDED IN 1991
MCAS EL TORO

CWC	Waste Description	Waste Minimization Options	Recommendation	Status	Comments
222 HW	Water contaminated with fuel	1. Install high level alarms or automatic shutoff valves on bulk storage tanks	E	I	High level alarms have been installed on most bulk storage tanks.
		2. Clean out oil/water separator on a regular basis	E	I	The oil/water separators are cleaned out as needed.
		3. Evaluate existing spill prevention, management, and clean-up procedures	E	I	Spill prevention, management and clean-up is currently being evaluated in the update of the oil SPCC and SCP.
		4. Employee training	I	P	Waste minimization is covered during one hour of the 24-hour Hazardous Waste Management Course.
		5. Evaluate on-Station treatment of fuel contaminated water	E	I	Oil/water separator is used for water/fuel mixture that is not considered too hazardous.
461 HW	Paint and paint sludges	1. Use alternative paint formulations	A	N	No analysis of alternative paint formulations has been undertaken.
		2. Use alternative paint strippers	A	N	No analysis of alternative paint strippers has been undertaken.
		3. Use alternative painting techniques	A	N	No analysis of alternative painting techniques has been undertaken.
		4. Paint removal evaluation	E	N	No evaluation of paint removal techniques has been undertaken.
		5. Use alternative paint removal techniques	E	N	No analysis of alternative paint removal techniques has been undertaken.

Recommendation
- I - Scheduled for implementation
- A - Additional investigation required
- E - Scheduled for evaluation; then, if feasible, implementation

Status
- I - Has been, or is currently being implemented
- P - Partially implemented
- N - Not implemented or investigated further
- R - Rejected following evaluation

HW - Hazardous waste
EHW - Extremely hazardous waste
CWC - California Waste Code

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TABLE 3-5
EVALUATION OF WASTE MINIMIZATION OPTIONS RECOMMENDED IN 1991
MCAS EL TORO

CWC	Waste Description	Waste Minimization Options	Recommendation	Status	Comments
461 HW		6. Employee training	I	P	Waste minimization is covered during one hour of the 24-hour Hazardous Waste Management Course.
		7. Control paint inventory	I	P	Supply orders and keeps track of HM inventory, but once the HM leaves Supply, it is not tracked.
541 HW	Photochemicals/ photoprocessing waste	1. Control hazardous materials inventory	I	P	Supply orders and keeps track of HM inventory, but once the HM leaves Supply, it is not tracked.
		2. Make up solutions only in needed quantities	I	I	As is practicable, this option is utilized.
		3. Return surplus chemicals to DRMO	I	I	This option is available though it is likely underutilized.
		4. DRMO to advertise in California Waste Exchange Directory	E	R	DRMO is generally effective in finding new uses for HM/HW so it rarely needs to advertise.
		5. Employee training	I	P	Waste minimization is covered during one hour of the 24-hour Hazardous Waste Management Course.

Recommendation
- I - Scheduled for implementation
- A - Additional investigation required
- E - Scheduled for evaluation; then, if feasible, implementation

Status
- I - Has been, or is currently being implemented
- P - Partially implemented
- N - Not implemented or investigated further
- R - Rejected following evaluation

HW - Hazardous waste
EHW - Extremely hazardous waste
CWC - California Waste Code

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4.0 Stationwide Administrative Measures

SB 14 stipulates that five approaches must be considered when developing potential source reduction measures for evaluation. The five approaches are:

- Input changes
- Operational improvement
- Production process changes
- Product reformulation
- Administrative steps, including:
  - Inventory control
  - Employee award programs
  - Employee training
  - In-house policies
  - Corporate or management commitment
  - Other programs or measures.

Because measures suggested under administrative steps apply to all generators at MCAS El Toro, the existing and proposed measures for this approach are presented in this section. Potential measures that are specific to each major hazardous waste stream and address the remaining four approaches are discussed in Sections 5.0 through 10.0.

4.1 Hazardous Waste Minimization Program

Hazardous wastes are waste materials that represent losses of valuable materials and also require a significant investment in pollution control equipment and waste management. Waste minimization must be a key component of a comprehensive waste management program for economic, environmental, and regulatory reasons. Figure 4-1 shows typical waste minimization approaches and techniques. SB 14 requires generators to minimize waste

by first considering source reduction methods. Recycling of wastes must be considered when source reduction is not feasible or practical.

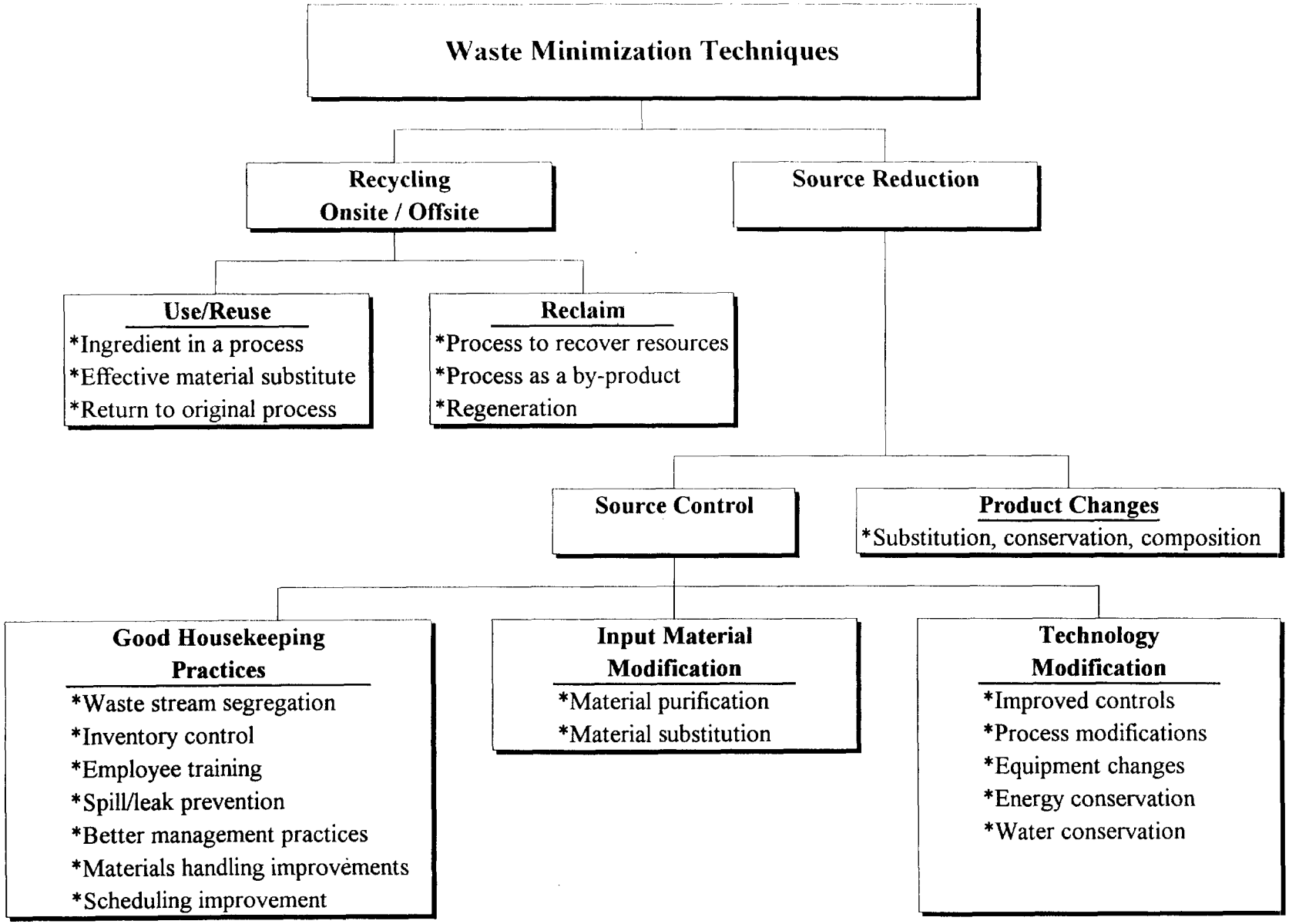
Some economic advantages for implementing a HAZMIN program include:

- Reduced transportation and disposal costs
- Reduced compliance costs for permits, monitoring, and enforcement
- Lower risk of spills, accidents, and emergencies
- Lower long-term environmental liability
- Reduced operational costs through better management and efficiency
- Reduced raw material purchases
- Income derived through sale or reuse of surplus material or recycling of hazardous waste
- Increased worker safety
- Improved public image

Existing and anticipated environmental regulations also provide a strong incentive to minimize waste. Stringent regulatory controls emphasize the importance of minimizing discharges to air, surface waters, and land, and require the development of a cost-effective and comprehensive waste management program.

A successful HAZMIN program requires planning, strong commitment from top management to allocate resources and assign priority, and provide for training of personnel. Most waste minimization efforts gain substantial momentum once senior management develops and endorses a program. Management efforts must be highly visible and sustained to gain the attention and commitment of management and staff. The program should be simple and easy to implement; evolutionary rather than revolutionary; and reward, recognize, and publicize successful minimization efforts by staff.

The Station has in-house policies that commit the Navy and USMC Command to a comprehensive HAZMIN program. However, it appears that workers (i.e., civil servants



Source: USEPA Report to Congress on the Minimization of Hazardous Waste, EPA/625/7-88-003.

Figure 4-1
Waste Minimization Techniques
MCAS El Toro

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and Marines) who handle hazardous materials and perform activities that generate hazardous waste are not fully aware of this commitment. During site visits, generators were asked about initiatives taken by individual groups to minimize the generation of hazardous waste. Except for a few instances, workers did not seem to be aware of existing waste minimization measures. Although the Environmental Office is nominally designated as the coordinator for waste minimization programs at MCAS El Toro, its emphasis in the past has been in the area of day-to-day waste management and only recently has hired personnel in charge of waste minimization and recycling. Upon implementation of the recommended source reduction methods presented in this report, the Environmental Office will place greater emphasis on waste minimization, and the awareness of Station personnel should be improved.

Figure 4-2 shows an approach for developing a HAZMIN program. Both the hazardous waste assessment study completed in March 1991 and this study follow the steps shown in the figure. It is important to continually evaluate and update the program based on lessons learned. Each program evaluation cycle should enhance management's understanding of the waste generating processes and waste streams and, consequently, help in developing measures that would work best for the facility. If the selected measures are implemented and additional information is collected, then specific measures relevant to specific processes and wastes may be developed during the next program evaluation.

The HAZMIN program steps shown in Figure 4-2 consist of the following:

- Establish a management policy

- Conduct a facility assessment to collect information on waste generation (type, composition, and quantities), process information, and waste management costs -

The *Comprehensive Hazardous Waste Minimization Survey Guide* (NEESA Report 19-002, July 1990) provides extensive guidance on ways to conduct a comprehensive facility assessment.

- Identify, evaluate, and select waste minimization measures -

  Sources of information about waste minimization measures include books, journals, conference proceedings, trade associations, government research reports, regulatory agencies, and technical assistance groups. Table 4-1 is a partial list of available information sources. Some of the simplest and most effective waste minimization measures are identified by the employees who are generating the waste. Thus it is important to enhance employee awareness and encourage employee participation in any HAZMIN program. Other federal facilities that have similar processes, wastes, and management procedures may also be good sources for waste minimization measures.

- Implement and monitor the HAZMIN program -

  To ensure continued program success, procedures must be established to implement, monitor, and evaluate the waste minimization measures. SB 14 requires implementation schedules to be included in a waste minimization plan for the selected measures. In addition, the entire plan must be evaluated every 4 years, and a report must be prepared to document the results of implementing selected waste minimization measures.

4.2 Proposed Waste Management Program Improvement Options

The following sections describe existing waste minimization policies at MCAS El Toro and suggestions on ways to improve the program.

4.2.1 In-House Policies

The Chief of Naval Operations and CMC have committed the Navy and USMC commands to a Department of Navy comprehensive HAZMIN program. The goal of this program was to achieve a 50 percent (by weight) reduction of hazardous waste generated by calendar year 1992, using calendar year 1987 as the baseline year. Policy statements initiating and

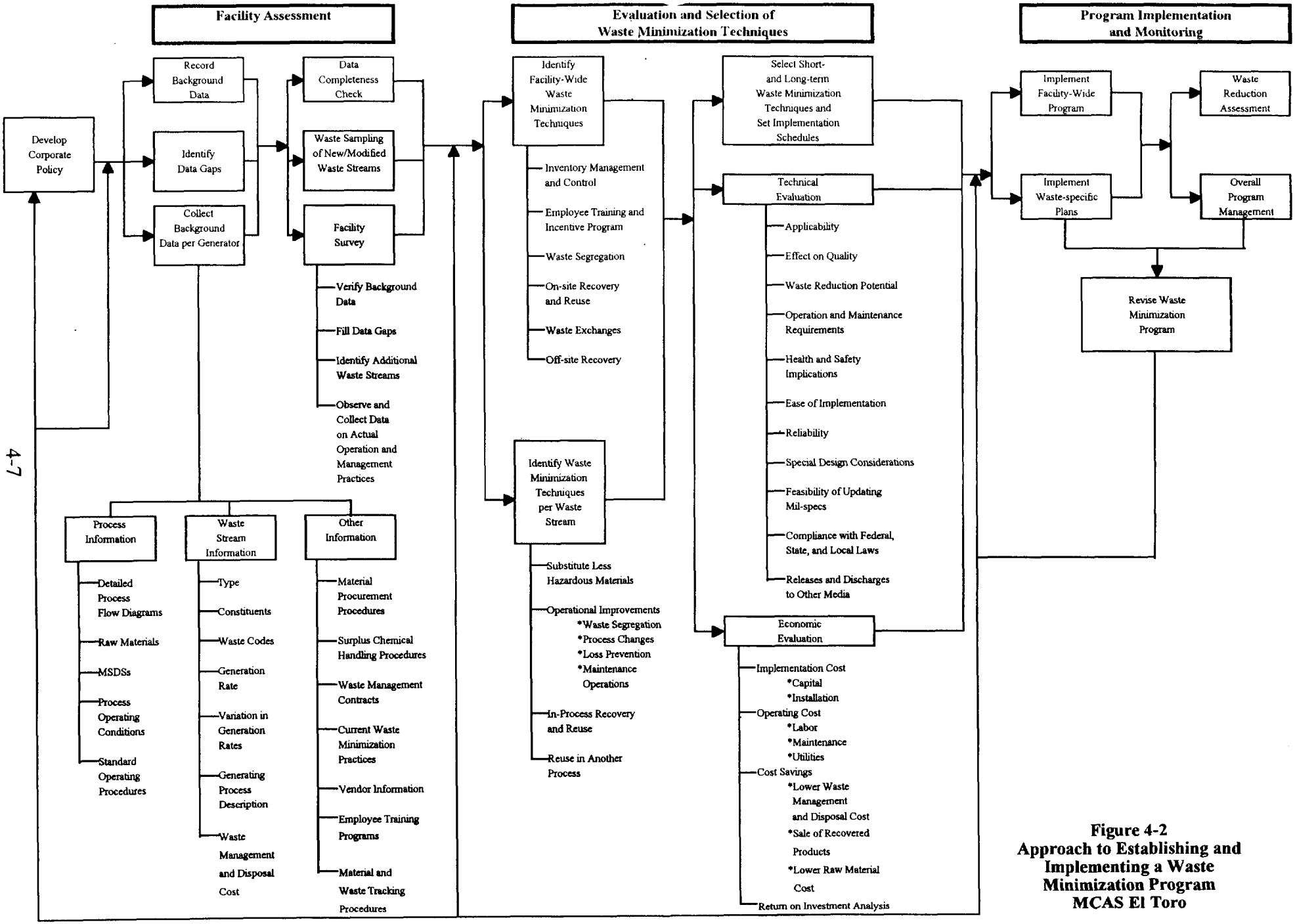

Figure 4-2
Approach to Establishing and Implementing a Waste Minimization Program
MCAS El Toro

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Table 4-1 Selected Waste Minimization Publications and Information Hotlines	
Source	**Document/Hotlines**
Department of Health Services Toxic Substances Control Program 916/324-1807	Waste Audit Studies and Checklists - Automotive Paint Shop WA001) - Automotive Repairs (WA002-WA004) - Photoprocessing Industry (WA014) - Other
Lewis Publishers	Hazardous Waste Minimization Handbook Thomas Higgins; 1989
U.S. Environmental Protection Agency 401 M. Street, SW (PM-219) Washington, DC 20460	Pollution Prevention News (Monthly Publication)
The Government Institutes, Inc. 301/251-9250	Hazardous and Solid Waste Minimization and Recycling Report (Monthly Publication)
Hazardous Materials Control Research Institute 301/587-9390	FOCUS (Monthly Publication)
Air & Waste Management Association P.O. Box 2861 Pittsburgh, PA 15203	Hazardous Waste Minimization: Industrial Overviews Order Code RS-14; 1989
American Chemical Society, 1985	Less is better - Laboratory Chemical Management for Waste Reduction
University of Alberta	Hazardous Chemicals Information and Disposal Guide: M.A. Armour; L.M. Browne; and G.L. Weir
Noyes Data Corporation (NDC)	Spill Prevention and Fail-Safe Engineering for Petroleum and Related Products Goodier, Siclari, and Garrity
Government Institutes, Inc. Rockville, MD	Hazardous and Solid Waste Minimization and Recycling Report
Pacific Materials Exchange Spokane, WA	Resource Exchange and News - Exchanging Waste, Information, and Technology Internationally
Pollution Prevention Clearing House	(202) 260-1023
Pollution Prevention Information Exchange System	(703) 506-1025

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supporting HAZMIN programs issued by the Department of Defense, the Navy, and the CMC include the following:

1. Marine Corps Order (MCO) 6280.8 dated 23 July 1987 establishes the HAZMIN program, identifies waste minimization techniques and funding mechanisms, and directs officers to develop and implement HAZMIN programs at all USMC activities.

2. Naval Operation Notice (OPNAVNOTE) 5090 dated 18 May 1988 establishes the Navy HAZMIN Program and states that commanders/commanding officers are "responsible for implementing the Navy HAZMIN program at their activities and meeting activity HAZMIN goals." The OPNAVNOTE also states that the Program ". . . is not exclusively an environmental program; it must be a cooperative venture of operations, production, public works, supply, safety, health, and environmental personnel at every level of command."

3. Air Base Order (ABO) 5090.1B issued 4 December 1990 describes the hazardous material and waste handling, transfer, and disposal program to be followed by all Station personnel.

Copies of MCO 6280.8 and of the OPNAVNOTE 5090 are included in Appendix C. A copy of ABO 5090.1B may be obtained from the Station's Environmental Office. These policies show the top management support and commitment to waste minimization.

The following options are suggested to develop and implement a HAZMIN program.

Option 1 - Establish Waste Minimization Committees

Successful HAZMIN programs have the following two essential elements in common:

- Strong motivation of personnel to implement and maintain the necessary changes
- Waste minimization technologies that are simple to implement.

One of these elements was usually missing in Waste Minimization Programs that failed.

Suggested ways to motivate personnel to include publicizing top management support, employee recognition for successful minimization efforts, involvement of operations personnel in the planning phase, and publicizing cost savings resulting from implementation of selected measures.

A successful HAZMIN program requires an effective team to lead the program, assemble baseline information, and make recommendations to management. A two-tier system of waste minimization teams is recommended for implementation at MCAS El Toro. The first team (tentatively identified as the Hazardous Materials and Hazardous Waste Policy Committee [HM/HW PC]) will be a management group that has authority to set waste minimization policy for the Station. This committee will be composed of appropriate representatives from the following areas:

- Environmental Office
- Supply
- Ground Safety Office
- A representative from Operations and a representative from Maintenance for each Wing at the Station
- Others as considered necessary

It is proposed that the HM/HW PC meet at least twice per year, with additional meetings to be held as needed.

In addition to the HM/HW PC, a second group (tentatively identified as the HM/HW Task Force Committee [HM/HW TFC]) will address waste minimization at the generator level. Members of the HM/HW TFC should be knowledgeable about the waste-generating processes and know other detailed information shown in Figure 4-2. This committee will be composed of the HM/HW coordinators (currently existing positions at the Station),

representatives from the Environmental Office, and others as necessary. Initially, it is proposed that the HM/HW TFC meet on a monthly basis for a period of 6 months. After 6 months, an evaluation of the meeting frequency will be made and adjustments considered. It should be noted that the meetings are not planned to be reduced below a minimum frequency of one meeting every 3 months (i.e., quarterly meetings).

The HM/HW TFC may be responsible for the following:

- Establish HAZMIN program goals
- Provide overall coordination and direction
- Implement the steps shown in Figure 4-2
- Document and disseminate collected information to employees
- Conduct classroom and on-the-job employee training
- Continually evaluate, implement, and monitor the program success.

The details on the two committees for waste minimization will be provided to Station personnel in an Air Base Order (ABO). These committees are planned to be in place and operational by January 1995.

Option 2 - Establish an Employee Training Program

Currently, the HM/HW coordinators, managers, and employees who handle hazardous materials and hazardous waste attend a 24-hour hazardous waste management training course offered by the Environmental Office. Appendix B contains an outline of the course. The training course is offered twice a year. Waste minimization information addressed in the course includes the following:

- MCAS El Toro's recycling program
- Spill cleanup procedures
- Shelf Life Program

- DRMO's hazardous material return procedures.

In addition, personnel are encouraged to attend other training courses or seminars offered by other government and regulatory agencies.

A more detailed HAZMIN course will be incorporated in the current 24-hour training course. In addition to the usual attendees of the 24-hour course, the hazardous materials purchasing coordinator for each squadron will also attend the waste minimization course. It is planned that these hazardous materials purchasing coordinators will attend the course only once. A suggested course outline is shown in Table 4-2. After receiving the classroom training, the HM/HW coordinators will provide a training session on waste minimization for the workers in their individual squadrons. The Station plans to implement the enhanced waste minimization training course by January 1995.

Station personnel should also be encouraged to attend conferences, seminars, workshops, trade shows, and professional society meetings pertaining to waste minimization. Such participation will help members stay abreast of new developments. Members must also stay current with waste minimization efforts at other United States military installations of the Navy, Army, Air Force, and the Marine Corps. The Defense Technical Information Center acts as a central repository of scientific and technical information generated by military services and contractors. The center may be a useful source of information for waste minimization studies conducted in the past.

Option 3 - Establish an Employee Recognition/Incentive Program

Following management's commitment to a HAZMIN program and establishing a program task force, the next important step is establishing employee involvement and commitment to the program. Civilian HAZMIN programs consisting of bonuses, cash awards, plaques, publicizing efforts in newsletters and during training courses, and other forms of recognition are typically used to motivate employees and boost cooperation and participation in a waste

Table 4-2
Suggested Training Course Outline

- Waste Minimization Definition
  - Source reduction
  - Waste minimization
  - Treatment
- Incentives
  - Regulatory requirements and penalties
  - Reduced liability and cost
  - Department of Defense commitment
- MCAS El Toro's HAZMIN Program
  - Policies
  - Task force
  - Conducting facility assessments
  - Waste minimization measures evaluation and selection
  - Program implementation and monitoring
- Hazardous Materials/Hazardous Waste Computerized Tracking System(s)
- Program Status
  - Ongoing programs
  - Proposed programs
  - Successful case studies
  - Employee contributions
- Successful Studies at Other Military Installations and Industrial Facilities
- Waste Minimization Awareness Training Video
- Case Studies

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minimization effort. MCAS El Toro, however, is not able to provide bonuses, cash awards, or gifts to its work force. Recognition will be limited to newsletters, notices on bulletin boards, or other similar measures.

In addition to recognizing individuals who originate the ideas, an effective program also acknowledges those who implement the ideas and make them succeed. The specifics of an employee recognition program at MCAS El Toro will be established by the Environmental Office. The Station plans to implement an employee recognition program by the end of January 1995.

4.2.2 Materials/Waste Handling and Management

Management of hazardous materials and hazardous waste is the responsibility of Supply and DRMO along with FMD. The functions and procedures followed by each unit are described in the following.

4.2.2.1 Material Handling and Management

MCAS El Toro Supply is responsible for processing requisitions, procuring material, forecasting material demands, monitoring inventory levels, and awarding contracts. The types of materials procured range from weapons systems to textiles, including hazardous materials. Hazardous materials are procured and stocked for MCAS El Toro, MCAS Tustin, and MCAS Pendleton. Supply also checks that all hazardous materials received are properly labelled and handled in accordance with safety regulations.

Because the DOD supply system serves many diverse customers, a Federal Supply Catalog System (FSCS) is maintained by the Defense Logistics Agency (DLA). The FSCS contains National Stock Numbers (NSNs) for all items that can be procured through Supply. Each item in the system is assigned a unique NSN. Approximately 4.7 million NSN items are used by the Army, Navy, Air Force, and USMC.

All supplies used by the Station are obtained by Supply. However, Supply does not have control over the types of materials ordered. For example, any material with a NSN can be obtained from the General Service Administration (GSA), a large government clearing house, even if the material is banned from use in California.

Most chemicals used at MCAS El Toro meet the general characteristics and the acceptable performance standards described in Military Specifications (MIL-specs). For many chemicals, MIL-specs also specify procedures on how the chemicals can be used. Materials that meet long-standing MIL-specs may not necessarily be less toxic chemical formulations. When spent, these materials often result in hazardous wastes which are expensive to dispose of. The MIL-specs cannot be changed by the Station. Most MIL-spec changes for the Station must come from Naval Air Systems Command or NAVFAC. An alternative to revising existing specifications may be to create new MIL-specs.

4.2.2.2 Waste Handling and Management

In addition to supplying materials, DLA is also tasked with the disposal of hazardous properties. The DLA accomplishes this task through its 217 DRMOs and satellite branches located at various military installations. The DRMO at MCAS El Toro is responsible for awarding contracts to treatment, storage, and disposal facilities for disposing of hazardous wastes. Prior to shipment of wastes, the DRMO inspects waste containers and insures that the appropriate documentation is completed.

Hazardous wastes are generated at a number of squadrons, groups, and shops. Wastes are accumulated in containers at generator accumulation areas for less than 90 days. Prior to the expiration of the 90 days, FMD is contacted to schedule a pickup. Containers are then transferred to the on-Station centralized storage facility. Exceptions to this process are shipments of bulk petroleum recyclables (i.e., oil, fuel). These are transported by FMD pump truck directly from the accumulation containers to bulk waste oil and fuel storage tanks. The FMD pump truck also pumps out oil/water separators and waste oil bowsers and

tanks used by generators to accumulate waste oil. The bulk waste tanks are eventually pumped out by an off-Station recycler. Additionally, waste solvent is removed directly from solvent accumulation containers by an outside contractor for recycling.

The FMD and the Environmental Office are responsible for the inspection and transport of waste containers. The Environmental Office maintains a logbook in which an entry is made every time a container is picked up from a generator. Specific information included in the logbook consists of:

- Date of scheduled pickup
- Generator name, HM/HW coordinator name, building number, telephone extension
- Drum identification number
- Container type (e.g., box, drum) and size (e.g., 55- or 85-gallon)
- Physical form of container contents (e.g., liquid or solid)
- Common name for container contents (e.g., rags with oil, solvents)
- Chemical name in addition to the common name (e.g., PD-680 in addition to solvent)
- EPA waste identification number (e.g., F001, D002)
- Generating process description
- Weight
- Date container is received at the storage facility
- Centralized storage facility bay number where the drum is stored
- Waste analysis (e.g., record sample number if a sample was collected)
- Waste profile sheet number
- Manifest number and the date on which the sample is shipped off-Station
- Deliver order number.

4.2.2.3 Suggestions to Improve the HM/HW Management Program

Option 4 - Implement a Hazardous Material Tracking Program

An integral part of waste minimization is to control the use, stocking, issuing, and procuring of hazardous materials. A hazardous material tracking program needs to be established and implemented. The following information has been extracted from an ongoing program established by the San Antonio Air Logistics Center at the Kelly Air Force Base in Texas.

The first step in establishing a hazardous material control program is to evaluate the ongoing processes to determine what, where, how and why hazardous materials are being used and by whom. Such an audit will identify if the appropriate chemicals are being bought and used for the job, chemical hoarding practices, and the purchase of chemicals in large quantities for bulk discounts. Each shop must complete a material request/authorization form for each chemical used at the shop. Information contained on the form must include the following:

- Shop identification
- NSN
- MIL-specs number
- Chemical manufacturer's name and address
- Detailed description of the process and intended use of the chemical
- Justification on why the specific chemical is required
- Quantity required
- Approval by the supervisor

The form must be submitted to the Environmental Office for verification and accuracy and then forwarded to the Safety Department. An industrial hygienist will supply the following information:

- Hazardous constituents of the chemical

- Safety precautions, emergency procedures, and protective equipment requirements. A MSDS must also be attached.

- Approval or disapproval of the request. If approved, the approval period for which the request is valid must also be specified. If disapproved, the Safety Department and the shop will suggest the use of a less hazardous material.

Once the requisition is approved by the Safety Department, it can be entered into a computerized database under authorized requisitions. A copy of the form must be returned to the shop for filing and another copy sent to the Environmental Office for filing in a chemical information management notebook. A review of selected chemical request/authorization forms may identify feasible input substitutions.

An integrated computerized database should be set up that, at a minimum, may contain data files on the chemical request/authorization forms; a master file on NSN and associated information; and a purchase file on actual hazardous material purchases made by NSN, shop, and quantity. The NSN master file will provide information on shelf life codes and shelf life action codes. In addition, a file that documents the NSN and quantity of off-specification material disposed of by each shop must be created. Computerizing the information promotes instantaneous and continual tracking of materials and waste over time and between different shops; standardization and report generating capabilities; and immediate access to information not only by the shop, but by Supply, the Environmental Office, the Safety Department, and DRMO as well.

The chemical material control program suggested above has the following advantages:

- Provides documentation on types and quantities of chemicals used by various shops. If computerized, this information will be easily retrievable.

- The shop, the Environmental Office, the Ground Safety Department, and the members of the two planned waste minimization committees (i.e., HM/HW PC and HM/HW TFC) will provide input into types of hazardous materials purchased.

- Provides limited chemical inventory. Supply will limit procurement to types and quantities of materials that are approved.

- Identifies shops that generate significant quantities of off-specification hazardous material that must be disposed of as hazardous waste. Material procurement and approval procedures for these shops may then be investigated and alternate procedures suggested to reduce surplus supply.

- Chemicals close to their shelf life expiration date can be identified and transferred in time to DRMO for transfer from one shop to another, or for sale to others. Supply may be required to fill purchase requisitions by first checking DRMO's inventory of hazardous materials. When a material is not available through DRMO, the material may be purchased from other sources.

The program will need to be further refined to meet the needs of MCAS El Toro. The program will require significant allocation of budget and personnel, especially in the initial stages. The San Antonio Air Logistics Center reported experiencing initial organizational reluctance from production and engineering departments because of the magnitude of the job. The initial documentation of information on MIL-specs, manufacturer's information, and industry standards necessary to research material hazards and to verify a shop's requirements was not always easily found. The Center also reported that even though this was a very labor-intensive undertaking, the benefits far outweighed the costs.

Option 5 - Implement a Computerized Hazardous Waste Tracking System

A stand-alone computerized hazardous waste tracking database or one that ties into the hazardous materials tracking program must be developed. Hazardous waste generation information must be documented by squadron or shop. The FMD is investigating a bar code system for tracking waste from the point of generation to shipment of the waste off-Station. Information that is currently entered in logbooks will be computerized and thus easy to retrieve.

Option 6 - Develop New MIL-Specs

Development of new MIL-specs to limit the hazardous content of chemicals used by ongoing processes is an option that cannot be implemented by MCAS El Toro on its own authority. MIL-specs can be changed by the Naval Air Systems Command or by the Naval Facilities Engineering Command. Although this option cannot be directly implemented by MCAS El Toro, it should be considered for additional investigation as a potential future waste minimization measure.

4.2.3 Off-Station Recycling Programs

The Station has several ongoing hazardous waste recycling projects. The MCAS El Toro manifested approximately 4.01 million pounds of hazardous waste in 1992 for disposal or recycling off-Station. Three of the larger waste streams, waste JP-5, waste automotive fluids, and water contaminated with fuel, make up 34 percent of the total quantity. These three waste streams are recycled by an off-Station contractor. Other wastes that were recycled off-Station in 1992 include lead acid batteries, empty drums, photographic laboratory waste (recovered silver), and spent solvents.

Detailed information, though, on the amounts of wastes recycled in 1992 has been difficult to obtain. The most recent data, for 1993, is considered more detailed and reliable than in

previous years. The following types of wastes have been recycled, with their respective monthly averages in parenthesis:

- Oil (1,800 gallons)
- JP-5 (1,500 gallons)
- Batteries (300 each)
- Oil/fuel filters (20 drums)
- Used steel drums (4,500 lbs)
- Recovered silver (20 lbs).

With increased emphasis on waste minimization, it is expected that the amount of waste recycled will continue to increase.

5.0 Extremely Hazardous Waste - CWC 141
Off-Specification, Aged, or Surplus Inorganics

The only extremely hazardous waste generated in 1992 with CWC 141 is calcium hypochlorite, solid and solution. Four shipments, weighing a total of 173 pounds, were manifested off-Station for treatment or disposal. By comparison, in 1990, one 150-pound shipment of waste calcium hypochlorite was manifested off-Station.

5.1 Contributing Process

It has not been possible to identify the process that required the use of calcium hypochlorite; however, it is believed that it was probably used for water treatment. The waste calcium hypochlorite is composed of both spent hypochlorite and hypochlorite with an expired shelf life. Waste minimization measures for the expired shelf life material are considered.

5.2 Existing Waste Minimization Measures

There are no current waste minimization measures for calcium hypochlorite.

5.3 Potential Waste Minimization Measures

5.3.1 Input Changes

No input changes are recommended because a generating process has not been identified.

5.3.2 Operational Improvement

No operational improvements are recommended because a generating process has not been identified.

5.3.3 Production Process Changes

No production process changes are recommended because a generating process has not been identified.

5.3.4 Product Reformulation

No product reformulations are recommended because a product is not produced.

5.3.5 Administrative Measures

In addition to Stationwide information and recommendations presented in Section 4.0, the following measures are suggested.

Option 1 - Control Hazardous Materials Inventory

Inventory of chemicals should be controlled at individual squadrons so that chemicals are used before their expiration dates. Implementation of a hazardous materials tracking system as described in Section 4.0 should reduce surplus inventories at squadrons, and identify chemicals approaching their expiration dates.

Option 2 - Return Surplus Chemicals to DRMO

Surplus chemicals must be returned to the DRMO for use by other groups or squadrons at the Station. Surplus chemicals are also made available to DOD (i.e., U.S. Army, Navy, Air Force), state agencies, and local government. Section 4.0 provides additional details about the DRMO Chemical Reutilization Program.

Option 3 - Return Surplus Chemicals to the Supplier

This option was considered in the 1991 Plan and rejected because it would be a violation of the Federal Acquisition Regulation (FAR) which prohibits the donation of government property to the public.

Option 4 - Have DRMO Advertise in California Waste Exchange Directory

This option was considered in the 1991 Plan, but has since been rejected because it was determined that DRMO has been effective in reutilizing surplus chemicals without the need to advertise.

5.3.6 Source Reduction Evaluation

In this section, each of the waste minimization options undergo a feasibility study and comparison. The two options to be considered are: 1) Control Hazardous Materials Inventory, and 2) Return Surplus Chemicals to DRMO. These two options were considered in the 1991 Plan and are evaluated again because the first has not yet been implemented and because the second is still applicable. Both are recommended for implementation at MCAS El Toro. Two other options have been rejected and will not be considered.

5.3.6.1 Option 1 - Control Hazardous Materials Inventory

Technical Feasibility

There are no technical barriers to this option. Good material management practices will effectively eliminate the generation of hazardous waste due to surplus inventory. The hazardous material control program outlined in Section 4.0 will help to identify materials approaching shelf life expiration.

Expected Change in Hazardous Waste Generation

The reduction of waste is difficult to estimate. However, a hazardous material inventory control system designed to monitor the types of hazardous materials purchased, the locations where the materials are transferred, and the shelf life expiration dates could potentially result in a 100 percent reduction of hazardous materials discarded as hazardous waste due to expired shelf life or excess quantity. Such a system is essential to any combination of waste minimization techniques.

Economic Analysis

The costs associated with this option are for initial start-up (developing a computerized tracking system), purchase of equipment and software, designation of employees to maintain the system,

and employee training. The savings are those associated with reduced waste handling and disposal costs, and reduced new material purchasing cost.

For the 173 pounds of calcium hypochlorite disposed of in 1992, the annual savings would be $100. However, savings greater than this will be realized since the material tracking program is applied Stationwide.

Effect on Product Quality

Since a product is not produced, product quality is not a concern when controlling the hazardous materials inventory.

Employee Health and Safety

Employee health and safety should be somewhat improved by this option. Reduced hazardous waste generation will decrease employee handling of hazardous waste and the resulting exposure to the waste.

Regulatory Requirements

No regulatory requirements are applicable to the control of the hazardous materials inventory.

Releases and Discharges

The potential for release and discharge from storing, handling, and transporting hazardous waste will decrease with the reduced quantity of wastes being generated.

Implementation Schedule

This option was recommended in the 1991 Plan for implementation by June of 1993, but no significant progress has been made in implementing a tracking system. This option is still recommended, and it is anticipated that a system can be operational by January 1995.

5.3.6.2 Option 2 - Return Surplus Chemical to DRMO

Technical Feasibility

There are no technical barriers. This option already exists at MCAS El Toro and has met with limited success. Primary problems to the feasibility of this option are the coordination efforts involved. More effective advertising by DRMO is required and procedures need to be established so that Supply fills hazardous material purchase requisitions with surplus inventory at DRMO before procuring from other sources.

Expected Change in Hazardous Waste Generation

Unless the off-specification calcium hypochlorite can be reused on- or off-Station without reclamation, there is no reduction in the amount of waste generated. If the surplus inventory is used prior to disposal, a 100 percent reduction of waste will be realized.

Economic Analysis

The costs associated with this option are for employee training and improved communication within the DRMO reutilization program. This option must be coordinated with the hazardous material tracking program so that enough information is available to allow an exchange between shops on-Station or transfer of ownership to other users. The savings are those associated with reduced disposal costs if the waste is reused prior to disposal.

Effect on Product Quality

Since a product is not produced, product quality is not a concern when returning surplus chemicals to DRMO.

Employee Health and Safety

No change in the level of employee exposure to the usable calcium hypochlorite or to the discarded material, because the material will be used and treated or disposed of according to standard practice.

Regulatory Requirements

No regulatory requirements apply to the return of surplus chemicals to DRMO.

Releases and Discharges

The return of surplus chemicals to DRMO should not result in releases or discharges.

Implementation Schedule

This option currently exists at the Station although it is not often used. With increased emphasis on this option and waste minimization, this option should be more frequently selected.

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6.0 Extremely Hazardous Waste - CWCs 181 and 725
Mercury Batteries and Waste Mercury

In 1992, 633 pounds of mercury-containing waste were manifested off-Station. Of the total, 64 percent (403 pounds) were spent mercury batteries, which were shipped off-Station for disposal. The remainder included waste mercury and liquid contaminated with high levels of mercury.

6.1 Contributing Processes

The mercury batteries were probably used in portable radio communication equipment and were discarded when spent. The Supply Department orders and stocks a variety of batteries for use at the base. When batteries are ordered, the only factor considered is initial cost. This results in the purchase of mercury batteries which may be inexpensive to purchase, but can be expensive to dispose of or recycle. It has not been possible to identify the specific process that generated the waste mercury and liquid containing mercury.

6.2 Existing Waste Minimization Measures

No current waste minimization efforts are applied to this waste.

6.3 Potential Waste Minimization Measures

Source reduction measures for spent mercury batteries are limited. Recycling and substitution are the options identified for the waste stream, as described below.

6.3.1 Input Changes

Option 1 - Substitute Mercury Batteries with Non-Mercury Batteries

Because there are no applications that require the use of only mercury batteries, Supply should try and stock batteries that can be disposed of in a municipal landfill or recycled. Possible alternatives include nickel-cadmium, lithium, and dry alkaline batteries.

6.3.2 Operational Improvement

Not applicable to mercury batteries.

6.3.3 Production Process Changes

Not applicable to mercury batteries.

6.3.4 Product Reformulation

Not applicable because a product is not produced.

6.3.5 Administrative Steps

Option 2 - Recycle Spent Mercury Batteries Off-Station

A brief summary of available recycling resources is presented below.

Mercury Recovery Services (MRS) offers a number of services that include the recycling of mercury batteries. Personnel from MRS will package spent batteries, arrange for appropriate transportation, fill out manifests, and transport waste to Quicksilver Products, Inc. (QPI) in the San Francisco Bay Area. In order to supply a transportation and disposal cost estimate, MRS

requires detailed information and possibly a sample profile. The presence of zinc, lead, or acids in the waste renders recovery difficult and increases recovery cost estimates.

Quicksilver Products, Inc. is a fully-permitted (Part B) treatment, storage, and disposal facility (TSDF) located in Brisbane, California. They accept mercury-containing items from services such as MRS, or they can accept items directly from a customer. Direct shipment to QPI requires that either an employee from QPI be flown to the site from San Francisco to properly package the items, or the customer must package the items to QPI specifications. In either case, the customer must then contract a hazardous waste hauler and properly manifest the shipment.

Mercury recycling typically involves vaporization of mercury from mercury containing wastes. The vaporized mercury is condensed and recaptured. The condensed product is redistilled to obtain pure saleable product. The melted metal or plastic containers are also sold.

Table 6-1 lists the companies in the U.S. that recycle mercury.

6.3.6 Source Reduction Measure Evaluation

This section subjects the potential waste minimization options to a feasibility evaluation. The selected waste minimization option for mercury batteries are substitution recycling. Recycling was recommended for implementation in 1991, but because it is more expensive than disposal, it has not been implemented.

6.3.6.1 Option 1 - Substitute Mercury Batteries with Non-Mercury Batteries

Technical Feasibility

There are no technical barriers to this option. Many varieties of non-mercury containing batteries are available.

Expected Change in Hazardous Waste Generation

Substitution with non-mercury containing batteries will result in a 100 percent reduction in this extremely hazardous waste.

Economic Analysis

The primary reason mercury batteries are used over other types of batteries is because they are less expensive. This initial cost savings, though, is lost when the batteries are disposed of (approximately $230 for 400 pounds of mercury batteries). The cost savings will be approximately $200 due to the elimination of disposal costs.

Effect on Product Quality

Since a product is not produced, product quality is not a concern when substituting mercury batteries with non-mercury batteries.

Employee Health and Safety

Employee health and safety will be improved because of a decreased likelihood of employee contact with mercury.

Regulatory Requirements

No regulatory requirements apply to the substitution of mercury-batteries with non-mercury batteries.

Table 6-1
Industrial Recyclers of Mercury

Name	Address	Phone	Contact	Service	Materials Recycled
Bethlehem Apparatus Co.	Front and Depot Sts. Hellertown, PA 18055	(215) 838-7034	John Boyle	Processor	Any quantity of metallic mercury. Minimum quantity 1 pound for encapsulated mercury (e.g., batteries, thermometers, etc.).
Mercury Recovery Services	2021 S. Myrtle Monrovia, CA 91016	(818) 303-2053 (800) 834-8598	Bob Roberts	Processor	Fluorescent tubes. Call for service regarding all other mercury-containing materials.
Mercury Refining Co., Inc.	1218 Central Ave. Albany, NY 12205	(518) 459-0820 (800) 833-3505	Alan Winds	Processor	Any mercury-containing products (relays, dental amalgams, batteries, etc.), liquid mercury materials, and contaminated mercury materials (U151 and D009).
Mercury Technologies International	30677 Huntwood Ave. Hayward, CA 94544	(510) 429-1129	Paul Abernathy Fred Bryant	Processor	Fluorescent tubes. Call for information regarding other mercury-containing materials.
Quicksilver Products, Inc.	200 Valley Dr., Suite 1 Brisbane, CA 94005	(415) 468-2000	Ritchey Vaughn	Processor	Any quantity of metallic mercury; mercury-contaminated products (e.g., switches and thermometers).

Source: Directory of Industrial Recyclers, 1993
California Waste Exchange
Department of Toxic Substances Control
California Department of Health Services, Sacramento, CA

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Releases and Discharges

Substitution of mercury batteries with non-mercury batteries should not result in any releases or discharges.

Implementation Schedule

Once approved through Supply, this option can be immediately implemented. Approval may be expected in January 1995.

6.3.6.2 Option 2 - Recycle Spent Mercury Batteries Off-Station

Technical Feasibility

There are no technical barriers to this option. Spent mercury battery recycling resources are available off-Station and have been used in industry for several years.

Expected Change in Hazardous Waste Generation

The off-Station recycling of spent batteries will not reduce the amount of hazardous waste generated. However, rather than disposal, the mercury from the batteries can be recovered for reuse and the other components can be scrapped.

Economic Analysis

Additional information on the waste must be supplied to MRS and QPI before a price quotation can be given by these companies. The disposal costs for 403 pounds of spent mercury batteries was approximately $230 in 1992. The cost for recycling will likely approach or exceed this amount.

Effect on Product Quality

Since a product is not produced, product quality is not a concern when recycling mercury batteries.

Employee Health and Safety

Recycling will not have an effect on employee health and safety.

Regulatory Requirements

The off-Station recycler services are permitted by the appropriate regulatory agencies. As a generator, MCAS El Toro will not have additional regulatory requirements.

Releases and Discharges

The potential for releases and discharges will remain the same whether the batteries are disposed of or recycled.

Implementation Schedule

If mercury batteries cannot be substituted with non-mercury batteries, then the mercury should be recycled, if economically feasible. This option can be implemented by January 1995.

7.0 Extremely Hazardous Waste - CWC 541
Photochemical/Photoprocessing Waste

The only extremely hazardous waste generated in 1992 with CWC 541 was photochemical bleach. A single load of approximately 450 pounds was manifested off-Station for treatment or disposal. In the 1991 Waste Minimization Plan, a similar waste stream was identified as containing mercuric chloride, and the recommended waste minimization option was substitution of photochemical bleach containing mercuric chloride with non-mercuric bleach. The 1992 manifest log entry for photochemical bleach does not identify the constituents of the bleach, but conservatively, it is assumed that the photochemical bleach contains mercuric chloride.

7.1 Contributing Processes

Considering the possible composition of waste photochemical bleach, it appears that the generating process may have been the preparation of bleach-fix bath replenishment solution prepared from concentrated raw material (approximately 84 to 98 percent water). The surplus working solution may have been prepared for use but eventually discarded due to an expired shelf life.

Photochemical bleach is used in color photoprocessing. A bleach bath is used to make the color image visible by converting the metallic silver back to its oxidized form. All silver on the film is then dissolved and removed in the fixer bath. Once the silver is recovered from the fixer bath, the wastewater is typically discharged to the sanitary sewer.

At MCAS El Toro, photoprocessing is primarily done at the on-Station photographic laboratory. The photographic laboratory recovers silver from the fixer bath and disposes of the remaining wastewater to the sanitary sewer.

7.2 Existing Waste Minimization Measures

No existing waste minimization measures have been identified.

7.3 Potential Waste Minimization Measures

7.3.1 Input Changes

Option 1 - Substitute Photochemical Bleach with Non-mercuric Bleach

The potential presence of mercuric chloride in the waste photochemical bleach classifies the waste as extremely hazardous. The bleach should be substituted with one that does not contain mercury compounds. The photographic laboratory uses Kodak chemistry in its color print and negative lines, including a photochemical bleach that, when spent, is safe to dispose of in the sanitary sewer.

7.3.2 Operational Improvement

Not applicable.

7.3.3 Production Process Changes

Not applicable.

7.3.4 Product Reformulation

Not applicable.

7.3.5 Administrative Steps

In addition to information presented in Section 4.0, the following measure is suggested:

Option 2 - Control Hazardous Materials Inventory

Control the inventory of chemicals so that chemicals are used prior to expiration dates. Implementation of a hazardous materials tracking program, as described in Section 4.0, should reduce surplus inventories at squadrons, and identify chemicals approaching their expiration dates.

Option 3 - Employee Training

Educate photographic laboratory personnel on costs associated with disposing of waste and on hazardous materials control. Training will include methods to make only the amount of chemicals needed for each batch.

Post signs in photoprocessing areas with instructions on proper waste disposal and handling. Include a point-of-contact who may be called upon for questions.

7.3.6 Source Reduction Measure Evaluation

The three recommended options evaluated below are recommended for implementation. These three were also recommended in the 1991 Waste Minimization Plan, and all still apply.

7.3.6.1 Option 1 - Substitute Photochemical Bleach with Non-Mercuric Bleach

Technical Feasibility

There are no technical barriers to this option. Most of the photoprocessing occurs at the photographic laboratory where mercury-containing bleach is not used.

Expected Change in Hazardous Waste Generation

There will be a 100 percent reduction of extremely hazardous waste CWC 541.

Economic Analysis

It is assumed that there is no difference in cost between non-mercuric bleach and mercuric bleach. The savings are those associated with reduced disposal costs (approximately $250).

Effect on Product Quality

Non-mercuric bleach can be used in the photographic laboratory with no adverse effects on product quality.

Employee Health and Safety

Health and safety of employees will be improved.

Regulatory Requirements

The non-mercuric bleach that is used at the photographic laboratory along with wastewater can be discharged to the sewer in accordance with the Station's industrial waste permit. Silver is

currently recovered prior to discharge into the sanitary sewer. Any substitutes for mercuric bleach will need to meet the requirements of the industrial wastewater permit.

Releases and Discharges

Not applicable.

Implementation Schedule

This option was recommended in the 1991 Plan and is again recommended if the constituents in the bleach are found to contain mercuric chloride. If the photochemical bleach currently used is not found to contain mercuric chloride, this option is not applicable.

7.3.6.2 Option 2 - Control Hazardous Materials Inventory

Technical Feasibility

There are no technical barriers to this option.

Expected Change in Hazardous Waste Generation

There would be a 100 percent reduction of extremely hazardous waste CWC 541. An inventory system designed to monitor the types of hazardous materials that are brought on-Station would eliminate this type of material from being brought on-Station. It is apparent that this is not the typical material used by the photographic laboratory. Section 4.0 contains a description of the hazardous material tracking program recommended for implementation.

Economic Analysis

The costs associated with this option are for initial start-up, designation of an employee to maintain the system, and employee training. The savings are those associated with reduced disposal costs.

Effect on Product Quality

Since a product is not produced, product quality is not a concern when controlling the hazardous materials inventory.

Employee Health and Safety

Reduced hazardous chemical inventory will result in decreased employee exposure to hazardous materials.

Regulatory Requirements

No regulatory requirements apply to the control of the hazardous materials inventory.

Releases and Discharges

Control of the hazardous materials inventory will have no effect on releases or discharges.

Implementation Schedule

This option was recommended in the 1991 Plan for implementation by June of 1993, but no significant progress has been made in implementing a tracking system. This option is still recommended for implementation by January 1995.

7.3.6.3 Option 3 - Employee Training

Technical Feasibility

There are no technical barriers to this option.

Expected Change in Hazardous Waste Generation

The reduction of waste is difficult to estimate. However, an education program will result in better hazardous materials control and housekeeping practices, which will reduce the amount of waste generated.

Economic Analysis

The costs associated with this option are for employee training. The savings are those associated with reduced disposal and raw material purchase costs. These savings cannot be estimated since the amount of waste reduction is undefined.

Effect of Product Quality

Since a product is not produced, product quality is not a concern with employee training.

Employee Health and Safety

Employee health and safety will be improved due to better education and a higher awareness of the hazardous materials being handled.

Regulatory Requirements

No regulatory requirements apply to the implementation of this option.

Releases and Discharges

Releases and discharges may be reduced through better education, and hence, more careful handling of hazardous materials.

Implementation Schedule

The Station plans to implement this option by January 1995.

8.0 Extremely Hazardous Waste - CWC 791
Liquids with pH <2

The only extremely hazardous waste generated in 1992 with CWC 791 was waste hydrochloric acid solution. One 727 pound drum was manifested off-Station for treatment or disposal. By comparison, one gallon of HCl was manifested off-Station in 1990.

8.1 Contributing Process

The hydrochloric acid was used by the Motor Transport Unit to clean auto parts in "hot" tanks. The acid removed corrosion, plating, paint and grease.

8.2 Existing Waste Minimization Measures

There are no current waste minimization measures for hydrochloric acid.

8.3 Potential Waste Minimization Measures

8.3.1 Input Changes

Option 1 - Evaluate Use of Alternative Cleaners

Alternative cleaners, such as water-based detergents and surfactants, terpenes, and other organic substitutes may offer viable alternatives to acids in some applications. Common hydrocarbon solvents may also be used to replace hydrochloric acid.

Water-based detergents and surfactants may be effective in replacing hazardous solvents for many heavy-duty cleaning applications, such as removing greases and oils from parts. Detergents are used throughout industry, but are not suitable for cleaning of electrical and electronic components.

8.3.2 Operational Improvement

No operational improvements are recommended because parts cleaning is a necessary operation that depends on the type of cleaner. Measures recommended under Input Changes and Administrative Measures are considered more favorable.

8.3.3 Production Process Changes

No production process recommendations are recommended because a product is not produced.

8.3.4 Product Reformulation

Since a product is not produced, product reformulation is not an option.

8.3.5 Administrative Measures

In addition to Stationwide information and recommendations presented in Section 4.0, the following measures are suggested.

Option 2 - Control Hazardous Materials Inventory

Inventory of chemicals should be controlled at individual squadrons so that chemicals are used before their expiration dates. Implementation of a hazardous materials tracking system as described in Section 4.0 should reduce surplus inventories at squadrons, and identify chemicals approaching their expiration dates.

Option 3 - Return Surplus Chemicals to DRMO

Surplus chemicals must be returned to the DRMO for use by other groups or squadrons at the Station. Surplus chemicals are also made available to DOD (i.e., U.S. Army, Navy, Air

Force), state agencies, and local government. Section 4.0 provides additional details on the DRMO Chemical Reutilization Program.

8.3.6 Source Reduction Evaluation

In this section, each of the waste minimization options undergo a feasibility study and comparison. The three options considered are: 1) Evaluate Use of Alternative Cleaners, 2) Control Hazardous Materials Inventory, and 3) Return Surplus Chemicals to DRMO. The first option is recommended for implementation at MCAS El Toro. The other two options, though necessary on a Stationwide basis, have been rejected in favor of the first option for this extremely hazardous waste.

8.3.6.1 Option 1 - Evaluate Use of Alternative Cleaners

Technical Feasibility

Aqueous cleaners usually require a fair degree of agitation to assure effective cleaning. Modification of a cleaning tank to provide for agitation of the liquid may include adding a liquid recirculating pump or compressed air blower. Aqueous cleaners can corrode a cleaning tank. Modification may involve inserting a protective liner into the tank, or choosing a non-corrosive aqueous cleaner.

When evaluating alternative cleaners, some points to consider include:

- Comparative effectiveness
- Expected life
- Ease of recycling/treating spent cleaners.

Expected Change in Hazardous Waste Generation

Hazardous waste generation reduction will depend upon the number of nonhazardous applications in which alternative cleaners are substituted for the existing solvents. Use of nonhazardous cleaners should reduce the hazardous waste generation in proportion to the extent to which they replace previously used solvents.

Note that nonhazardous cleaners may have to be disposed of as hazardous waste depending upon the contaminants removed.

Economic Analysis

The costs associated with the implementation of this alternative include the initial evaluation and purchase of alternative cleaners, and the disposal cost of the cleaners. Cost savings may be realized as a result of decreased purchase and disposal costs.

Disposal cost for spent aqueous cleaners may be high or low, depending upon the nonhazardous or hazardous classification of the spent cleaner. If a spent cleaner is classified as hazardous, the recycling/treatment costs may be higher compared to conventional solvents.

Effect on Product Quality

Some alternative cleaners may leave a film. This may or may not be critical or desirable depending on the particular item being cleaned. In cases where it is critical, an alternative cleaner that does not leave a film may be used, or a clean hot water rinse (approximately 200°F) could be used after the initial rinse. A hot water rinse is not recommended for electronic components.

Employee Health and Safety

While it is necessary to review the individual MSDSs for each alternative cleaner, the alternative cleaners are generally safer for employees to use than acids. The use of nonflammable cleaners should improve fire safety.

Regulatory Requirements

No regulatory requirements apply to the evaluation of alternative cleaners.

Releases and Discharge

The evaluation should not result in any releases or discharges.

Implementation Schedule

The Station no longer uses hydrochloric acid as a cleaner, so this option is not scheduled for further evaluation.

8.3.6.2 Option 2 - Control Hazardous Materials Inventory

Technical Feasibility

There are no technical barriers to this option. Good material management practices will effectively eliminate the generation of hazardous waste due to surplus inventory. The hazardous material control program outlined in Section 4.0 will help to identify materials approaching shelf life expiration.

Expected Change in Hazardous Waste Generation

The reduction of waste is difficult to estimate. However, a hazardous material inventory control system designed to monitor the types of hazardous materials purchased, the locations where the materials are transferred, and the shelf life expiration dates could potentially result in a 100 percent reduction of hazardous materials discarded as hazardous waste due to expired shelf life or excess quantity. Such a system is essential to any combination of waste minimization techniques.

Economic Analysis

The costs associated with this option are for initial start-up (developing a computerized tracking system), purchase of equipment and software, designation of employees to maintain the system, and employee training. The savings are those associated with reduced waste handling and disposal costs, and reduced new material purchasing cost.

Effect on Product Quality

Not applicable because a product is not produced.

Employee Health and Safety

Employee health and safety should be somewhat improved by this option. Reduced hazardous waste generation will decrease employee handling of hazardous waste and the resulting exposure to the waste.

Regulatory Requirements

No regulatory requirements apply to the control of the hazardous materials inventory.

Releases and Discharges

The potential for release and discharge from storing, handling, and transporting hazardous waste will decrease with the reduced quantity of wastes being generated.

Implementation Schedule

This option was recommended in the 1991 Plan for implementation by June of 1993, but no significant progress has been made in implementing a tracking system. This option is still recommended for implementation by January 1995.

8.3.6.3 Option 3 - Return Surplus Chemical to DRMO

Technical Feasibility

There are no technical barriers. This option already exists at MCAS El Toro and has met with limited success. Primary problems to the feasibility of this option are the coordination efforts involved. More effective advertising by DRMO is required and procedures need to be established so that Supply fills hazardous material purchase requisitions with surplus inventory at DRMO before procuring from other sources.

Expected Change in Hazardous Waste Generation

Unless the off-specification calcium hypochlorite can be reused on- or off-Station without reclamation, there is no reduction in the amount of waste generated. If the surplus inventory is used prior to disposal, a 100 percent reduction of waste will be realized.

Economic Analysis

The costs associated with this option are for employee training and improved communication within the DRMO reutilization program. This option must be coordinated with the hazardous material tracking program so that enough information is available to allow an exchange between shops on-Station or transfer of ownership to other users. The savings are those associated with reduced disposal costs if the waste is reused prior to disposal.

Effect on Product Quality

Since a product is not produced, product quality is not a concern for the return of chemicals to DRMO.

Employee Health and Safety

No change in the level of employee exposure to the usable hydrochloric acid or to the discarded material, because the material will be used and treated or disposed of according to standard practice.

Regulatory Requirements

No regulatory requirements apply to the return of surplus chemicals to DRMO.

Releases and Discharges

The return of surplus chemicals to DRMO should not result in any releases or discharges.

Implementation Schedule

This option currently exists at the Station, although it is not often used. With increased emphasis on this option and waste minimization, this option should be more frequently used.

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9.0 Hazardous Waste - CWC 222
Water Contaminated with Fuel and/or Oil

Approximately 630,000 pounds of fuel- and oil-contaminated water were manifested off-Station for treatment and disposal during 1992. By comparison, approximately 272,000 pounds of fuel-contaminated water were generated in 1990.

9.1 Contributing Processes

The activities that generate this waste include:

- Spill cleanup
- Pump out of oil/water separators

Even though SB14 exempts wastes generated from spill cleanup as nonroutine wastes, wastewater from cleanup of spills at the Station is considered routine since this waste stream was generated in previous years and will most likely be produced in the future.

Contaminated water from cleanup of spills makes up most of the waste quantity under CWC 222. Most spills on flight lines are from aircraft fuel dumps. Unless contained, large spills of JP-5 on runways may flow into the storm drain channels. The water and fuel are pumped from the channels and handled as hazardous waste. Occasionally, spills during product loading of bulk fuel storage tanks may occur. Not all storage tanks are equipped with high-level alarms or feed cutoff systems.

At MCAS El Toro, oil/water separators are primarily located at aircraft and vehicle washracks. If working properly, wastewater from washracks passes through the oil/water separators and flows into the sanitary or storm sewer, depending upon where the unit is located. Waste oil is collected in the oil/water separator storage tank and is pumped out on a regular schedule by an FMD pump truck. Sometimes the oil/water separators get clogged with debris and the

oil/wastewater has to be pumped out by FMD. The resulting wastewater is stored in storage tanks until it is shipped off-Station for treatment and disposal.

9.2 Existing Waste Minimization Measures

Maytag Aircraft Corporation provides aircraft fueling and defueling service at MCAS El Toro. They operate nine refueling trucks and two defueling trucks equipped with hoses which have quick disconnect couplings at both ends of a hose. This is a spring-loaded feature which stops the flow of fuel when the hose breaks loose. The largest fuel spill experienced by Maytag is 25 gallons of JP-5, though typically no more than 15 gallons is spilled when a hose breaks.

If the fuel-contaminated water can be treated, it is run through an oil/water separator on-Station. On occasion, the water is contaminated with two or more petroleum products that together may create a waste that cannot satisfactorily be treated in an oil/water separator. If the contaminated water is not treated and discharged, it is pumped to a storage tank prior to being shipped off-Station for treatment or disposal.

9.3 Potential Waste Minimization Measures

9.3.1 Input Changes

This option is not applicable for this waste stream. Options under Operational Improvement, and Administrative Steps are considered more feasible.

9.3.2 Operational Improvement

<u>Option 1 - Install High-Level Alarms or Automatic Feed Cutoff Systems on Bulk Storage Tanks</u>

The high-level alarms are triggered when a preset level is reached alerting the operator to shut off the feed pumps. Feed cutoff systems that automatically shut off feed pumps or close the

valves on the tank inlet line may be installed. Both the high-level and feed cutoff systems are effective in eliminating operator errors during product loading.

9.3.3 Production Process Changes

This option is not applicable. Options under Operational Improvement, and Administrative Steps are considered more feasible.

9.3.4 Product Reformulation

This option is not applicable because no product is produced.

9.3.5 Administrative Steps

In addition to Stationwide information presented in Section 4.0, the following measures are suggested.

Option 2 - Evaluate Existing Spill Prevention, Management, and Cleanup Procedures

An evaluation of existing procedures may be conducted. If feasible, procedures for spill prevention and management may be improved. Potential large spill areas such as the flight line will be examined more critically. Spill cleanup procedures will also be evaluated.

Option 3 - Employee Training

Personnel handling hazardous materials and hazardous waste and personnel responding to spills currently receive training in spill prevention, management, and cleanup procedures. Emphasis must be placed on spill prevention procedures, especially in areas where the potential for large spills is greater.

Personnel will also receive training on the financial and regulatory consequences of negligent actions resulting in large spills.

9.3.6 Source Reduction Measure Evaluation

This section subjects the potential waste minimization options to a comparison and feasibility evaluation.

Selected options evaluated include: 1) Install high-level or automatic feed cutoff systems on bulk fuel storage tanks; 2) Evaluate existing spill prevention, management, and cleanup procedures; and 3) Employee training.

9.3.6.1 Option 1 - Install High-Level Alarms or Automatic Feed Cutoff Systems on Bulk Storage Tanks

Technical Feasibility

There are no technical barriers to this option. The Station will first evaluate the bulk tanks that require high-level alarms or feed cutoff systems. Funding needs will also be determined prior to implementation of this option.

Expected Change in Hazardous Waste Generation

The reduction in hazardous waste is difficult to estimate. Spills from bulk storage tanks are not a routine process. However, implementation of this option will reduce the potential for large spills.

Economic Analysis

The costs associated with this option are for purchasing and installing the alarms and/or feed cutoff systems. The savings are those associated with reduced waste disposal costs which cannot be estimated at this time.

Effect on Product Quality

Since a product is not produced, product quality is not a concern with the installation of alarms or cutoff systems.

Employee Health and Safety

Employee health and safety will be improved due to the decreased likelihood of spills.

Regulatory Requirements

No regulatory requirements apply to the installation of alarms or cutoff systems.

Releases and Discharges

The installation of alarms and/or cutoff systems will result in a decrease in the likelihood of spills that may contaminate the soil, air, surface water, or groundwater.

Implementation Schedule

This option was recommended in the 1991 Plan, and most of the larger tanks and tank farms have been fitted with leak detection and automatic feed cutoff systems. The Oil Spill Prevention, Control and Countermeasure Plan being revised for July 1994 will discuss the bulk storage tanks.

With the scheduled base closure in 1997, many USTs will be removed. Before closure, all active tanks should be fitted with leak detection and overflow prevention systems to prevent any environmental damage.

9.3.6.2 Option 2 - Evaluate Existing Spill Prevention, Management, and Cleanup Procedures

Technical Feasibility

There are no technical barriers to this option. The Oil SPCC and SCP are currently being updated, and modifications of existing procedures will be made following the recommendations in these plans.

Expected Change in Hazardous Waste Generation

The reduction in waste is difficult to estimate. However, improved procedures would reduce the number of spills and minimize the amount of contaminated water from spill cleanup.

Economic Analysis

The costs associated with this option are for employee training. The savings are associated with reduced disposal costs which cannot be estimated at this time.

Effect on Product Quality

Since no product is produced, this criteria is not applicable.

Employee Health and Safety

Improved spill prevention and management procedures could reduce employee exposure and consequently improve employee health and safety.

Regulatory Requirements

No regulatory requirements apply to the implementation of this option.

Releases and Discharges

This option will not effect releases or discharges.

Implementation Schedule

The Station plans to evaluate this option and implement required modifications to the procedures by July 1994.

9.3.6.3 Option 3 - Employee Training

Technical Feasibility

There are no technical barriers to this option.

Expected Change in Hazardous Waste Generation

The reduction of waste is difficult to estimate. However, an education program is needed to maximize the success of the other waste minimization options and is essential to prevent and manage spills. Prompt response to spills can eliminate much of the flow to storm water drains.

Economic Analysis

The costs associated with this option are for employee training. The savings are those associated with reduced disposal costs. These savings cannot be estimated since the amount of waste reduction is undefined.

Effect on Product Quality

Since a product is not produced, effects on product quality are not applicable.

Employee Health and Safety

Implementing this option will likely reduce the number of spills and could reduce employee exposure and consequently improve employee health and safety.

Regulatory Requirements

Implementation of this option will not result in any additional regulatory requirements. As required by existing regulations, MCAS El Toro personnel are trained to respond to spills.

Releases and Discharges

Employee training may reduce the likelihood of releases and discharges due to better awareness of the dangers of the material being handled.

Implementation Schedule

The Station plans to implement this option by January 1995 with the update of the next revision of the 24-hour Hazardous Materials Training Course.

10.0 Hazardous Waste - CWC 223
Unspecified Oil-Containing Waste

Approximately 1.48 million pounds of oil-containing waste were manifested off-Station in 1992. Ninety-one percent (1.34 million pounds) of the waste stream is composed of oil contaminated with water, TCE, TCA, benzene, and/or chromium. Approximately 8 percent (121,000 pounds) of the waste is composed of rags and absorbent contaminated with petroleum products. The remaining 1 percent is used oil and fuel filters.

10.1 Contributing Processes

Two processes at MCAS El Toro contribute to the generation of contaminated oil. The first involves the aggressive program that is underway to remove abandoned storage tanks. Prior to removal, the fluid in the tank and the oil and sludge waste on the tank bottom must be removed. The exact content of these tanks is not always known so it is treated as hazardous waste. The second contributing process results from cleanout of the oil/water separators. Spill cleanup fluids and waste fluids are run through the separator which generates waste and contaminated oil.

Oil-contaminated rags and absorbent make up approximately 8 percent of this waste. There is no specific breakdown of the amount of each because in many cases the manifest listed this waste as "rags/absorbent." The cloth rags are used throughout MCAS El Toro for various cleaning applications including:

- Wiping of metal parts during maintenance and repair
- Spill cleanup
- General housekeeping.

During cleaning operations, rags become contaminated with solvents, oils, paints, coatings, and other chemicals. The rags are primarily recycled cloth and do not come in a standard size or a standard material.

Absorbent is used throughout MCAS El Toro primarily for:

- Cleanup of spills involving solvents, fuels, oils, and paints
- Floor sweeping.

Spills may vary in size depending upon where they occur. Most fuel spills on the flight line are from aircraft fuel dumps. Occasionally, spills may occur due to over-filling of tanks at fuel farms during product loading. Fuel transfer operations at fuel farms are by tank trucks or pipeline. Not all fuel tanks are equipped with automatic shutoff valves.

Used oil and fuel filters are generated during routine maintenance of vehicles and aircraft.

10.2 Existing Waste Minimization Measures

There are no existing waste minimization measures for the contaminated oil waste from the underground storage tank removals. As each tank is removed, the waste generated is a one-time event. The oil/water separator is used regularly for any wastes that can be handled in this manner.

The 1991 Plan recommended using a rag supplier/recycler service on a Stationwide scale, and the procurement contract for this service is currently being written, and is expected to be completed by January 1995.

The 1991 Plan also recommended the evaluation of alternative absorbents. The Environmental Division of MCAS El Toro is currently evaluating the use of absorbent pads as an alternative to the "kitty-litter" type absorbent more commonly used to clean up spills.

10.3 Potential Waste Minimization Measures

For the contaminated oil waste, the source reduction measures are limited. The one-time generation of waste from storage tanks prior to their removal cannot be minimized. Once the tanks are removed, 100 percent of the waste will have been reduced. The oil/water separator, a waste reduction technology, is currently used when necessary to treat fuel- and oil-contaminated water from spill cleanups. This reduces the amount of waste that must be shipped off-Station for treatment or disposal. Section 9.0 discusses source reduction measures applicable to the generation of fuel-contaminated water.

MCAS El Toro is currently in the contracting process for a rag supplier/recycler. This was a recommended option in the 1991 Plan, and with the use of such a service, there will be a 100 percent reduction in waste due to contaminated rags. This option will not be evaluated further.

The Environmental Office is currently evaluating the use of other types of absorbents. This option was recommended in the 1991 Plan and will not be evaluated further in this Plan. The Environmental Office will determine and evaluate the absorbents based on the following criteria:

- Technical feasibility
- Expected change in hazardous waste generation
- Economic analysis
- Employee health and safety
- Releases and discharges.

When the evaluation is complete, the recommendations will be implemented.

Oil and fuel filters are part of the Station recycling program. Recent data show that approximately 20 drums of filters are shipped off-Station for recycling per month. Further training and education may increase the amount being recycled.

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11.0 HAZARDOUS WASTE MANAGEMENT PERFORMANCE REPORT SUMMARY

11.1 Site Information

EPA Identification Number:	CA6170023208
Generator's Name:	Marine Corps Air Station El Toro
Mailing Address:	Facilities Management Division Code 1JG
	Santa Ana, CA 92079-5001
Site Address:	Same as above
Telephone Number:	714/726-2772
Contact Name:	Capt. D.G. Clark II
SIC Code:	9711 (National Security)

11.2 Site Operations

The primary mission of the Station is to maintain and operate facilities and provide services and materials to support the operation of aviation activities. The mission involves the operation, operation level, and intermediate level maintenance of a relatively large number of military aircraft and ground support equipment. Types of aircraft operated and maintained include F/A-18 Hornets, C-130 cargo aircraft, and A-6 Intruders. Ground support equipment includes generators, weapons loaders, tow tractors, trailers, trucks, and automobiles.

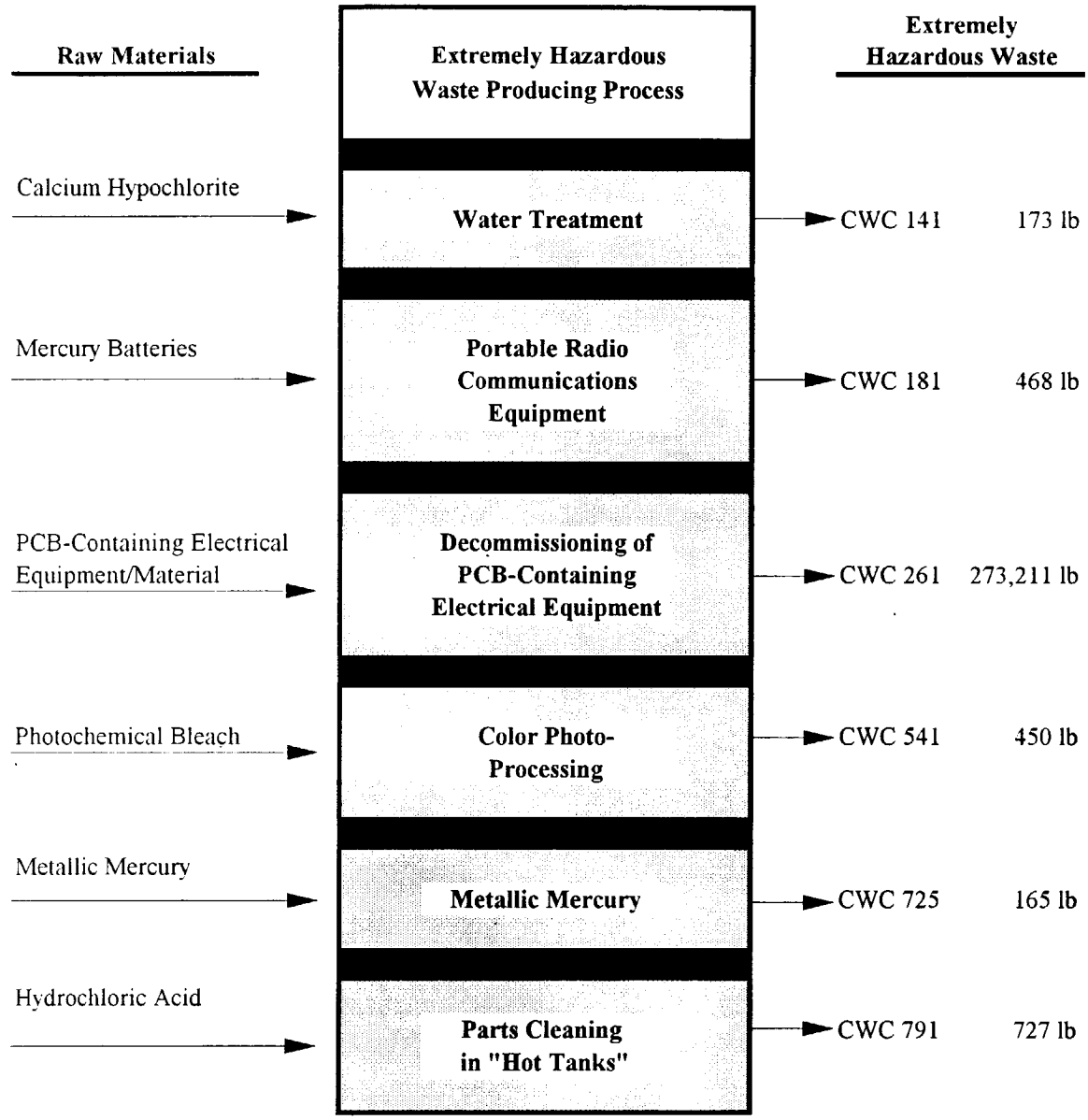
The aircraft and equipment operation and maintenance activities and other services performed at the Station require storage and use of hazardous materials such as fuels, oil, solvents, batteries, cleaning compounds, paints, photoprocessing chemicals, decontamination agents, and other hazardous wastes at the facility. Hazardous wastes generated at MCAS El Toro are manifested and transported off-Station for disposal or recycling.

11.3 Major Operations Productivity Hazardous Waste

To support the Station mission, various squadrons and shops conduct maintenance and other support activities that result in the generation of hazardous wastes. The activities performed and hazardous materials used by each squadron or shop are dictated by standard operating procedures. Figures 11-1 and 11-2 are block flow diagrams of major activities that produced extremely hazardous and hazardous waste, respectively, in 1992. The processes that result in the generation of hazardous waste include:

- Aircraft maintenance, including mechanical and routine maintenance, flight preparation, and corrosion control
- Maintenance of aircraft electronic components such as circuit boards, radar, and radios
- Maintenance of ground support equipment such as tractors, trailers, trucks, generators, mobile electric power units, weapons loaders, cranes and forklifts
- Automotive servicing and repair of vehicles at the auto hobby shop and the Marine Corps Exchange automotive service station
- Painting of small aircraft components and other small metal parts. Paint booths equipped with a water cascade control system for collecting overspray are used for major painting. Touch up painting of parts is done at various squadrons and shops. Painting of large items, such as entire aircraft or vehicles, is not done at MCAS El Toro.
- Abrasive blasting (i.e. sandblasting) for paint removal and cleaning
- Aircraft defueling
- Film developing and printing at the on-Station photographic laboratory, and X-ray development at dental and medical clinics.

Other activities that produce hazardous wastes include spill cleanups, site remediation, removal of PCB transformers and PCB-contaminated waste, asbestos removal, discarding of unused



Note: This is not a manufacturing facility; therefore, no products are produced.

CWC = California Waste Code

Figure 11-1
Block Flow Diagram for Extremely Hazardous Waste Generated During Calendar Year 1992 at MCAS El Toro

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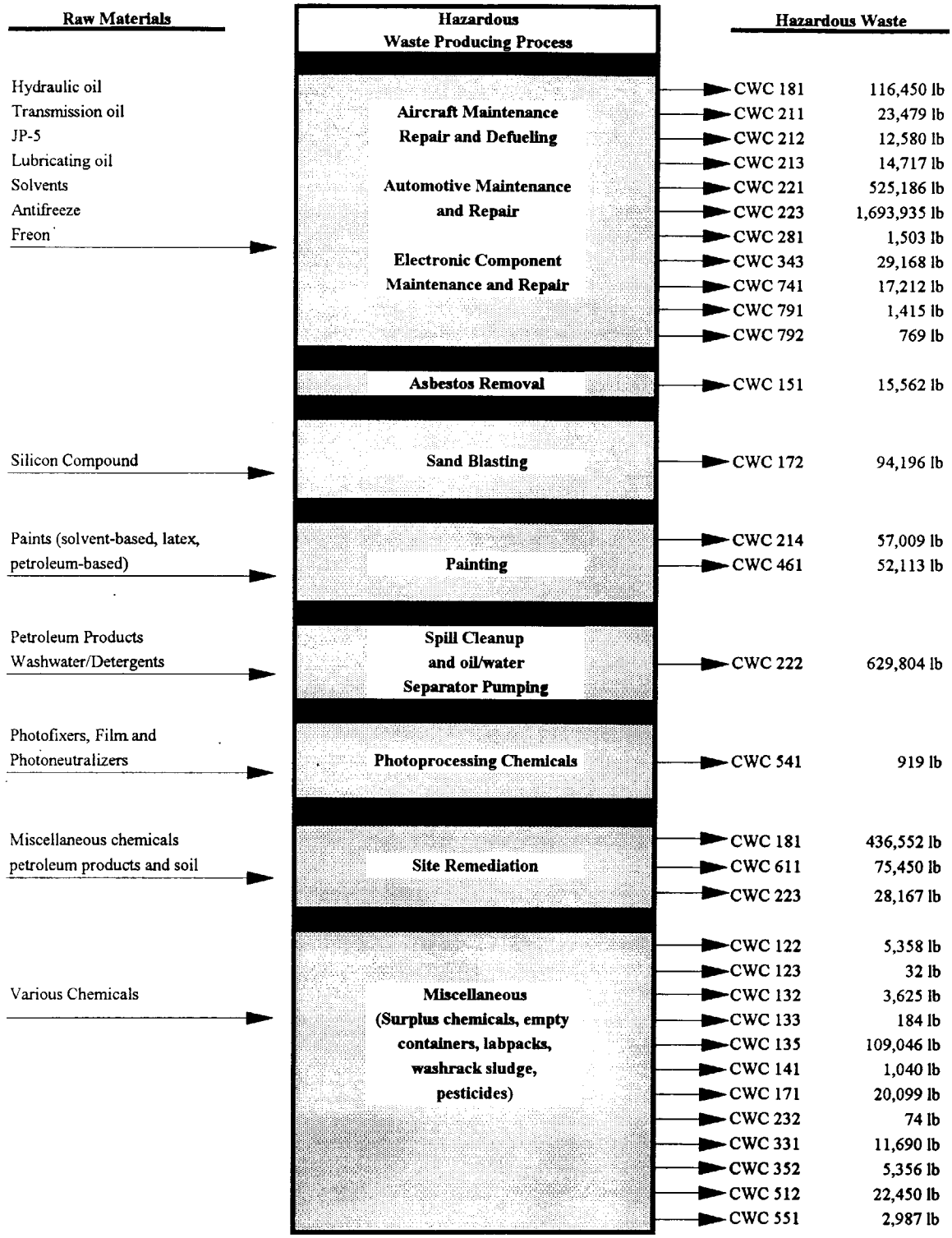

Note: This is not a manufacturing facility; therefore, no products are produced.

CWC = California Waste Code

Figure 11-2
Block Flow Diagram for Hazardous Waste Generated During Calendar Year 1992 at MCAS El Toro

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chemicals or chemicals with expired shelf lives, and washing of aircraft and vehicles at washracks.

All hazardous wastes are manifested and shipped off-Station for recycling, treatment, or disposal. No hazardous wastes are recycled, treated, or disposed of on-Station. Appendix A lists all the wastes manifested off-Station in 1992, sorted by California Waste Code (CWC).

11.4 Summary of Major Waste Streams and Waste Reduction Operations

This section summarizes the characteristics and quantities of the major hazardous waste streams generated during 1992. A comparison of the wastes generated in 1990 and 1992 is included in Section 12.2.1.

11.4.1 EHW - Off-Specification, Aged, or Surplus Inorganics - CWC 141

In 1992, 173 pounds of calcium hypochlorite, classified as CWC 141, were manifested off-Station for disposal. The waste reduction options recommended for implementation include:

- Control hazardous materials inventory
- Return surplus chemicals to DRMO.

11.4.2 EHW - Spent Mercury Batteries - CWC 181

In 1992, 403 pounds of spent mercury batteries were shipped off-Station for disposal. The waste reduction options recommended include:

- Substitute mercury batteries with non-mercury batteries
- Recycle spent mercury batteries off-Station.

11.4.3 EHW - Photochemical/Photoprocessing Waste - CWC 541

In 1992, 450 pounds of photochemical bleach were manifested off-Station for disposal. The recommended waste reduction option include:

- Substitute photochemical bleach with non-mercuric bleach
- Control hazardous materials inventory
- Employee training.

11.4.4 EHW - Liquids with pH <2 - CWC 791

In 1992, one 727 pound drum of hydrochloric acid was manifested off-Station for disposal. The acid had been used for parts cleaning in "hot" tanks. The recommended waste reduction options include:

- Evaluate use of alternative cleaners
- Control hazardous materials inventory
- Return surplus chemicals to DRMO.

11.4.5 HW - Water Contaminated with Fuel - CWC 222

In 1992, approximately 630,000 pounds of fuel- and oil-contaminated water were manifested off-Station for treatment and disposal. This waste is generated by spill cleanup and cleanout of oil/water separators. The recommended waste reduction options include:

- Installation of high level alarms and/or automatic feed cutoff systems on bulk fuel storage tanks
- Evaluation of existing spill prevention, management and cleanup procedures
- Employee training.

11.4.6 HW - Unspecified Oil-Containing Waste - CWC 223

In 1992, approximately 1.48 million pounds of oil-containing waste were manifested off-Station for disposal. Ninety-one percent (1.34 million pounds) of this waste is composed of oil contaminated with water, TCA, TCE, benzene and/or chromium. It is generated as a result of tank removal, oil/water separator cleanout, and spill cleanup. Since this portion of CWC 223 is non-routine, and because waste reduction options are limited, it is not considered in the source reduction evaluation.

The remainder of the CWC 223 wastes include contaminated rags and absorbent (8 percent, 121,000 pounds), and used oil and fuel filters (1 percent, 15,000 pounds). The recommended waste reduction options include:

- Evaluation of alternative absorbents
- Use a rag supplier/recycler service
- Recycle used oil and fuel filters.

11.4.7 Stationwide Administrative Measures

In addition to the waste stream specific waste minimization measures recommended, the facility-wide administrative measures listed below will be implemented.

- Establish waste minimization committees
- Upgrade the employee training program
- Establish an employee recognition/incentive program
- Implement a hazardous material tracking program
- Implement computerized hazardous waste tracking program
- Develop new military specs.

11.5 Hazardous Waste Management

Various groups at MCAS El Toro that share the responsibility for hazardous materials/hazardous waste (HM/HW) management include:

- Director of Facilities Management Division (FMD)
- Environmental Office of FMD
- Supply Department (Supply)
- DRMO
- Station Ground Safety Office
- Individual groups and squadrons.

The FMD and the Environmental Office are responsible for overall management of the HM/HW program. Supply is in charge of processing requisitions, procuring materials, and awarding contracts. The DRMO is responsible for sales of surplus government property including surplus HM inventory, and for disposal of hazardous wastes generated at MCAS El Toro. The Station's hazard communication training program is managed by the Ground Safety Office. The day-to-day generation, handling, and management of HM/HW is the responsibility of individual groups and squadrons.

Each squadron and unit that produces hazardous waste accumulates the waste in containers in a designated hazardous waste accumulation area. The containers cannot be stored longer than 90 days from the first date of accumulation. Hazardous wastes are segregated and labeled appropriately. The Environmental Office is contacted at least 30 days before the end of the 90-day time limit to schedule a pickup of the hazardous waste containers. Upon inspection, the containers are moved from the generator storage area to the central storage facility and are shipped off-Station for treatment or disposal. Hazardous wastes are sent to an Environmental Office- or DRMO-approved TSDF. A record of all drums transferred from one area to another is entered in a logbook maintained by the Environmental Office.

Bulk petroleum recyclable hazardous wastes (i.e., fuel and oil) are picked up by FMD pump truck, stored in bulk storage tanks, and ultimately shipped off-Station for recycling. Waste solvents are picked up by an outside contractor for recycling.

11.6 Abstracts of Waste Minimization Activities

This section summarizes significant changes in hazardous waste generation and management activities, and includes recycling and operational improvements at MCAS El Toro.

11.6.1 Off-Station Recycling

The Station has several ongoing hazardous waste recycling projects. The principal wastes that are manifested and shipped for recycling include:

- Lead acid batteries
- JP-5
- Oil
- Empty drums
- Photographic lab waste
- Spent solvents
- Oil and fuel filters.

11.6.2 Supply and DRMO Programs

To reduce the amount of off-specification chemicals disposed of as hazardous waste, the Supply Department (Supply) has implemented a shelf life program and a material procurement system to control the chemical inventory on hand. The shelf life program objective is to implement procedures that continually monitor consumable materials so that the materials are used up prior to expiration of the material shelf life.

The Supply material procurement system is designated to prevent overstocking of items. An inventory of inexpensive items is maintained within a high and low limit. These limits are set based on previous demand. Items are ordered only when the inventory goes below the low limit. Expensive items are ordered more frequently depending upon customer demand. The procurement system promotes waste minimization by limiting hazardous material inventory.

Another program in place for use of surplus inventory is the Reutilization Program. Unused or surplus hazardous materials are turned over to DRMO for reuse. Surplus inventory is made available to the Department of Defense (Army, Navy, Air Force, and Marines), other federal agencies, state government, and local government. After the inter-government screening process, items may be sold to general public.

In conjunction with the Environmental Office, DRMO is currently contracting for a rag supplier/recycler. Typically, contaminated rags account for more than 25,000 pounds of waste per year. The supplier/recycler will provide rags of uniform size and quality and will offer a regular schedule of pickup and delivery. Once this program is operational, the waste reduction achieved will be 100 percent.

11.7 Changes in Waste Generation and Management

Since the baseline year, the Department of Defense has begun a process of base realignment and closure. As a result, several activities have been transferred to MCAS El Toro as bases around the country close. The increase in the number of activities at MCAS El Toro has caused a net increase in the amount of waste generated, though with better handling and management the amount of waste generated per activity has decreased. With MCAS El Toro scheduled to close in 1997, it is expected that the amount of hazardous waste generated will rapidly decrease.

12.0 HAZARDOUS WASTE MANAGEMENT PERFORMANCE REPORT

12.1 Site Information

EPA Identification Number:	CA6170023208
Generator's Name:	Marine Corps Air Station El Toro
Mailing Address:	Facilities Management Division Code 1JG
	Santa Ana, CA 92079-5001
Site Address:	Same as above
Telephone Number:	714/726-2772
Contact Name:	Capt. D.G. Clark II
SIC Code:	9711 (National Security)

12.2 Hazardous Waste Generation

This section compares the types and amounts of waste generated at MCAS El Toro during the baseline year, 1990, and the year for which this report is written, 1992. Table 12-1 provides a listing of waste types, sorted by California Waste Code, and the amount of each type of waste generated during 1990 and 1992. The information in Table 12-1 was summarized from a database that contains, along with other data, information on the type of waste produced, the quantity in pounds, and the USEPA identification numbers of TSDFs that received wastes generated at MCAS El Toro. A copy of the hazardous waste generation database for 1992 is provided in Appendix A.

The operations that produce these hazardous wastes include the following:

- Aircraft maintenance, including mechanical and routine maintenance, flight preparation, and corrosion control
- Maintenance of aircraft electronic components such as circuit boards, radar, and radios

- Maintenance of ground support equipment such as tractors, trailers, trucks, generators, mobile electric power units, weapons loaders, cranes and forklifts
- Automotive servicing and repairs of vehicles at the auto hobby shop and the Marine Corps Exchange automotive service station
- Painting of small aircraft components, other small metal parts, and wood staining conducted in two paint spray booths; in addition, touch-up painting is done at many squadrons
- Abrasive blasting, i.e., sandblasting
- Aircraft defueling
- Film developing and printing (color, black and white, and slides) at the on-Station photographic laboratory; x-ray development at the medical and dental clinics.

Other activities that produce hazardous waste include spill cleanups, site remediation, removal of PCB transformers and other PCB-contaminated waste, asbestos abatement program, discarding of expired shelf life or unused chemicals, and aircraft and vehicle washing at washracks.

The increase in hazardous waste generated and shipped off-Station for disposal is attributed to an increase in the number of activities, operations and personnel at MCAS El Toro. Due to base realignments and closures across the U.S., various activities have been transferred to MCAS El Toro, and though the amount of waste generated per activity, squadron, unit, etc. has been decreasing, the total amount has been increasing. With the anticipated closure of the base in 1997, waste generation will be reduced almost completely. Following base closure, the only anticipated waste generating activities will be site cleanup operations.

12.2.1 Major Waste Streams

This section summarizes the characteristics and quantities of the major hazardous and extremely hazardous waste streams generated in CY 1990 and CY 1992. SB 14 also requires that the waste reduction approaches recommended and implemented, and the effectiveness of the waste reduction efforts be summarized in this section.

Table 12-1
Calendar Year 1992 Waste Generation Data
for MCAS El Toro

Waste Stream	CWC	Waste Type	Frequency	Weight (lb)
Calcium hypochlorite	141	E	R	173
Mercury batteries and waste mercury	181	E	R	468
PCB containing waste	261	E	X	273,211
Photochemicals	541	E	R	450
Waste mercury metallic	725	E	R	165
Waste hydrochloric acid	792	E	R	727
Alkaline solution without metals	122	H	R	5,316
Wet alkaline batteries	122	H	R	42
Unspecified alkaline solution	123	H	R	32
Aqueous solution with metals	132	H	R	3,625
Detergent	133	H	R	184
Unspecified aqueous solution	135	H	R	109,046
Surplus inorganics	141	H	R	1,040
Asbestos	151	H	X	15,562
Washrack sludge	171	H	R	20,099
Blasting booth sand	172	H	R	94,196
Inorganic solid waste	181	H	R	114,155
Contaminated Soil	181	H	X	436,552
Lead acid batteries	181	H	X	126
Dry alkaline batteries	181	H	R	48
Lithium batteries	181	H	R	2,095
Nickel/cadmium batteries	181	H	R	26
Halogenated solvents	211	H	R	23,479
Oxygenated solvents	212	H	R	12,580
Hydrocarbon solvents	213	H	R	14,717
Unspecified solvents	214	H	R	57,009
Waste aviation fuel	221	H	X	276,556
Waste hydraulic fluid, oil, and grease	221	H	X	248,630
Water with fuel and oil	222	H	R	629,656
Oil sludge	222	H	R	148

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Table 12-1 (Continued)
Calendar Year 1992 Waste Generation Data
for MCAS El Toro

Waste Stream	CWC	Waste Type	Frequency	Weight (lb)
Rag/absorbent containing oil	223	H	R	121,203
Oil and fuel filters	223	H	R	19,921
Oil containing waste	223	H	R	1,337,077
Automotive fluid, jet fuel	223	H	X	215,734
Oil contaminated soil	223	H	X	28,167
Pesticide related material	232	H	X	74
Adhesives	281	H	R	1,503
Off-spec organics	331	H	R	11,690
Liquid organic mixtures	343	H	R	29,168
Other organic solids	352	H	R	5,356
Paint waste	461	H	R	52,113
Empty containers	512	H	R	22,450
Photochemical waste	541	H	R	919
Lab waste chemicals	551	H	R	2,987
Contaminated soil from site cleanups	611	H	X	75,450
Solvents	741	H	R	17,212
Waste acids	791	H	R	1,415
Alodine and acids w/metals	792	H	R	769
Non-hazardous material	N/A	W	X	28,985
Total				**4,312,306**

CWC = California Waste Code
Waste Type
E = Extremely hazardous waste
H = Hazardous waste
W = Non-Hazardous Waste

Frequency
R = Routinely generated waste
X = Wastes exempted by Title 22, Section 66521(c), California Code of Regulations
N/A = No applicable CWC

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12.2.1.1 Extremely Hazardous Waste (EHW) - Off-Specification, Aged, or Surplus Inorganics - CWC 141

In 1990, 150 pounds of calcium hypochlorite was shipped off-Station for treatment or disposal. The waste constituents and physical form (100 percent solid) indicate that the waste is a discarded product. The calcium hypochlorite may have been used for water treatment.

In 1992, 173 pounds of calcium hypochlorite was shipped off-Station for treatment or disposal. This waste was discarded as both solid and solution.

Two waste reduction options were recommended for implementation:

- Control hazardous materials inventory
- Return surplus chemicals to DRMO for reuse or resale.

The first option has only been partially implemented. Supply orders and tracks its hazardous materials inventory, but once the material leaves supply, it is not tracked. The second option is available and has been used in the past, but currently appears to be underutilized.

A third option was recommended for further evaluation and implementation, if feasible:

- DRMO to advertise in the California Waste Exchange Directory.

This option has since been rejected because DRMO is generally effective in finding new uses for hazardous materials so it rarely needs to advertise.

Because no reduction in this waste has occurred over the last two years, and because CWC 141 is still considered a major waste stream, the current Waste Minimization Plan concluded that the first two waste reduction options discussed above are still applicable, and should be implemented.

12.2.1.2 EHW - Spent Mercury Batteries - CWC 181

In 1990, 135 pounds of spent mercury batteries were generated by MCAS El Toro and shipped off-Station for disposal. The batteries are likely used in portable radio communication equipment.

In 1992, 403 pounds of spent mercury batteries were generated by MCAS El Toro and shipped off-Station for disposal.

Two waste reduction options were considered in 1990 for spent mercury batteries:

- DRMO to advertise in the California Waste Exchange Directory
- Recycle spent mercury batteries off-Station.

The first has been rejected because DRMO is generally effective in finding new uses for hazardous material/hazardous waste. The second was recommended for implementation but has not been implemented. No concerted effort has been made to recycle the spent mercury batteries, and the higher cost of recycling over disposal is a prime consideration.

No reduction in this waste has been achieved over the last two years, and spent mercury batteries are still considered a major waste stream according to the 1992 Waste Minimization Plan. The waste reduction options recommended in the 1992 Plan include:

- Recycle spent mercury batteries off-Station
- Substitute non-mercury batteries for mercury batteries.

12.2.1.3 EHW - Photochemical/Photoprocessing Waste - CWC 541

In 1990, 100 pounds of photochemical bleach was shipped off-Station for treatment and disposal. The mercuric chloride content in the bleach made the waste extremely hazardous. The bleach was most likely used in color photoprocessing.

In 1992, 450 pounds of photochemical bleach was shipped off-Station for treatment and disposal.

Three waste reduction options were considered and recommended for implementation in the 1990 Plan:

- Substitute photochemical bleach with non-mercuric bleach
- Control hazardous materials inventory
- Employee training.

Since the waste continues to be generated and manifested as an EHW, the first option has not been implemented. The latter two options have only been partially implemented. Under employee training, one hour of the semi-annual Hazardous Materials Training Course is devoted to waste minimization. An expansion of the curriculum to include more on waste minimization is recommended.

12.2.1.4 EHW - Liquids with pH <2 - CWC 791

In 1990, this type of waste was not evaluated because it did not qualify as a major waste stream, but in 1992, 450 pounds of waste hydrochloric acid solution was shipped off-Station for treatment or disposal. The acid was used by the Motor Transport Unit to clean auto parts in "hot" tanks.

Three options for waste reduction are recommended for CWC 791:

- Evaluate the use of alternative cleaners
- Control hazardous materials inventory
- Return surplus chemicals to DRMO.

The effectiveness of these three options will be evaluated when the plan is updated in 1995 for wastes generated during 1994.

12.2.1.5 Hazardous Waste (HW) - Other Inorganic Solid Waste - CWC 181

In 1990, 96 percent of CWC 181 waste was composed of rags and absorbent contaminated with oil, and these were the two types of CWC 181 waste evaluated. Oil rags accounted for 23,536 pounds and contaminated absorbent accounted for 42,654 pounds of the waste shipped off-Station for disposal in a Class I landfill.

In 1992, rags and absorbent were reclassified as CWC 223, oil-containing waste. On the hazardous waste manifests, these two types of wastes were usually listed together as "rags/absorbent."

In 1993, 121,000 pounds of rags/absorbent contaminated with petroleum products were shipped off-Station for disposal.

Three waste reduction options were recommended for rags contaminated with oil:

- Use rag supplier/recycler service
- Use drip pans and drip racks
- Employee training.

Of these, the first two are being implemented. MCAS El Toro is currently in the process of procuring a rag supplier/recycler. Once the supplier/recycler has been hired, the waste reduction will be 100 percent. Drip pans and drip racks are used where appropriate to prevent

spills. The third option, employee training, has only been partially implemented. Only one hour of the semi-annual Hazardous Waste Management Training Course is dedicated to waste minimization. The recommendation calls for an expansion of this topic.

Four waste reduction options were recommended for oil-contaminated absorbent:

- Evaluate other absorbents
- Install high-level alarms or automatic shutoff valves on bulk storage tanks
- Use Safe Step instead of Speedy Dry for cleanup of spills
- Employee training.

In late 1993, MCAS El Toro began a program of absorbent evaluation to determine the most efficient and cost-effective absorbents for different types of operations. Results will be available in late 1994. High-level alarms and/or automatic shutoff valves are being placed on active tanks as part of the UST removal and upgrade program. Due to the ongoing absorbent evaluation, Safe Step has not yet replaced Speedy Dry. Only one hour of the semi-annual Hazardous Waste Management Training Course is dedicated to waste minimization. The recommendation calls for an expansion of this topic.

12.2.1.6 HW - Unspecified Solvent Mixture - CWC 214

In 1990, 34,060 pounds of unspecified solvent mixture was shipped off-Station for treatment. Solvents are used throughout the Station for parts cleaning and in painting.

In 1992, the 57,009 pounds of waste listed as CWC 214 consisted of mineral spirits, cleaning compound, paint thinner, degreaser, hydraulic fluid, inspection penetrant and paint. Though the amount of this waste has increased, it was not a major waste stream in 1992 because it accounted for less than 5 percent of the total non-exempt hazardous waste.

Five waste minimization options were recommended for the baseline year:

- Evaluate use of alternative cleaners
- Equip solvent tanks with lids and drip racks
- Investigate multi-stage counter-current cleaning systems in solvent tanks
- Investigate use of ultrasonic cleaners
- Employee training.

Each of the first four recommendations is addressed with current use of a solvent supplier/recycler at MCAS El Toro. The supplier provides solvent as well as solvent tanks with drip racks and lids. With the use of a supplier, no action was taken to investigate alternatives to the previous use of solvent and cleaners. Waste minimization is addressed during only one hour of the 24-hour Hazardous Waste Management Training Course, and it is recommended that this be expanded.

12.2.1.7 HW - Water Contaminated with Fuel and/or Oil - CWC 222

In 1990, 272,716 pounds (34,000 gallons) of fuel- and oil-contaminated water were shipped off-Station for treatment. Water was contaminated with less than 5 percent diesel, fuel, or oil. The majority of the contaminated water is generated from spill cleanup. Large spills of JP-5 occur primarily on the flightline from accidental aircraft fuel jettison. Occasionally, spills may also occur during bulk storage tank loading.

In 1992, approximately 630,000 pounds (79,000 gallons) of fuel- and oil-contaminated water were shipped off-Station for treatment. The increase in waste generation from 1990 to 1992 is likely due to the increase in operations and activities at MCAS El Toro.

Five waste minimization options were recommended for CWC 222:

- Install high-level alarms and/or automatic shutoff valves on bulk storage tanks
- Evaluate existing spill prevention, management, and clean-up procedures
- Clean out oil/water separator on a regular basis

- Employee training
- Evaluate on-Station treatment of fuel and oil-contaminated water.

High-level alarms and/or automatic shutoff valves are being placed on active tanks as part of the UST upgrade/removal program. The existing spill prevention, management, and cleanup procedures are currently being reviewed as part of this contract. The oil/water separators are currently cleaned out on an as-needed basis. Inconsistent schedules and activities at the base preclude a regular clean-out schedule. Waste minimization is addressed during only one-hour of the 24-hour Hazardous Waste Management Course. It is recommended that this be expanded. On-Station treatment of fuel- and oil-contaminated water occurs as often as possible. The contaminated water is run through the oil/water separator provided the waste liquid is not considered too hazardous to be effectively treated in this manner.

12.2.1.8 HW - Unspecified Oil-Containing Waste - CWC 223

In 1990, 20,821 pounds of non-exempt oil-containing wastes were manifested off-Station for treatment or disposal. This amount did not qualify CWC 223 wastes as a major waste-stream, so it was not evaluated.

In 1992, a reclassification of wastes caused CWC 223 to become a major waste-stream. The waste-stream was composed of oil contaminated with water, TCE, TCA, benzene, and/or chromium (91 percent, 1.34 million pounds), rags/absorbent contaminated with petroleum products (8 percent, 121,000 pounds), and oil and fuel filters (1 percent, 20,000 pounds).

Two processes contribute to the generation of contaminated oil. First, removal of underground storage tanks requires that the fluid in the tank and the oil and sludge waste on the tank bottom be removed. The exact content of these tanks is not always known so it is treated as hazardous waste. Second, soil/water separator clean out and the oil skimmed and collected during the separation generate large amounts of contaminated oil.

The source reduction measures for the contaminated oil waste are limited. The one-time generation of waste from storage tanks prior to their removal cannot be minimized. Once the tanks are removed, 100 percent of the waste will have been reduced. The oil/water separator, a waste reduction technology, is currently used when necessary to treat fuel- and oil-contaminated water. This reduces the amount of waste that must be shipped off-Station for treatment or disposal.

Rags and absorbent are discussed in Section 12.2.1.5.

Oil and fuel filters, generated during routine vehicle and aircraft maintenance, are recycled through the Station Recycling Program. Recent data show that approximately 20 drums of filters are shipped off-Station for recycling each month.

12.2.1.9 HW - Paint and Paint Sludges - CWC 461

In 1990, 33,833 pounds of waste paint and paint sludges were shipped off-Station for disposal. Waste paint with solvents made up 86 percent (29,100 pounds) of the total CWC 461.

In 1992, 52,113 pounds of waste paint and paint sludges were shipped off-Station for disposal. Waste paint with solvents made up 28 percent (14,800 pounds) of the total CWC 461.

Though the amount of paint waste has increased from 1990 to 1992, CWC 461 is not considered a major waste stream in 1992 because it contributes less than 2 percent to the total non-exempt waste stream.

Six waste reduction options were recommended for CWC 461 in the baseline year report:

- Use alternative paint formulations
- Use alternative painting techniques
- Evaluate paint removal techniques

- Use alternative paint removal techniques
- Expand employee training
- Control paint inventory.

The last two options, training and inventory control, have both been partially implemented. Waste minimization is covered during one hour of the semi-annual Hazardous Waste Management Course. Supply orders and tracks the hazardous materials inventory, but once the item leaves Supply, it is not tracked.

None of the other recommended options for CWC 461 have been evaluated or implemented.

12.2.1.10 HW - Photochemicals/Photoprocessing Waste - CWC 541

In 1990, 59,647 pounds of photoprocessing chemicals consisting of developer, fixer, and neutralizer were sent off-Station for disposal in a Class I landfill following solidification of the liquid wastes.

In 1992, 919 pound of photoprocessing chemicals were shipped off-Station for treatment and disposal. This significant decrease in the amount of CWC 541 produced from 1990 to 1992 can be attributed to the decommissioning of the photo reconnaissance squadron and improved management and handling practices.

Five waste minimization options were recommended in 1990 for CWC 541:

- Control hazardous materials inventory
- Make up solutions only in needed quantities
- Return surplus chemicals to DRMO
- DRMO to advertise in California Waste Exchange Directory
- Employee training.

All of these options, except DRMO advertising, have been partially implemented at MCAS El Toro. Supply controls the HM inventory but does not track its use. As practicable, solutions are made only as needed. Surplus chemicals are returned to DRMO when appropriate. Employee training involves only one hour of waste minimization discussion during the semi-annual 24-hour Hazardous Waste Management Course.

12.2.1.11 Stationwide Administrative Measures

In addition to the waste stream specific waste minimization measures, facility-wide administrative measures listed below will be implemented.

- Establish waste minimization committees
- Establish an employee training program for waste minimization
- Establish an employee recognition/incentive program
- Implement a hazardous material tracking program
- Implement a computerized hazardous waste tracking system.

One option recommended for additional investigation is development of new military specifications. If feasible, the Station will also implement this option.

12.3 Hazardous Waste Management

The Air Base Order (ABO) 5090.1B issued 4 December 1990 describes the hazardous material and waste handling, transfer, and disposal program to be followed by all Station personnel. The ABO was issued by the Commander, Marine Corps Air Bases Western Area, and by the commanding general of the Third Marine Aircraft Wing. The order applies to both MCAS El Toro and MCAS Tustin. The program, summarized below, includes Station generators, the Environmental Office, and DRMO.

12.3.1 Hazardous Waste Handling

12.3.1.1 Generator Responsibilities

Each squadron and unit that uses hazardous materials has a designated HM/HW coordinator who is responsible for the daily handling and storage of hazardous materials and wastes. Each generator is required to:

- Accumulate hazardous waste in tanks or Department of Transportation (DOT)-approved containers at the generator accumulation area. Typically, a generator accumulation area consists of either a concrete pad with a containment berm or an unpaved area enclosed by a sandbag berm. Sandbag-berm accumulation areas are currently being upgraded to concrete container storage pads. Each hazardous waste generating site has its own hazardous waste accumulation area. The Hazardous Materials/Hazardous Waste Management Plan, updated in January 1994, identifies all accumulation areas.

- Segregate and label hazardous wastes appropriately. The generator is responsible for proper classification of the waste. Classification information is placed on each drum with either a stick-on hazardous waste label or by painting information directly on the drum. The ABO 5090.1B contains a comprehensive list of labels and painted information. The hazardous waste labels now being used at MCAS El Toro contain information pertaining to generator identification, accumulation start date, waste characterization (i.e., waste constituents, EPA hazardous waste code, DOT classification), and waste handling instructions. The Environmental Office is contacted if a generated waste is not listed in the ABO.

- Assign a unique drum identification number to each container. The drum identification number is entered in the Station logbook and on the hazardous waste drum. This number is used for tracking the movement of a hazardous waste container on-Station.

- Store hazardous wastes at the generator accumulation area for no more than 90 days from the accumulation start date. The Environmental Office is contacted at least 30 days before the end of the 90-day time limit to schedule a pickup.

- Handle oily rags and used absorbent as hazardous waste.

12.3.1.2 Environmental Office Responsibilities

Upon receiving notification from a generator, the Environmental Office conducts an inspection of the container within 5 working days. The Environmental Office either certifies the container for pickup or indicates changes to be made prior to pickup. Drums certified for pickup by the Environmental Office are removed from the generator accumulation area during the weekly FMD pickup.

- At the time of waste pickup, an entry is made in the logbook. Information documented in the logbook includes the following:

  - Date of scheduled pickup

  - Generator name, HM/HW name, building number, telephone extension

  - Drum identification number

  - Container type and size

  - Physical form of container contents

  - Common name for container contents (e.g., rags with oil, solvents)

- Chemical name in addition to the common name (e.g., PD-680 in addition to solvent name)

- EPA waste identification number (e.g., F001, D002)

- Generating process description

- Weight

- Date container is received at the storage facility

- Storage facility bay number where the drum is stored

- Waste analysis (including sample number if a sample was collected)

- Waste profile sheet number

- Manifest number and the date on which the sample is shipped off-Station

- Delivery order number.

- Bulk petroleum recyclable hazardous wastes (i.e., fuel and oil) are picked up by the FMD pump truck and transferred to on-Station storage tanks. These wastes are ultimately shipped off-Station for recycling.

- Hazardous waste containers targeted for disposal are transferred by FMD to the on-Station storage facility. This facility is permitted by the DHS and is a RCRA-permitted storage facility. From the storage facility, the containers are shipped off-Station to an Environmental Office- or DRMO-approved TSDF.

- Prior to transport off-Station, a disposal return document (Department of Defense [DOD] Form 1348-1) is completed by the Environmental Office and turned in to the DRMO. This form is in addition to the California Hazardous Waste Manifest which is completed prior to shipment. Manifests are retained in the Environmental Office files for a minimum of 3 years.

12.3.1.3 DRMO Responsibilities

Upon receipt of DOD Form 1348-1, the DRMO:

- Inspects the containers for integrity, labeling, and packaging

- Prepares an Order for Supplies or Services (DOD Form 1155) authorizing services of the hazardous waste contractor for pickup. Form 1155 specifies the locations and types of hazardous wastes to be picked up.

- Checks and approves the Hazardous Waste Manifest prior to shipment, and

- Provides a copy of the manifest to the Environmental Office.

12.3.2 Waste Disposal

Hazardous wastes generated at MCAS El Toro are shipped off-Station for disposal or recycling. Bulk petroleum recyclables (i.e., waste oil and fuel) are pumped by the FMD pump truck, stored on-Station in storage tanks, and eventually shipped off-Station for recycling. Waste solvents are picked up from the generator accumulation area or the storage facility by an off-Station contractor and recycled.

Nonrecyclable hazardous wastes are shipped off-Station for disposal. Off-Station disposal of hazardous waste may be scheduled by either the Environmental Office or DRMO. Table 12-2

Table 12-2
Shipments to Treatment, Storage, and Disposal Facilities in CY 1992
MCAS El Toro

Facility EPA ID Number	Number of Shipments	Address and Phone Number	Waste Type
AZD982465866	8	S.D. Myers 4425 Santa Fe Dr. Kingman, AZ 86401 (602) 757-1314	PCBs
AZD983478322	4	High Desert Recovery Systems 2130 West Filmore Street Phoenix, AZ 85009 (602) 495-1987	PCBs
CAD000633164	4	Laidlaw Environmental Services 5295 South Garvey Road Westmoreland, CA 92281 (619) 344-9400	Contaminated soil
CAD067786749	7	BKK Landfill 2210 Azusa Road West Covina, CA 91790 (818) 965-0316	Asbestos
CAD089446710	3	Summit Environmental 3033 West Mission Road Alhambra, CA 91803 (818) 457-9933	Miscellaneous solvents
CAD09007626	1	Azusa Land Reclamation 1201 W. Gladstone Azusa, CA 91702 (818) 334-0719	Asbestos
CAD097030993	1	Norris Environmental 5215 South Boyle Avenue Vernon, CA 90058 (213) 588-7111	Calcium hypochlorite
CAD980737076	6	Dico Oil Company 2700 Rose Avenue Signal Hill, CA 90806 (310) 427-9811	Waste fuel
CAD981458466	11	Gibson Environmental 401 Canal Street Wilmington, CA 90744 (213) 549-9117	Oil and water with chromium
CAD990794133	3	Forward Landfill, Inc. 9999 Austin Road Stockton, CA 95203 (209) 466-5192	Asbestos
CAT000613976	12	Safety-Kleen Corporation 2120 South Yale Street Santa Ana, CA 92704 (714) 557-0840	Solvents and mineral spirits
CAT000646117	8	Chemical Waste Management 35251 Old Skyline Road Kettleman City, CA 93239 (209) 386-9711	Soil contaminated with oil, crushed containers, concrete, and piping

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Table 12-2 (continued)
Shipments to Treatment, Storage, and Disposal Facilities in CY 1992
MCAS El Toro

Facility EPA ID Number	Number of Shipments	Address and Phone Number	Waste Type
CAT040370745	1	W.H. Tank Lines 2202 Spring Street Long Beach, CA 90809 (310) 427-3109	Antifreeze, motor oil, lube, grease, hydraulic fluid
CAT080010101	18	Appropriate Technologies 1700 Maxwell Road Chula Vista, CA 92019 (619) 421-1175	Various
CAT080011059	2	Petroleum Recycling Corporation 1835 East 29th Street Signal Hill, CA 90806 (213) 595-6597	Motor oil, lube oil, hydraulic fluid, water with paint, degreaser, debris
CAT080013352	5	DeMenno-Kerdoon 2100 North Alameda Street Compton, CA 90222 (213) 537-7100	Water (99%) contaminated with petroleum products (1%)
CAT080025711	1	Petroleum Recycling Corporation 13579 Whittram Avenue Fontana, CA 92335 (714) 350-1840	Waste petroleum oil
IDD073114654	2	Envirosafe Services of Idaho 10.5 miles Northwest of Grandview Grandview, ID 83624 (208) 384-1500	Rags and absorbent with petroleum products, oil and fuel filters
KSD981506025	2	Aptus, Inc. P.O. Box 1328/Hwy 169 North Coffeyville, KS 67337 (316) 251-6380	PCBs
NVT330010000	4	US Ecology, Inc. P.O. Box 578/Hwy 95 Beatty, NV 89003 (702) 553-2203	PCBs and sandblast grit
UTD991301748	2	USPCI Grassey Mountain Facility Clive, UT (801) 534-0054	PCBs
WAD058367152	72	Northwest Enviroservice, Inc. 1500 Airport Way South Seattle, WA 98134 (206) 622-1090	Various

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lists names, addresses, telephone numbers, EPA identification numbers of TSDFs used by the Environmental Office and DRMO.

The TSDF primarily used by DRMO for off-Station shipment and disposal of hazardous waste is Northwest EnviroService Inc. (NES). The majority of these shipments are done through the DRMO contract with NES; however, the Environmental Office may also use another TSDF for disposal of hazardous waste.

12.4 Hazardous Waste Minimization Approaches

12.4.1 Off-Station Recycling Projects

The Station has several ongoing hazardous waste recycling projects, and the most recent and accurate information on recycling rates is from CY 1993. The types of wastes commonly recycled include oil, JP-5, oil/fuel filters, empty drums, lead acid batteries, photographic lab waste, and spent solvents. The last two, solvents and rags, are recycled through supplier/recycler service contracts. Safety-Kleen Corporation has provided solvent recycling services during 1992 and 1993. As of the writing of this report, MCAS El Toro was in the process of selecting a rag supplier/recycler. Table 12-3 summarizes the information on ongoing recycling programs and the designated recyclers.

12.4.2 Program for Reutilization of Hazardous Materials

DRMO's hazardous material reutilization program arranges for reuse or resale of unused or surplus hazardous materials by another DOD or government agency. Surplus materials are turned in by Supply, other units, or other activities to DRMO, though in most cases DRMO does not take physical custody of these chemicals. Reuse or resale of surplus hazardous materials must be approved by the Environmental Office. The actual transfer is done only on paper.

The hazardous material reutilization program concerns only materials that can be reused. Sometimes materials with an expired shelf life are sold to the general public for their recyclable value (e.g., British Thermal Unit [Btu] value in the case of motor oil) or feed stock value. If surplus materials cannot be used by MCAS El Toro, the materials are first made available to DOD (i.e., U.S. Army, Navy, Air Force), other federal agencies, local state agencies, and then local government agencies. After the inter-governmental screening process, hazardous materials may also be sold to the general public and private companies. Proceeds from the sales are returned to the Station.

12.5 Effectiveness of Waste Minimization Approaches Implemented Since Baseline Year (1990)

Since the baseline year report, 11 of the 24 waste minimization approaches have been implemented. Table 3-5 of the Source Reduction Evaluation Review and Plan detail the approaches recommended and their current status. Tracking the effectiveness of these approaches is extremely difficult due to factors that have affected hazardous waste generation. Due to Base Realignment and Closure Program operations being performed at several other military bases, many activities have been shifted to MCAS El Toro resulting in an overall increase in the amount of waste generated, though the amount per activity has been decreasing.

Three of the 11 approaches have been implemented, or are being implemented, that will result in a significant reduction in waste generation:

- MCAS El Toro is currently in the process of contracting a rag supplier/recycler service. Once the contractor is operating, the waste reduction will be 100 percent . All the rags used will be cleaned and recycled by the contractor.

- The Environmental Office is currently evaluating several types of absorbents. These absorbents are intended to be alternatives to the standard "kitty-litter" type absorbent

Table 12-3
Hazardous Waste Recycled in CY 1993
MCAS El Toro

Waste Type	Amount	Recycler
Oil	10,232 gallons	Gibson Environmental DeMenno-Kerdoon Petroleum Recycling Corp.
JP-5	9,900 gallons	Dico Oil Co.
Batteries	64 each	Northwest Enviro Services, Inc.
Oil/Fuel Filters	47 drums	Envirosafe Services of Idaho
Steel Drums	17,600 pounds	Northwest EnviroService, Inc.
Photographic Silver	1,000 pounds	Northwest EnviroService, Inc.

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commonly used. Evaluation criteria include absorbing effectiveness, amount of waste generated, and cost-effectiveness, both in capital expense and disposal costs.

- Improved spill prevention, management, and clean-up procedures, and the installation of automatic shutoff valves and high-level alarms on bulk storage tanks have significantly reduced the amount of oil, solvent, waste JP-5 and JP-5 contaminated water generated.

The report to be written following calendar year 1994 will be able to evaluate the effectiveness of the rag and absorbent projects currently underway.

12.6 Factors Affecting Current Hazardous Waste Generation and Management

Within the U.S. Armed Forces, the Base Realignment and Closure Program has caused activities to be transferred to MCAS El Toro as bases are closed. This action has resulted in a net increase in the amount of waste generated at MCAS El Toro, from 2.7 million pounds in 1990 to 4.0 million pounds in 1992. Though the amount of waste generated per squadron, unit, and activity has decreased, the total has increased.

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Appendix A

Log of Wastes Manifested Off-Station in 1992

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MCAS-El Toro: Manifest Log 1992

State WC	State Other	EPA WC	EPA other	Container No.	Container Type	Total Qty.	Unit	SG or conv. factor	Weight (P)	Total by State WC	% of Total	Code		Station Personnel Waste Description	Manifest Number	Date Gener. Release	Designated Facility EPA ID No.
Extremely Hazardous Waste																	
141		D001		1	DM	52	P		52			E		Calcium hypochlorite	92786108	12/02/92	WAD058367152
141		D001		1	DM	71	P		71			E		Calcium hypochlorite	91663573	04/17/92	WAD058367152
141		D001		1	DF	25	P		25			E		Waste calcium hypochlorite	89588671	07/07/92	CAD097030993
141		D002		1	DF	25	P		25	173	0.063%	E		Waste hypochlorite solution	91788247	03/30/92	CAT080010101
181		D002	D009	1	DM	27	P		27			E		Mercury batteries w/ potassium hydroxide	91661155	09/09/92	WAD058367152
181		D002	D009	1	DM	85	P		85			E		Mercury batteries w/ potassium hydroxide	92786108	12/02/92	WAD058367152
181		D002	D009	1	DM	104	P		104			E		Mercury batteries w/ potassium hydroxide	91664427	07/27/92	WAD058367152
181		D002	D009	1	DM	187	P		187			E		Mercury batteries w/ potassium hydroxide	91663573	04/17/92	WAD058367152
181		D009		1	DM	40	P		40			E		Waste mercury	91663138	11/06/92	WAD058367152
181		D002		2	DF	25	P		25	468	0.170%	E		Waste metallic mercury, contaminated w/debris	91788357	03/06/92	CAD981424732
261		NR		1	DM	136	K	2.20	299			E	X	Drained OFCs	91522041	10/05/92	AZD983478322
261		NR		2	DM	228	K	2.20	502			E	X	Drained OFCs and rags	91522044	10/20/92	AZD983478322
261		NR		1	CM	1407	K	2.20	3095			E	X	Drained transformers	90708389	12/01/92	KSD981506025
261		NR		2	CM	4454	K	2.20	9799			E	X	Drained transformers	91522049	11/09/92	AZD983478322
261		NR		2	TP	4769	K	2.20	10492			E	X	Drained transformers	89431828	04/13/92	AZD982465866
261		NR		30	CM	6464	K	2.20	14221			E	X	Drained transformers	91522041	10/05/92	AZD983478322
261		NR		2	TP	6773	K	2.20	14901			E	X	Drained transformers	89431828	04/13/92	AZD982465866
261		NR		5	TP	7839	K	2.20	17246			E	X	Drained transformers	90766627	03/16/92	AZD982465866
261		NR		1	CM	8772	K	2.20	19298			E	X	Drained transformers	91522043	10/19/92	AZD983478322
261		NR		3	TP	13386	K	2.20	29449			E	X	Drained transformers	90766643	02/11/92	AZD982465866
261		NR		15	CM	5132	K	2.20	11290			E	X	Drained transformers (14) and tank (1)	91522044	10/20/92	AZD983478322
261		NR		1	DM	45	K	2.20	99			E	X	Drums of switches w/ PCBs	90766609	03/23/92	AZD982465866
261		NR		1	DM	50	K	2.20	110			E	X	Drums of switches w/ PCBs	88329231	03/23/92	AZD982465866
261		NR		1	DM	68	K	2.20	150			E	X	Drums of switches w/ PCBs	90766620	02/27/92	AZD982465866
261		NR		4	DM	236	K	2.20	519			E	X	Drums of switches w/ PCBs	90766627	03/16/92	AZD982465866
261		NR		5	DM	455	K	2.20	1001			E	X	Drums of switches w/ PCBs	89431828	04/13/92	AZD982465866
261		NR		5	DM	885	K	2.20	1947			E	X	Drums of switches, debris	89431828	04/13/92	AZD982465866
261		NR		1	DM	84	K	2.20	185			E	X	Light ballast w/ PCBs	91067922	02/21/92	KSD981506025
261		NR		1	DM	90	K	2.20	1651			E	X	Light ballast w/ PCBs	91753891	07/13/92	NVT330010000
261		NR		8	TP	1945	K	2.20	4279			E	X	Liquid filled transformers	92275729	09/09/92	AZD982465866
261		NR		1	TP	2695	K	2.20	5929			E	X	Liquid filled transformers	90766609	03/23/92	AZD982465866
261		NR		2	TP	4047	K	2.20	8903			E	X	Liquid filled transformers	90766627	03/16/92	AZD982465866
261		NR		5	TP	5111	K	2.20	11244			E	X	Liquid filled transformers	90766643	02/11/92	AZD982465866
261		NR		4	TP	8400	K	2.20	18480			E	X	Liquid filled transformers	90766620	02/27/92	AZD982465866
261		NR		7	TP	13427	K	2.20	29539			E	X	Liquid filled transformers	88329231	03/23/92	AZD982465866
261		NR		11	DM	2035	K	2.20	4477			E	X	Mineral oil with PCBs	91522044	10/20/92	AZD983478322
261		NR		1	DM	111	K	2.20	244			E	X	Oil contaminated w/ PCBs	91067922	02/21/92	KSD981506025
261		NR		1	DM	189	K	2.20	416			E	X	Oil contaminated w/ PCBs	91522044	10/20/92	AZD983478322
261		NR		2	DM	591	K	2.20	1300			E	X	Oil contaminated w/ PCBs	90766620	02/27/92	AZD982465866
261		NR		4	DM	756	K	2.20	1663			E	X	Oil contaminated w/ PCBs	91522041	10/05/92	AZD983478322
261		NR		4	DM	1060	K	2.20	2332			E	X	Oil contaminated w/ PCBs	90708389	12/01/92	KSD981506025
261		NR		1	DM	1134	K	2.20	2495			E	X	Oil contaminated w/ PCBs	89431828	04/13/92	AZD982465866
261		NR		8	DM	1480	K	2.20	3256			E	X	Oil contaminated w/ PCBs	91522041	10/05/92	AZD983478322
261		NR		8	DM	2091	K	2.20	4600			E	X	Oil contaminated w/ PCBs	90766609	03/23/92	AZD982465866
261		NR		4	DM	2227	K	2.20	4899			E	X	Oil contaminated w/ PCBs	89431828	04/13/92	AZD982465866
261		NR		10	DM	3091	K	2.20	6800			E	X	Oil contaminated w/ PCBs	90766627	03/16/92	AZD982465866

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State WC	State Other	EPA WC	EPA other	Container No.	Container Type	Total Qty.	Unit	SG or conv. factor	Weight (P)	Total by State WC	% of Total	Code		Station Personnel Waste Description	Manifest Number	Date Gener. Release	Designated Facility EPA ID No.
261		NR		12	DM	4168	K	2.20	9170			E	X	Oil contaminated w/ PCBs	90766613	02/11/92	AZD982465866
261		NR		3	DM	327	K	2.20	719			E	X	Oil fuse cutouts w/ PCBs	91522049	11/09/92	AZD983478322
261		NR		4	CM	91	K	2.20	200			E	X	PCB contaminated cabinets	90766609	03/23/92	AZD982465866
261		NR		8	DM	1426	K	2.20	3137			E	X	PCB contaminated oil	91522049	11/09/92	AZD983478322
261		NR		27	DM	5189	K	2.20	11416			E	X	PCB contaminated oil	91522043	10/19/92	AZD983478322
261		NR		1	DM	140	K	2.20	308			E	X	Small caps w/ PCBs	90826135	06/05/92	UTD991301748
261		NR		1	CM	522	K	2.20	1148	273211	99.279%	E	X	Transformer with PCBs	90826135	06/05/92	UTD991301748
541		NR		2	DF	450	P		450	450	0.164%	E		Photochemical Bleach - labpack	91788228	01/27/92	CAT080010101
725		D009	U151	1	DM	65	P		65			E		Waste mercury	91661461	10/07/92	WAD058367152
725		D009		1	DM	100	P		100	165	0.060%	E		Waste mercury	91665055	02/18/92	WAD058367152
791		D002		1	DM	727	P		727	727	0.264%	E		Waste hydrochloric acid solution	92786224	12/14/92	WAD058367152
			Total Extremely Hazardous Waste (lb)						**275194**		**100%**						
Hazardous Waste																	
122		D002		1	DM	144	P		144					Absorbent w/ sodium hydroxide	91504774	06/17/92	WAD058367152
122		D002		1	DF	1	G	1.50	13					Ammonium hydroxide	89588664	07/07/92	CAT080010101
122		D002		1	DF	5	G	1.50	63					Ammonium hydroxide	91788217	01/31/92	CAT080010101
122		D002		1	DM	247	P		247					Cleaning compound	91665087	02/25/92	WAD058367152
122		D002		24	DM	1184	P		1184					Cleaning compound	91664684	06/04/92	WAD058367152
122		D002		1	DM	448	P		448					Cleaning compound w/ sodium hydroxide	91663573	04/17/92	WAD058367152
122		D002		1	DM	486	P		486					Cleaning compound w/ sodium hydroxide	91663573	04/17/92	WAD058367152
122		D002		2	DM	785	P		785					Cleaning compound w/ sodium hydroxide	91661259	09/23/92	WAD058367152
122		D002		1	DM	32	P		32					Corrosion inhibitor/dispersant with sodium hydroxide	91661312	09/30/92	WAD058367152
122		D002	D023	2	DM	260	P		260					Floor polish remover	91664589	05/14/92	WAD058367152
122		D002		1	DF	10	G	0.80	67					Off-spec alkaline cleaner	90988707	06/11/92	CAT080010101
122		D002		2	DM	1225	P		1225					Sodium hydroxide solution	92786224	12/14/92	WAD058367152
122		D002		2	DM	363	P		363					Waste sodium hydroxide	91661312	09/30/92	WAD058367152
122		D002		1	DM	42	P		42	5358	0.134%			Wet alkaline batteries	92786108	12/02/92	WAD058367152
123		D002		1	DF	1	G	0.80	7					Alkaline liquid	89588664	07/07/92	CAT080010101
123	551	D001	D002	1	DF	25	P		25	32	0.001%			Lab pack - waste corrosive liquids (diethylenetriamine, phenol)	90988752	07/09/92	CAT080010101
132		D005		1	DM	32	P		32					Latex paint w/ metals	91664684	06/04/92	WAD058367152
132		D008		1	DM	340	P		340					Neutralized acid w/ lead	91664427	07/27/92	WAD058367152
132		D008		2	DM	819	P		819					Neutralized acid w/ lead	91663573	04/17/92	WAD058367152
132		D008		1	DM	434	P		434					Neutralized battery acid	91664641	07/14/92	WAD058367152
132		D008		2	DM	912	P		912					Neutralized battery acid	91664589	05/14/92	WAD058367152
132		D008		2	DM	1088	P		1088	3625	0.090%			Neutralized battery acid	91661255	09/23/92	WAD058367152
133		F002			DM	65	P		65					Detergent w/ 1,1,1-TCA	91664684	06/04/92	WAD058367152
133		F002		1	DM	119	P		119	184	0.005%			Detergent w/ 1,1,1-TCA	91661312	09/30/92	WAD058367152
135		NR		1	DM	55	G	1.00	459					Waste water	92480955	11/30/92	CAT080010101
135		NR		1	TT	2800	G	1.00	23352					Waste water	92000409	07/27/92	CAT080013352
135		NR		1	TT	5000	G	1.00	41700					Waste water	92001198	07/27/92	CAT080013352

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State WC	State Other	EPA WC	EPA other	Container No.	Container Type	Total Qty.	Unit	SG or conv. factor	Weight (P)	Total by State WC	% of Total	Code		Station Personnel Waste Description	Manifest Number	Date Gener. Release	Designated Facility EPA ID No.
135		NR		1	TT	5000	G	1.00	41700					Waste water	92001117	07/10/92	CAT080013352
135		NR		4	DM	220	G	1.00	1835	109046	2.721%			Water contaminated with paint, degreaser, debris	92000636	09/30/92	CAT080011059
141	331	NR		3	DM	1040	P		1040	1040	0.026%			Decon packets, solid powder	91788261	02/26/92	CAT000646117
151		NR		9	BA	1	Y		57				X	Asbestos	91822177	01/29/92	CAD067786749
151		NR		1	DM	220	P		220				X	Asbestos	91664925	02/19/92	WAD058367152
151		NR		1	CM	5	Y		285				X	Asbestos	91822021	07/28/92	CAD067786749
151		NR		3	DM	298	P		298				X	Asbestos	91663310	03/13/92	WAD058367152
151		NR		128	BA	8	Y		456				X	Asbestos	88283084	04/06/92	CAD067786749
151		NR		1	CM	10	Y		570				X	Asbestos	92788479	12/21/92	CAD09007626
151		NR		1	CM	20	Y		1140				X	Asbestos	91822072	01/09/92	CAD067786749
151		NR		48	BA	20	Y		1140				X	Asbestos	88283087	04/08/92	CAD067786749
151		NR		684	BA	22	Y		1254				X	Asbestos	90571452	06/04/92	CAD990794133
151		NR		681	BA	22	Y		1254				X	Asbestos	90571450	06/04/92	CAD990794133
151		NR		730	BA	23	Y		1311				X	Asbestos	90571451	06/04/92	CAD990794133
151		NR		1	CM	35	Y		1995				X	Asbestos	91822056	01/08/92	CAD067786749
151		NR		9	BA	2154	P		2154				X	Asbestos	90988702	06/05/92	CAD067786749
151		NR		3	CW	3428	P		3428	15562	0.388%		X	Asbestos	91504774	06/17/92	WAD058367152
171		D006	D007 D008	1	DM	245	P		245					Washrack sludge	91663571	04/17/92	WAD058367152
171		D006	D007 D008	3	DM	1112	P		1112					Washrack sludge	91663573	04/17/92	WAD058367152
171		D006	D007 D008	3	DM	1114	P		1114					Washrack sludge	91661461	10/07/92	WAD058367152
171		D006	D007 D008	2	DM	1222	P		1222					Washrack sludge	91664925	02/19/92	WAD058367152
171		D006	D007 D008	2	DM	1240	P		1240					Washrack sludge	91664641	07/14/92	WAD058367152
171		D006	D007 D008	4	DM	2226	P		2226					Washrack sludge	91661155	09/09/92	WAD058367152
171		D006	D007 D008	6	DM	2980	P		2980					Washrack sludge	91661243	09/25/92	WAD058367152
171		D006	D007 D008	14	DM	9960	P		9960	20099	0.501%			Washrack sludge	91663521	04/09/92	WAD058367152
172		D006	D007 D008	1	DM	240	P		240					Blasting booth sand w/ paint chips	91661243	09/25/92	WAD058367152
172		D005	D006 D007 D008	3	DM	3180	P		3180					Sand blast grit w/ barium, cadmium, chromium	91663573	04/17/92	WAD058367152
172		D005	D006 D007 D008	1	DM	582	P		582					Sand blast grit w/ barium, cadmium, chromium, lead	91664684	06/04/92	WAD058367152
172		D005	D006 D007 D008	3	DM	1750	P		1750					Sand blast grit w/ barium, cadmium, chromium, lead	91505130	07/28/92	WAD058367152
172		D005	D006 D007 D008	2	DM	1404	P		1404					Sand blast grit w/ barium, chromium, lead	91504763	06/08/92	WAD058367152
172		D008		2	CM	16	Y		43520					Waste sandblast grit	92000604	09/11/92	NVT330010000
172		D008		2	CM	16	Y		43520	94196	2.350%			Waste sandblast grit	92000603	09/11/92	NVT330010000
181		D007		1	DM	269	P		269					Air filter material w/ chromium	91661243	09/25/92	WAD058367152
181		D007		3	DM	425	P		425					Air filter material w/ chromium	91664589	05/14/92	WAD058367152
181		NR		2	DM	1632	P		1632					Chlorine bleaching powder	91663347	03/20/92	WAD058367152
181		NR		1	CM	7	T	2000	14000					Concrete, piping and tanks	91538982	02/24/92	CAT000646117
181		NR		1	CM	7	T	2000	14000					Concrete, piping and tanks	91538981	02/24/92	CAT000646117
181		D002	D009	1	DM	48	P		48					Dry alkaline batteries w/ manganese	91661312	09/30/92	WAD058367152
181		D001	D008	1	DM	126	P		126				X	Lead acid batteries	91661461	10/07/92	WAD058367152
181		D001	D003	2	DM	490	P		490					Lithium batteries	91663573	04/17/92	WAD058367152
181		D001	D003	2	DM	742	P		742					Lithium batteries	91664684	06/04/92	WAD058367152
181		D001	D003	2	DM	863	P		863					Lithium batteries	91661243	09/25/92	WAD058367152
181		D002	D006	1	DM	26	P		26					Nickel cadmium batteries	91664684	06/04/92	WAD058367152
181		NR		1	DM	58	P		58					Oil debris	92786224	12/14/92	WAD058367152
181		NR		1	DM	95	P		95					Oil debris	91664427	07/27/92	WAD058367152
181		NR		1	DM	225	P		225					Oil debris	91662830	10/14/92	WAD058367152

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State WC	State Other	EPA WC	EPA other	Container No.	Container Type	Total Qty.	Unit	SG or conv. factor	Weight (P)	Total by State WC	% of Total	Code		Station Personnel Waste Description	Manifest Number	Date Gener. Release	Designated Facility EPA ID No.
181		NR		2	DM	300	P		300					Oil debris	91661259	09/23/92	WAD058367152
181		NR		1	DM	400	P		400					Oil debris	92786074	11/19/92	WAD058367152
181		NR		3	DM	1172	P		1172					Oil debris	91660969	08/21/92	WAD058367152
181		NR		7	DM	1488	P		1488					Oil debris	91661312	09/30/92	WAD058367152
181		NR		6	DM	2805	P		2805					Oil debris	91663113	11/06/92	WAD058367152
181		NR		3	DM	582	P		582					Oil spill cleanup	91662830	10/14/92	WAD058367152
181		NR		4	DM	1383	P		1383					Oil spill cleanup, petroleum oils	91661155	09/09/92	WAD058367152
181		NR		22	DM	4650	P		4650					Oil spill cleanup, petroleum oils	91664589	05/14/92	WAD058367152
181		NR		11	DM	5160	P		5160					Oil spill cleanup, petroleum oils	91663573	04/17/92	WAD058367152
181		NR		26	DM	8516	P		8516					Oil spill cleanup, petroleum oils	91663380	03/26/92	WAD058367152
181		NR		1	DM	247	P		247					Oil spill cleanup, petroleum oils, JP-5	91664641	07/14/92	WAD058367152
181		NR		2	DM	314	P		314					Oil spill cleanup, petroleum oils, JP-5	91664661	06/17/92	WAD058367152
181		NR		6	DM	992	P		992					Oil spill cleanup, petroleum oils, JP-5	91504774	06/17/92	WAD058367152
181		NR		6	DM	1269	P		1269					Oil spill cleanup, petroleum oils, JP-5	91664589	05/14/92	WAD058367152
181		NR		17	DM	2866	P		2866					Oil spill cleanup, petroleum oils, JP-5	91665087	02/25/92	WAD058367152
181		NR		8	DM	4110	P		4110					Oil spill cleanup, petroleum oils, JP-5	91504773	06/10/92	WAD058367152
181		NR		22	DM	8411	P		8411					Oil spill cleanup, petroleum oils, JP-5	91664684	06/04/92	WAD058367152
181		NR		1	DM	300	P		300					Oil spill cleanup, petroleum oils, JP-5, aviation fuel	91663347	03/20/92	WAD058367152
181		NR		3	DM	462	P		462					Oil spill cleanup, petroleum oils, JP-5, aviation fuel	91505130	07/28/92	WAD058367152
181		NR		3	DM	470	P		470					Oil spill cleanup, petroleum oils, JP-5, aviation fuel	91663317	03/26/92	WAD058367152
181		NR		5	DM	1139	P		1139					Oil spill cleanup, petroleum oils, JP-5, aviation fuel	91663459	03/31/92	WAD058367152
181		NR		10	DM	2084	P		2084					Oil spill cleanup, petroleum oils, JP-5, aviation fuel	91663573	04/17/92	WAD058367152
181		NR		30	DM	8328	P		8328					Oil spill cleanup, petroleum oils, JP-5, aviation fuel	91505130	07/28/92	WAD058367152
181		NR		56	DM	11138	P		11138					Oil spill cleanup, petroleum oils, JP-5, aviation fuel	91663571	04/17/92	WAD058367152
181		NR		28	DM	13017	P		13017					Oil spill cleanup, petroleum oils, JP-5, aviation fuel	91663310	03/13/92	WAD058367152
181		D005	D006 D007 D008	1	DM	124	P		124					Paint booth filters	91661243	09/25/92	WAD058367152
181		D005	D006 D007 D008	1	DM	218	P		218					Paint booth filters	91661255	09/23/92	WAD058367152
181		D005	D006 D007 D008	4	DM	441	P		441					Paint booth filters	91663521	04/09/92	WAD058367152
181		NR		1	DM	592	P		592				X	Soil contaminated with JP-5, petroleum distillates	91663459	03/31/92	WAD058367152
181		NR		1	DM	760	P		760				X	Soil w/ diesel	91663310	03/13/92	WAD058367152
181		NR		2	CM	80	Y		217600				X	Soil, plastic, PPE from drilling operations	88654331	12/03/92	CAD000633164
181		NR		2	CM	80	Y		217600				X	Soil, plastic, PPE from drilling operations	90985993	12/15/92	CAD000633164
181		NR		2	CF	1020	P		1020					Waste bleaching powder	91663573	04/17/92	WAD058367152
181		D002		1	DM	45	P		45	553002	13.797%			Waste lantern batteries, dry, containing potassium hydroxide	91662996	11/06/92	WAD058367152
211		NR		1	DM	45	G	1.60	600					Freon	91788233	02/04/92	CAD089446710
211	741	D007		1	DM	15	G	0.80	100					Methylene chloride, phenol, sodium chromate	91788217	01/31/92	CAT080010101
211		D002	D007 D039	1	DM	126	P		126					Paint remover	91663521	04/09/92	WAD058367152
211		D002	F002 F004 D026	5	DM	2002	P		2002					Paint remover w/ methylene chloride	92786187	12/02/92	WAD058367152
211		D002	F002 F004 D026	2	DM	286	P		286					Paint remover w/ methylene chloride, cresol, phenol	91665055	02/18/92	WAD058367152
211		D002	F002 F004 D026	4	DM	2466	P		2466					Paint remover w/ methylene chloride, cresol, phenol	91663573	04/17/92	WAD058367152
211		F002	F005 F007	1	DM	92	P		92					Paint thinner w/ methylene chloride	91661243	09/25/92	WAD058367152
211		F002		2	DM	254	P		254					Rags contaminated w/ methylene chloride	91664925	02/19/92	WAD058367152
211		F002		1	DM	98	P		98					Rags w/ 1,1,1-TCA	91504773	06/10/92	WAD058367152
211		D007	F002	1	DM	612	P		612					Sand, debris w/ paint stripper	91504773	06/10/92	WAD058367152
211		D001	F001 F002	1	DM	305	P		305					Solvent w/ fuel	91663459	03/31/92	WAD058367152
211		NR			DM	754	P		754					Unused trichlorotrifluoroethane	91664684	06/04/92	WAD058367152
211		NR		1	TT	2344	G	0.80	15639					Waste petroleum oil	90832120	10/01/92	CAT080025711
211		F002		2	DM	144	P		144	23479	0.586%			Waste trichlorotrifluoromethane	91664427	07/27/92	WAD058367152
212		U226		1	DM	294	P		294					1,1,1-TCA	91663521	04/09/92	WAD058367152

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212		F001		2	DM	648	P		648					1,1,1-TCA	91663521	04/09/92	WAD058367152
212		D001	F003	1	DM	70	P		70					Acetone	91665055	02/18/92	WAD058367152
212		D001	U002	1	DM	80	P		80					Acetone	91664427	07/27/92	WAD058367152
212		D001		3	DM	688	P		688					Isopropanol	91664684	06/04/92	WAD058367152
212		D001		1	DM	48	P		48					Isopropyl alcohol	91663113	11/06/92	WAD058367152
212		D001		1	DM	236	P		236					Isopropyl alcohol	91663571	04/17/92	WAD058367152
212		D001		1	DM	364	P		364					Isopropyl alcohol w/ ethyl alcohol	91664589	05/14/92	WAD058367152
212		D001	D035 F005	1	DM	74	P		74					MEK	91660969	08/21/92	WAD058367152
212		D001	D035 U159	1	DM	76	P		76					MEK	91661461	10/07/92	WAD058367152
212		D001	F005 D035	1	DM	93	P		93					MEK	91663573	04/17/92	WAD058367152
212		D001	F005 D035	1	DM	96	P		96					MEK	91661255	09/23/92	WAD058367152
212		D001	F005 D035	1	DM	99	P		99					MEK	91665055	02/18/92	WAD058367152
212		D001	D035 U159	1	DM	160	P		160					MEK	92786108	12/02/92	WAD058367152
212		D001	U154	1	DM	39	P		39					Methanol	91661461	10/07/92	WAD058367152
212		D001	U154	1	DM	51	P		51					Methanol	91664427	07/27/92	WAD058367152
212		D001		3	DF	350	P		350					Miscellaneous aerosol spray paint, coating, lube, cleaners	AR-547681	01/27/92	ARD069748192
212		D001	F003 F005 D035	1	DM	44	P		44					Paint thinner w/ MEK, n-butylacetate, xylene, toluene	92786224	12/14/92	WAD058367152
212		D001	F003 F005 D035	1	DM	66	P		66					Paint thinner w/ MEK, n-butylacetate, xylene, toluene	91661259	09/23/92	WAD058367152
212		D001	F003 F005 D035	1	DM	74	P		74					Paint thinner w/ MEK, n-butylacetate, xylene, toluene	91664684	06/04/92	WAD058367152
212		D001	F003 F005 D035	1	DM	86	P		86					Paint thinner w/ MEK, n-butylacetate, xylene, toluene	91663573	04/17/92	WAD058367152
212		D001	F003 F005 D035	2	DM	148	P		148					Paint thinner w/ MEK, n-butylacetate, xylene, toluene	91663521	04/09/92	WAD058367152
212		D001	F003 F005 D035	5	DM	371	P		371					Paint thinner w/ MEK, n-butylacetate, xylene, toluene	91661010	09/01/92	WAD058367152
212		D001	F003 F005 D035	3	DM	902	P		902					Paint thinner w/ MEK, n-butylacetate, xylene, toluene	91663521	04/09/92	WAD058367152
212		D001	F003 F005 D035	1	DM	60	P		60					Solvent spill cleanup	91504773	06/10/92	WAD058367152
212		D001	F003 F005 D035	1	DM	61	P		61					Solvent spill cleanup	92786108	12/02/92	WAD058367152
212		D001	F003 F005 D035	1	DM	63	P		63					Solvent spill cleanup	91661010	09/01/92	WAD058367152
212		D001	F003 F005 D035	1	DM	124	P		124					Solvent spill cleanup	91505130	07/28/92	WAD058367152
212		D001	F003 F005 D035	1	DM	129	P		129					Solvent spill cleanup	92786108	12/02/92	WAD058367152
212		D001	F003 F005 D035	1	DM	171	P		171					Solvent spill cleanup	91663317	03/26/92	WAD058367152
212		D001	F003 F005 D035	2	DM	194	P		194					Solvent spill cleanup	91663573	04/17/92	WAD058367152
212		D001	F003 F005 D035	1	DM	202	P		202					Solvent spill cleanup	91663310	03/13/92	WAD058367152
212		D001	F003 F005 D035	1	DF	234	P		234					Solvent spill cleanup	91664725	06/19/92	WAD058367152
212		D001	F003 F005 D035	1	DM	240	P		240					Solvent spill cleanup	91504774	06/17/92	WAD058367152
212		D001	F003 F005 D035	1	DM	300	P		300					Solvent spill cleanup	91664725	06/19/92	WAD058367152
212		D001	F003 F005 D035	2	DM	442	P		442					Solvent spill cleanup	91661243	09/25/92	WAD058367152
212		D001	F003 F005 D035	1	DM	453	P		453					Solvent spill cleanup	91664427	07/27/92	WAD058367152
212		D001	F003 F005 D035	1	DM	478	P		478					Solvent spill cleanup	91664684	06/04/92	WAD058367152
212		D001	F003 F005 D035	3	DM	701	P		701					Solvent spill cleanup	91663459	03/31/92	WAD058367152
212		D001	F003 F005 D035	3	DM	714	P		714					Solvent spill cleanup	91663258	03/11/92	WAD058367152
212		D001	F003 F005 D035	2	DM	718	P		718					Solvent spill cleanup	91663347	03/20/92	WAD058367152
212		D001	F003 F005 D035	7	DM	1021	P		1021					Solvent spill cleanup	91663571	04/17/92	WAD058367152
212		D001	F003 F005 D035	7	DM	1118	P		1118	12580	0.314%			Solvent spill cleanup	91663521	04/09/92	WAD058367152
213		D005		1	DM	102	P		102					Aerosol corrosion preventative w/ barium	91663317	03/26/92	WAD058367152
213		D005		1	DM	207	P		207					Aerosol corrosion preventative w/ barium	91665055	02/18/92	WAD058367152
213		D005		1	DM	62	P		62					Aerosol corrosion preventative w/barium	91661312	09/30/92	WAD058367152
213		D001		1	DM	67	P		67					Corrosion preventative compound	91661259	09/23/92	WAD058367152
213		D001		1	DM	69	P		69					Corrosion preventative compound	91664684	06/04/92	WAD058367152
213		D001		1	DM	82	P		82					Corrosion preventative compound	91661243	09/25/92	WAD058367152
213		D001		1	DM	100	P		100					Corrosion preventative compound	91664925	02/19/92	WAD058367152
213		D001		1	DM	150	P		150					Corrosion preventative compound	91661243	09/25/92	WAD058367152

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213		D001		1	DM	199	P		199					Corrosion preventative compound	91665055	02/18/92	WAD058367152
213		D001		3	DM	211	P		211					Corrosion preventative compound	91661010	09/01/92	WAD058367152
213		D001		1	DM	226	P		226					Corrosion preventative compound	91665055	02/18/92	WAD058367152
213		D001		2	DM	332	P		332					Corrosion preventative compound	91663573	04/17/92	WAD058367152
213		D001		2	DM	825	P		825					Corrosion preventative compound	91664925	02/19/92	WAD058367152
213		D001		1	DM	40	P		40					Mineral spirits (PD-680)	91663380	03/26/92	WAD058367152
213		D001		1	DM	58	P		58					Mineral spirits (PD-680)	91661010	09/01/92	WAD058367152
213		D001		1	DM	76	P		76					Mineral spirits (PD-680)	91661155	09/09/92	WAD058367152
213		D001		1	DM	76	P		76					Mineral spirits (PD-680)	92786108	12/02/92	WAD058367152
213		D001		1	DM	80	P		80					Mineral spirits (PD-680)	91664427	07/27/92	WAD058367152
213		D001		1	DM	134	P		134					Mineral spirits (PD-680)	91664684	06/04/92	WAD058367152
213		D001		2	DM	238	P		238					Mineral spirits (PD-680)	91663521	04/09/92	WAD058367152
213		D001		1	DM	250	P		250					Mineral spirits (PD-680)	91663571	04/17/92	WAD058367152
213		D001		1	DM	252	P		252					Mineral spirits (PD-680)	92786224	12/14/92	WAD058367152
213		D001		1	DM	296	P		296					Mineral spirits (PD-680)	91665055	02/18/92	WAD058367152
213		D001		1	DM	304	P		304					Mineral spirits (PD-680)	91504763	06/08/92	WAD058367152
213		D001	D039 D018	5	DM	430	P		430					Mineral spirits (PD-680)	92391612	11/23/92	CAT000613976
213		D001		2	DM	438	P		438					Mineral spirits (PD-680)	91661259	09/23/92	WAD058367152
213		D001		1	DM	474	P		474					Mineral spirits (PD-680)	91664641	07/14/92	WAD058367152
213		D001		2	DM	514	P		514					Mineral spirits (PD-680)	91663310	03/13/92	WAD058367152
213		D001		2	DM	754	P		754					Mineral spirits (PD-680)	91663459	03/31/92	WAD058367152
213		D001		2	DM	772	P		772					Mineral spirits (PD-680)	91505130	07/28/92	WAD058367152
213		D001	D039 D018	15	DM	1126	P		1126					Mineral spirits (PD-680)	92451601	12/16/92	CAT000613976
213		D001	D039 D018	15	DM	1208	P		1208					Mineral spirits (PD-680)	92139176	08/18/92	CAT000613976
213		D001		4	DM	1221	P		1221					Mineral spirits (PD-680)	92786074	11/19/92	WAD058367152
213		D001	D039 D018	19	DM	1470	P		1470					Mineral spirits (PD-680)	92450971	12/16/92	CAT000613976
213		D001	F003	1	DM	55	G	0.80	367					Mixed solvents - polyurethane paint, toluene, xylene, adhesives, resins,	91788245	03/30/92	CAD089446710
213		D001		1	DM	204	P		204					Naphtha, mineral spirits	91664684	06/04/92	WAD058367152
213		D001		1	DM	284	P		284					Naphtha, mineral spirits	91661259	09/23/92	WAD058367152
213		D001		1	DM	101	P		101					Plastic polish	91665055	02/18/92	WAD058367152
213		D001		1	DM	132	P		132					Plastic polish	91505130	07/28/92	WAD058367152
213		D001		2	DM	502	P		502					Plastic polish	91664589	05/14/92	WAD058367152
213		D001		1	DM	284	P		284	14717	0.367%			Walkway compound w/ mineral spirits	91663521	04/09/92	WAD058367152
214		F002		1	DM	180	P		180					1,1,1-TCA contaminated w/ petroleum distillates	91663258	03/11/92	WAD058367152
214		D001		2	DM	98	P		98					Aerosol lubricants	91663521	04/09/92	WAD058367152
214		D001	D007 D035	1	DM	38	P		38					Aerosol paint cans w/ zinc chromate, mineral spirits	91661010	09/01/92	WAD058367152
214		D001	D007 D035	1	DM	52	P		52					Aerosol paint cans w/ zinc chromate, mineral spirits	91661155	09/09/92	WAD058367152
214		D001	D007 D035	1	DM	70	P		70					Aerosol paint cans w/ zinc chromate, mineral spirits	91663573	04/17/92	WAD058367152
214		D001	D007 D035	1	DM	90	P		90					Aerosol paint cans w/ zinc chromate, mineral spirits	91663347	03/20/92	WAD058367152
214		D001	D007 D035	1	DM	92	P		92					Aerosol paint cans w/ zinc chromate, mineral spirits	91665055	02/18/92	WAD058367152
214		D001	D007 D035	3	DM	108	P		108					Aerosol paint cans w/ zinc chromate, mineral spirits	91660969	08/21/92	WAD058367152
214		D001	D007 D035	1	DM	123	P		123					Aerosol paint cans w/ zinc chromate, mineral spirits	91661259	09/23/92	WAD058367152
214		D001	D007 D035	1	DM	138	P		138					Aerosol paint cans w/ zinc chromate, mineral spirits	91663571	04/17/92	WAD058367152
214		D001	D007 D035	1	DM	158	P		158					Aerosol paint cans w/ zinc chromate, mineral spirits	91663347	03/20/92	WAD058367152
214		D001	D007 D035	2	DM	174	P		174					Aerosol paint cans w/ zinc chromate, mineral spirits	91663317	03/26/92	WAD058367152
214		D001	D007 D035	2	DM	178	P		178					Aerosol paint cans w/ zinc chromate, mineral spirits	91504763	06/08/92	WAD058367152
214		D001	D007 D035	2	DM	182	P		182					Aerosol paint cans w/ zinc chromate, mineral spirits	91504774	06/17/92	WAD058367152
214		D001	D007 D035	1	DM	194	P		194					Aerosol paint cans w/ zinc chromate, mineral spirits	91664589	05/14/92	WAD058367152
214		D001	D007 D035	2	DM	202	P		202					Aerosol paint cans w/ zinc chromate, mineral spirits	91664641	07/14/92	WAD058367152
214		D001	D007 D035	2	DM	202	P		202					Aerosol paint cans w/ zinc chromate, mineral spirits	91663347	03/20/92	WAD058367152

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214		D001	D007 D035	2	DM	210	P		210					Aerosol paint cans w/ zinc chromate, mineral spirits	91663310	03/13/92	WAD058367152
214		D001	D007 D035	2	DM	270	P		270					Aerosol paint cans w/ zinc chromate, mineral spirits	91661010	09/01/92	WAD058367152
214		D001	D007 D035	2	DM	276	P		276					Aerosol paint cans w/ zinc chromate, mineral spirits	91664684	06/04/92	WAD058367152
214		D001	D007 D035	3	DM	334	P		334					Aerosol paint cans w/ zinc chromate, mineral spirits	91663317	03/26/92	WAD058367152
214		D001	D007 D035	6	DM	376	P		376					Aerosol paint cans w/ zinc chromate, mineral spirits	91664684	06/04/92	WAD058367152
214		D001	D007 D035	8	DM	1102	P		1102					Aerosol paint cans w/ zinc chromate, mineral spirits	91663521	04/09/92	WAD058367152
214		D001	D035	1	DM	48	P		48					Aerosol stencil marking w/ methylene chloride	91661010	09/01/92	WAD058367152
214		D002		1	DM	33	P		33					Aircraft cleaning compound	91661312	09/30/92	WAD058367152
214		D002		1	DM	45	P		45					Aircraft cleaning compound	91664589	05/14/92	WAD058367152
214		D002		1	DM	87	P		87					Aircraft cleaning compound	91663571	04/17/92	WAD058367152
214		D006	D018 D039 D040 D021	3	DM	108	P		108					Aircraft cleaning compound	92451601	12/16/92	CAT000613976
214		D002		1	DM	160	P		160					Aircraft cleaning compound	91663310	03/13/92	WAD058367152
214		D002		1	DM	216	P		216					Aircraft cleaning compound	91665055	02/18/92	WAD058367152
214		D002		1	DM	334	P		334					Aircraft cleaning compound	91664589	05/14/92	WAD058367152
214		D002		1	DM	374	P		374					Aircraft cleaning compound	91661259	09/23/92	WAD058367152
214		D002		2	DM	430	P		430					Aircraft cleaning compound	91664589	05/14/92	WAD058367152
214		D002		1	DM	436	P		436					Aircraft cleaning compound	91663310	03/13/92	WAD058367152
214		D002		2	DF	70	G	0.80	467					Aircraft cleaning compound	90988708	06/11/92	CAT080010101
214		D002		1	DM	618	P		618					Aircraft cleaning compound	91663521	04/09/92	WAD058367152
214		D002		2	DM	684	P		684					Aircraft cleaning compound	91661255	09/23/92	WAD058367152
214		D002		3	DM	778	P		778					Aircraft cleaning compound	91504774	06/17/92	WAD058367152
214		D002		2	DM	1182	P		1182					Aircraft cleaning compound	91663571	04/17/92	WAD058367152
214		D002		3	DM	1274	P		1274					Aircraft cleaning compound	91661461	10/07/92	WAD058367152
214		D002		19	DM	5712	P		5712					Aircraft cleaning compound	91663459	03/31/92	WAD058367152
214		D002		1	DM	404	P		404					Aircraft cleaning compound	91661259	09/23/92	WAD058367152
214		D001	F003 F005 D035	1	DM	78	P		78					Aircraft paint thinner	91661255	09/23/92	WAD058367152
214		D001	F003 F005 D035	1	DM	80	P		80					Aircraft paint thinner	91665055	02/18/92	WAD058367152
214		D001	F003 F005 D035	1	DM	82	P		82					Aircraft paint thinner	91663317	03/26/92	WAD058367152
214		D001	D035 F003 F005	4	DM	1808	P		1808					Aircraft paint thinner	91663571	04/17/92	WAD058367152
214		D001	D007	1	DM	98	P		98					Airfield/traffic paint	91504774	06/17/92	WAD058367152
214		D001	D035	1	DM	506	P		506					Aliphatic isocyanate resin-ethyl acetate, MEK	91663521	04/09/92	WAD058367152
214		D026	F004	1	DM	230	P		230					Cleaner/degreaser w/ cresols, kerosene	91663380	03/26/92	WAD058367152
214		D026	F004	1	DM	364	P		364					Cleaner/degreaser w/ cresols, kerosene	91661312	09/30/92	WAD058367152
214		D026	F004	1	DM	390	P		390					Cleaner/degreaser w/ cresols, kerosene	91505130	07/28/92	WAD058367152
214		D026	F004	2	DM	953	P		953					Cleaner/degreaser w/ cresols, kerosene	91661259	09/23/92	WAD058367152
214		D023	F003 F004	1	DM	83	P		83					Cleaning compound w/ acetone, orthocresol	91663347	03/20/92	WAD058367152
214		D023	F003 F004	1	DM	540	P		540					Cleaning compound w/ acetone, orthocresol	91661010	09/01/92	WAD058367152
214		D023	F003 F004	2	DM	640	P		640					Cleaning compound w/ acetone, orthocresol	91661243	09/25/92	WAD058367152
214		D023	F003 F004	2	DM	719	P		719					Cleaning compound w/ acetone, orthocresol	91663521	04/09/92	WAD058367152
214		D023	F003 F004	3	DM	1274	P		1274					Cleaning compound w/ acetone, orthocresol	91663571	04/17/92	WAD058367152
214		D001	F003	1	DM	86	P		86					Degreaser with ethanol and xylene	91661259	09/23/92	WAD058367152
214		F002		1	DM	170	P		170					Hydraulic fluid w/ freon	91661255	09/23/92	WAD058367152
214		F002		2	DM	239	P		239					Hydraulic fluid w/ freon	92786074	11/19/92	WAD058367152
214		F002		1	DM	242	P		242					Hydraulic fluid w/ freon	91505130	07/28/92	WAD058367152
214		F002		1	DM	248	P		248					Hydraulic fluid w/ freon	91664427	07/27/92	WAD058367152
214		F002		1	DM	308	P		308					Hydraulic fluid w/ freon	91661312	09/30/92	WAD058367152
214		F002		2	DM	398	P		398					Hydraulic fluid w/ freon	91660969	08/21/92	WAD058367152
214		F002		2	DM	670	P		670					Hydraulic fluid w/ freon	92786074	11/19/92	WAD058367152
214		F002		2	DM	794	P		794					Hydraulic fluid w/ freon	91504763	06/08/92	WAD058367152
214		F002		4	DM	840	P		840					Hydraulic fluid w/ freon	91663113	11/06/92	WAD058367152
214		F002		3	DM	1112	P		1112					Hydraulic fluid w/ freon	91661461	10/07/92	WAD058367152

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214		F002		3	DM	1248	P		1248					Hydraulic fluid w/ freon	91663317	03/26/92	WAD058367152
214		F002		4	DM	1667	P		1667					Hydraulic fluid w/ freon	91663258	03/11/92	WAD058367152
214		F002		7	DM	2840	P		2840					Hydraulic fluid w/ freon	91663521	04/09/92	WAD058367152
214		D001		1	DM	100	P		100					Inspection penetrant w/ isopropanol	91505130	07/28/92	WAD058367152
214		D001		1	DM	192	P		192					Inspection penetrant w/ isopropanol	91661243	09/25/92	WAD058367152
214		D001		1	DM	445	P		445					Inspection penetrant w/ isopropanol	92786074	11/19/92	WAD058367152
214		D001		2	DM	776	P		776					Inspection penetrant w/ mineral spirits	91663571	04/17/92	WAD058367152
214		NR		1	DM	241	P		241					Nonflammable aerosol labpack	92786108	12/02/92	WAD058367152
214		NR		1	DM	230	P		230					Nonflammable labpack (barium)	92786074	11/19/92	WAD058367152
214		D001	F003 F005 D035	1	DM	328	P		328					Paint stripper	91661461	10/07/92	WAD058367152
214		D002	D007 D039	1	DM	702	P		702					Paint stripper with methylene chloride, sodium chromate	91665087	02/25/92	WAD058367152
214		D001	D006 D007 D008 D035	1	DM	82	P		82					Paint thinner	91664427	07/27/92	WAD058367152
214		D001	D006 D007 D008 D035	1	DM	292	P		292					Paint thinner	91663310	03/13/92	WAD058367152
214		D001	F003 F005	1	DM	58	P		58					Paint thinner, toluene, xylene, acetone, mineral spirits	91663347	03/20/92	WAD058367152
214		D001	F003 F005	1	DM	78	P		78					Paint thinner, toluene, xylene, acetone, mineral spirits	91504763	06/08/92	WAD058367152
214		D001	F003 F005	1	DM	144	P		144					Paint thinner, toluene, xylene, acetone, mineral spirits	91663113	11/06/92	WAD058367152
214		D001	F003 F005	1	DM	206	P		206					Paint thinner, toluene, xylene, acetone, mineral spirits	91664427	07/27/92	WAD058367152
214		D001	F003 F005	1	DM	390	P		390					Paint thinner, toluene, xylene, acetone, mineral spirits	91663310	03/13/92	WAD058367152
214		D001	F003 F005	2	DM	573	P		573					Paint thinner, toluene, xylene, acetone, mineral spirits	91663380	03/26/92	WAD058367152
214		D001	F005 D035	1	DM	63	P		63					Paint with toluene, MEK	91661243	09/25/92	WAD058367152
214		D001	F002 F005 D007 D035	1	DM	466	P		466					Paint/stripper/water, methylene chloride, chromium, MEK	91661259	09/23/92	WAD058367152
214		D001	D035 F001 F005	4	DM	200	G	0.80	1334					Toluene, xylene,MEK, acetone	91788218	01/31/92	CAT080010101
214		NR		4	DM	4704	P		4704					Turpentine	91663571	04/17/92	WAD058367152
214	291 331	D007		6	DM	300	G	0.80	2002					Waste enamel/epoxy/acrylic paint, thinner, toluene, xylene	91788217	01/31/92	CAT080010101
214	291 331	D001		1	DM	10	G	0.80	67					Waste paint (consolidated paint sludges)	92471020	10/09/92	CAT080010101
214	291 343	D001		3	DM	165	G	0.80	1101					Waste paint, thinners, sludge	90988705	06/11/92	CAT080010101
214	223	D001	D035 F003 F005	1	TT	823	G	0.80	5491	57009	1.422%			Waste solvents (toluene, xylene) and petroleum distillates	89588717	09/01/92	CAD089446710
221		NR		2	DM	414	P		414				X	Aircraft grease	91661461	10/07/92	WAD058367152
221		NR		1	DF	55	G	0.80	367				X	Engine oil, lube oil, hydraulic fluid	90988708	06/11/92	CAT080010101
221		NR		1	TT	24970	P		24970				X	Engine oil, lube oil, hydraulic fluid	90420187	12/16/92	CAT080011059
221		NR		2	DM	426	P		426				X	Hydraulic fluid	92786074	11/19/92	WAD058367152
221		NR		1	DM	530	P		530				X	Hydraulic fluid	91661312	09/30/92	WAD058367152
221		NR		1	DM	636	P		636				X	Hydraulic fluid	92786187	12/02/92	WAD058367152
221		NR		5	DM	2310	P		2310				X	Hydraulic fluid	91661255	09/23/92	WAD058367152
221		NR		1	DM	218	P		218				X	Hydraulic fluid contaminated with water	91661259	09/23/92	WAD058367152
221		NR		5	DM	1936	P		1936				X	Hydraulic fluid contaminated with water	91661243	09/25/92	WAD058367152
221		NR		1	DM	634	P		634				X	Lube oil	91663347	03/20/92	WAD058367152
221		NR		2	DM	271	P		271				X	Lube oil (aircraft engines)	92786074	11/19/92	WAD058367152
221		NR		1	DM	134	P		134				X	Lubricating oil	91665055	02/18/92	WAD058367152
221		NR		1	DM	247	P		247				X	Oil and grease	91665055	02/18/92	WAD058367152
221		NR		1	DM	85	P		85				X	Oil and grease liquid labpack	92786108	12/02/92	WAD058367152
221		D001	F002 D028	1	TP	34060	P		34060				X	Oil contaminated w/ gasoline	91664524	05/12/92	WAD058367152
221		D001	F002 D028	1	TP	38300	P		38300				X	Oil contaminated w/ gasoline	91664522	05/11/92	WAD058367152
221		D001	F002 D028	1	TP	39690	P		39690				X	Oil contaminated w/ gasoline	91664521	05/11/92	WAD058367152
221		D001	F002 D028	1	TP	40610	P		40610				X	Oil contaminated w/ gasoline	91664523	05/11/92	WAD058367152
221		D001	F002 D028	1	TP	42060	P		42060				X	Oil contaminated w/ gasoline	91664525	05/12/92	WAD058367152
221		D001		1	DM	233	P		233				X	Oil contaminated w/ JP-5	91505130	07/28/92	WAD058367152
221		D001		4	DM	321	P		321				X	Oil contaminated w/ JP-5	91661155	09/09/92	WAD058367152
221		D001		1	DM	487	P		487				X	Oil contaminated w/ JP-5	91661259	09/23/92	WAD058367152
221		D001		2	DM	858	P		858				X	Oil contaminated w/ JP-5	91661461	10/07/92	WAD058367152

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221		NR		2	DM	415	P		415				X	Oil contaminated w/ water	91663347	03/20/92	WAD058367152
221		NR		2	DM	429	P		429				X	Oil contaminated w/ water	91661010	09/01/92	WAD058367152
221		NR		1	DM	592	P		592				X	Oil contaminated w/ water	91663521	04/09/92	WAD058367152
221		NR		2	DM	822	P		822				X	Oil contaminated w/ water	91661243	09/25/92	WAD058367152
221		NR		13	DM	2256	P		2256				X	Oil contaminated w/ water	91661155	09/09/92	WAD058367152
221		NR		7	DM	2369	P		2369				X	Oil contaminated w/ water	91661312	09/30/92	WAD058367152
221		NR		10	DM	3281	P		3281				X	Oil contaminated w/ water	92786224	12/14/92	WAD058367152
221		NR		1	DM	75	P		75				X	Petroleum oil	91663317	03/26/92	WAD058367152
221		NR		2	DM	277	P		277				X	Petroleum oil	91663113	11/06/92	WAD058367152
221		NR		3	DM	1408	P		1408				X	Petroleum oil	91661312	09/30/92	WAD058367152
221		NR		1	DM	62	P		62				X	Petroleum oil and antifreeze	91664641	07/14/92	WAD058367152
221		NR		1	DM	374	P		374				X	Synthetic oil contaminated with aviation fuel	91661461	10/07/92	WAD058367152
221		NR		2	DM	848	P		848				X	Synthetic oil contaminated with aviation fuel	92786074	11/19/92	WAD058367152
221		NR		8	DM	3824	P		3824				X	Synthetic oil contaminated with aviation fuel	91664641	07/14/92	WAD058367152
221		D001	F003 F005	1	DM	114	P		114				X	Waste aviation fuel	91662830	10/14/92	WAD058367152
221		D001		1	TT	6949	G	0.80	46364				X	Waste aviation fuel	90420152	02/20/92	CAD980737076
221		D001		1	TT	7181	G	0.80	47912				X	Waste aviation fuel	90420159	02/21/92	CAD980737076
221		D001		1	DM	145	P		145				X	Waste diesel fuel	91661155	09/09/92	WAD058367152
221		D001		2	DM	332	P		332				X	Waste diesel fuel	92786108	12/02/92	WAD058367152
221		D001		1	DM	388	P		388				X	Waste diesel fuel	91663258	03/11/92	WAD058367152
221		D001		2	DM	480	P		480				X	Waste diesel fuel	91661461	10/07/92	WAD058367152
221		D001		3	DM	404	P		404				X	Waste fuel (JP-5)	91661461	10/07/92	WAD058367152
221		D001		1	TT	6467	G	0.80	43148				X	Waste fuel (JP-5)	90420181	09/18/92	CAD980737076
221		D001		1	TT	6612	G	0.80	44115				X	Waste fuel (JP-5)	90420182	09/30/92	CAD980737076
221		D001		1	TT	6744	G	0.80	44996				X	Waste fuel (JP-5)	90420170	04/17/92	CAD980737076
221		D001		1	TT	7218	G	0.80	48158				X	Waste fuel (JP-5)	90420151	01/02/91	CAD980737076
221		NR		1	TT	270	G	0.80	1801	525186	13.103%		X	Waste motor oil, lube, grease, hyd fluid	91788219	01/31/92	CAT040370645
222		NR		1	DM	107	P		107					Gasoline and water w/ benzene	92786074	11/19/92	WAD058367152
222		D001		2	DM	227	P		227					JP-5 and water, aviation fuel	91663347	03/20/92	WAD058367152
222		D001		1	DM	120	P		120					JP-5 contaminated w/ water, aviation fuel, naphtha	91663347	03/20/92	WAD058367152
222		D001		1	DM	416	P		416					JP-5 contaminated w/ water, aviation fuel, naphtha	91505130	07/28/92	WAD058367152
222		D001		4	DM	865	P		865					JP-5 contaminated with water	91661155	09/09/92	WAD058367152
222		NR		1	DM	148	P		148					Oil sludge with debris	91663459	03/31/92	WAD058367152
222		NR		1	TT	2591	G	1.00	21609					Water (99%) with petroleum products (1%)	92018434	06/24/92	CAT080013352
222		NR		1	TT	4900	G	1.00	40866					Water (99%) with petroleum products (1%)	92018435	06/23/92	CAT080013352
222		NR		2	DM	378	P		378					Water contaminated w/ aviation fuel, oil	91661312	09/30/92	WAD058367152
222		NR		2	DM	902	P		902					Water contaminated w/ aviation fuel, oil	91663571	04/17/92	WAD058367152
222		NR		10	DM	4808	P		4808					Water contaminated w/ aviation fuel, oil	91661255	09/23/92	WAD058367152
222		F001	D039 D040	2	DM	538	P		538					Water contaminated w/ oil	91505131	11/06/92	WAD058367152
222		F001	D039 D040	1	TT	13360	P		13360					Water contaminated w/ oil	91630897	08/27/92	WAD058367152
222		F001	D039 D040	1	TP	36770	P		36770					Water contaminated w/ oil	91662918	10/23/92	WAD058367152
222		F001	D039 D040	1	TT	38930	P		38930					Water contaminated w/ oil	91662911	11/04/92	WAD058367152
222		F001	D039 D040	1	TT	41000	P		41000					Water contaminated w/ oil	91662910	11/04/92	WAD058367152
222		F001	D039 D040	1	TT	45650	P		45650					Water contaminated w/ oil	91505488	08/14/92	WAD058367152
222		F001	D039 D040	1	TT	115400	P		115400					Water contaminated w/ oil	91662920	11/04/92	WAD058367152
222		F001	D039 D040	1	TC	131110	P		131110					Water contaminated w/ oil	91662919	11/04/92	WAD058367152
222		F001	D039 D040	1	TC	136600	P		136600	629804	15.713%			Water contaminated w/ oil	91660807		WAD058367152
223		NR		1	DM	522	P		522					Absorbent with inspection penetrant	92786074	11/19/92	WAD058367152
223		NR		1	DM	75	P		75					Diesel spill cleanup	91505522	06/08/92	WAD058367152

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223		NR		1	DM	700	P		700					Diesel spill cleanup	91663240	03/11/92	WAD058367152
223		NR		5	DM	4010	P		4010					Diesel spill cleanup	91663159	03/31/92	WAD058367152
223		D001		1	DM	266	P		266					Diesel, tar and water	92786074	11/19/92	WAD058367152
223		D001		3	DM	621	P		621					Diesel, tar and water	91661243	09/25/92	WAD058367152
223		NR		1	DM	30	P		30				X	Grease	91664925	02/19/92	WAD058367152
223		NR		1	DM	31	P		31				X	Grease	92786108	12/02/92	WAD058367152
223		NR		1	DM	32	P		32				X	Grease	91664684	06/04/92	WAD058367152
223		NR		1	DM	60	P		60				X	Grease	91665055	02/18/92	WAD058367152
223		NR		1	DM	77	P		77				X	Grease	91661155	09/09/92	WAD058367152
223		NR		1	DM	112	P		112				X	Grease	92786074	11/19/92	WAD058367152
223		NR		1	DM	158	P		158				X	Grease	91663573	04/17/92	WAD058367152
223		NR		1	DM	188	P		188				X	Grease	91663521	04/09/92	WAD058367152
223		NR		1	DM	260	P		260				X	Grease	91663258	03/11/92	WAD058367152
223		NR		2	DM	308	P		308				X	Grease	91661259	09/23/92	WAD058367152
223		NR		1	DM	376	P		376				X	Grease	91664427	07/27/92	WAD058367152
223		NR		2	DM	406	P		406				X	Grease	91664589	05/14/92	WAD058367152
223		NR		1	DM	235	P		235				X	Oil	92786187	12/02/92	WAD058367152
223		NR		1	DM	361	P		361				X	Oil	92786108	12/02/92	WAD058367152
223		NR		2	DM	548	P		548				X	Oil	91661255	09/23/92	WAD058367152
223		NR		5	DM	1455	P		1455				X	Oil	91661243	09/25/92	WAD058367152
223		NR		5	DM	1764	P		1764				X	Oil	91661461	10/07/92	WAD058367152
223		NR		14	DM	3557	P		3557				X	Oil	91661259	09/23/92	WAD058367152
223		NR		13	DM	4294	P		4294				X	Oil	92786074	11/19/92	WAD058367152
223		NR		1	DM	155	P		155				X	Oil	91664641	07/14/92	WAD058367152
223		D018		1	DM	488	P		488				X	Oil and fuel	91661461	10/07/92	WAD058367152
223		D018		1	TT	4928	G	0.80	32880				X	Oil and fuel	90762383	04/22/92	CAD981458466
223		D018		1	TT	5367	G	0.80	35809				X	Oil and fuel	90762382	04/22/92	CAD981458466
223		D018		1	TT	5519	G	0.80	36823				X	Oil and fuel	90762384	04/22/92	CAD981458466
223		D018		1	TT	5886	G	0.80	39271				X	Oil and fuel	90762385	04/22/92	CAD981458466
223		NR		1	DM	116	P		116					Oil and fuel filters	91661461	10/07/92	WAD058367152
223		NR		2	DM	196	P		196					Oil and fuel filters	92786108	12/02/92	WAD058367152
223		NR		1	DM	206	P		206					Oil and fuel filters	91664641	07/14/92	WAD058367152
223		NR		2	DM	301	P		301					Oil and fuel filters	91663113	11/06/92	WAD058367152
223		NR		2	DM	334	P		334					Oil and fuel filters	91661255	09/23/92	WAD058367152
223		NR		3	DM	370	P		370					Oil and fuel filters	91661243	09/25/92	WAD058367152
223		NR		3	DM	555	P		555					Oil and fuel filters	91663317	03/26/92	WAD058367152
223		NR		3	DM	567	P		567					Oil and fuel filters	91661010	09/01/92	WAD058367152
223		NR		2	DM	610	P		610					Oil and fuel filters	92786573	12/29/92	IDD073114654
223		NR		4	DM	652	P		652					Oil and fuel filters	91663573	04/17/92	WAD058367152
223		NR		4	DM	686	P		686					Oil and fuel filters	92786074	11/19/92	WAD058367152
223		NR		4	DM	696	P		696					Oil and fuel filters	91663521	04/09/92	WAD058367152
223		NR		4	DM	818	P		818					Oil and fuel filters	91663113	11/06/92	WAD058367152
223		NR		6	DM	860	P		860					Oil and fuel filters	91664589	05/14/92	WAD058367152
223		NR		2	DM	913	P		913					Oil and fuel filters	91664427	07/27/92	WAD058367152
223		NR		2	DM	1041	P		1041					Oil and fuel filters	91663347	03/20/92	WAD058367152
223		NR		8	DM	1141	P		1141					Oil and fuel filters	91505130	07/28/92	WAD058367152
223		NR		5	DM	1174	P		1174					Oil and fuel filters	92786224	12/14/92	WAD058367152
223		NR		4	DM	1252	P		1252					Oil and fuel filters	91504763	06/08/92	WAD058367152
223		NR		6	DM	1966	P		1966					Oil and fuel filters	91664684	06/04/92	WAD058367152
223		NR		8	DM	2422	P		2422					Oil and fuel filters	91663258	03/11/92	WAD058367152
223		NR		14	DM	3045	P		3045					Oil and fuel filters	91661259	09/23/92	WAD058367152

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State WC	State Other	EPA WC	EPA other	Container No.	Container Type	Total Qty.	Unit	SG or conv. factor	Weight (P)	Total by State WC	% of Total	Code		Station Personnel Waste Description	Manifest Number	Date Gener. Release	Designated Facility EPA ID No.
223		D007		1	TT	15770	P		15770					Oil and water with chromium	91505430	12/30/92	CAD981458466
223		D007		1	TT	32005	P		32005					Oil and water with chromium	92786610	12/30/92	CAD981458466
223		D007		1	TT	32350	P		32350					Oil and water with chromium	92786603	12/29/92	CAD981458466
223		D007		1	TT	32690	P		32690					Oil and water with chromium	92786608	12/29/92	CAD981458466
223		D007		1	TT	33590	P		33590					Oil and water with chromium	92786594	12/29/92	CAD981458466
223		D007		1	TT	34040	P		34040					Oil and water with chromium	92786604	12/29/92	CAD981458466
223		D007		1	TT	34270	P		34270					Oil and water with chromium	92786599	12/29/92	CAD981458466
223		D007		1	TT	35580	P		35580					Oil and water with chromium	92786607	12/29/92	CAD981458466
223		D007		1	TT	35660	P		35660					Oil and water with chromium	92786605	12/29/92	CAD981458466
223		D007		1	TT	36100	P		36100					Oil and water with chromium	92786606	12/29/92	CAD981458466
223		D007		1	TT	36250	P		36250					Oil and water with chromium	92786612	12/30/92	CAD981458466
223		NR		1	DM	147	P		147					Oil in floor sweep, absorbent	91661155	09/09/92	WAD058367152
223		NR		1	DM	392	P		392					Oil in floor sweep, absorbent	91664925	02/19/92	WAD058367152
223		NR		2	DM	584	P		584					Oil in floor sweep, absorbent	91661461	10/07/92	WAD058367152
223		NR		3	DM	1422	P		1422					Oil in floor sweep, absorbent	92786402	12/14/92	IDD073114654
223		NR		4	DM	1775	P		1775					Oil in floor sweep, absorbent	92786573	12/29/92	IDD073114654
223		NR		6	DM	2126	P		2126					Oil in floor sweep, absorbent	91661255	09/23/92	WAD058367152
223		NR		8	DM	2206	P		2206					Oil in floor sweep, absorbent	92786108	12/02/92	WAD058367152
223		NR		8	DM	2514	P		2514					Oil in floor sweep, absorbent	91661010	09/01/92	WAD058367152
223		NR		7	DM	2817	P		2817					Oil in floor sweep, absorbent	91661243	09/25/92	WAD058367152
223		NR		8	DM	3618	P		3618					Oil in floor sweep, absorbent	91664427	07/27/92	WAD058367152
223		NR		12	DM	4642	P		4642					Oil in floor sweep, absorbent	91664589	05/14/92	WAD058367152
223		NR		15	DM	5216	P		5216					Oil in floor sweep, absorbent	91661259	09/23/92	WAD058367152
223		NR		22	DM	8757	P		8757					Oil in floor sweep, absorbent	91663571	04/17/92	WAD058367152
223		D039	D040 F001	1	TP	28130	P		28130					Oil w/ TCA and TCE	91662961	10/23/92	WAD058367152
223		D039	D040 F001	1	TP	28470	P		28470					Oil w/ TCA and TCE	91662960	10/23/92	WAD058367152
223		D039	D040 F001	1	TT	109480	P		109480					Oil w/ TCA and TCE	91662971	11/04/92	WAD058367152
223		D039	D040 F001	1	TC	145980	P		145980					Oil w/ TCA and TCE	91662959	10/22/92	WAD058367152
223		F001	D039 D040	1	TT	30220	P		30220					Oil/water w/ TCA and TCE	91663291	10/21/92	WAD058367152
223		F001	D039 D040	1	TP	32500	P		32500					Oil/water w/ TCA and TCE	91662908	10/23/92	WAD058367152
223		F001	D039 D040	1	TC	158970	P		158970					Oil/water w/ TCA and TCE	91662901	10/22/92	WAD058367152
223		F001	D039 D040	1	TC	165500	P		165500					Oil/water w/ TCA and TCE	91662967	10/22/92	WAD058367152
223	512	NR		2	CF	2750	P		2750				X	Oily soil and absorbent, empty containers	91788386	06/11/92	CAT000646117
223		D001	F003 F005		DM	400	P		400					Petroleum oil w/ solvents	91664684	06/04/92	WAD058367152
223		F002	D018	1	TT	41950	P		41950					Petroleum products w/ benzene	91662858	10/16/92	WAD058367152
223		F002	D018	1	TT	43130	P		43130					Petroleum products w/ benzene	91662851	10/15/92	WAD058367152
223		F002	D018	1	TT	43470	P		43470					Petroleum products w/ benzene	91662856	10/15/92	WAD058367152
223		F002	D018	1	TT	46430	P		46430					Petroleum products w/ benzene	91662853	10/15/92	WAD058367152
223		NR		1	DM	122	P		122					Rags w/ ethylene glycol	91665087	02/25/92	WAD058367152
223		NR		18	DM	8602	P		8602					Rags w/ oil	91665087	02/25/92	WAD058367152
223		NR		1	DM	90	P		90					Rags/absorbent w/ oil	91661461	10/07/92	WAD058367152
223		NR		1	DF	140	P		140					Rags/absorbent w/ oil	91664641	07/14/92	WAD058367152
223		NR		1	DF	180	P		180					Rags/absorbent w/ oil	91664684	06/04/92	WAD058367152
223		NR		1	DM	207	P		207					Rags/absorbent w/ oil	91664925	02/19/92	WAD058367152
223		NR		1	DM	230	P		230					Rags/absorbent w/ oil	91663258	03/11/92	WAD058367152
223		NR		2	DM	366	P		366					Rags/absorbent w/ oil	91664684	06/04/92	WAD058367152
223		NR		3	DM	368	P		368					Rags/absorbent w/ oil	91664427	07/27/92	WAD058367152
223		NR		4	DM	555	P		555					Rags/absorbent w/ oil	91661259	09/23/92	WAD058367152
223		NR		4	DM	790	P		790					Rags/absorbent w/ oil	91505130	07/28/92	WAD058367152
223		NR		5	DM	849	P		849					Rags/absorbent w/ oil	91661155	09/09/92	WAD058367152
223		NR		6	DM	919	P		919					Rags/absorbent w/ oil	91664641	07/14/92	WAD058367152

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223		NR		5	DM	927	P		927					Rags/absorbent w/ oil	92786573	12/29/92	IDD073114654
223		NR		4	DM	971	P		971					Rags/absorbent w/ oil	91661243	09/25/92	WAD058367152
223		NR		8	DM	1105	P		1105					Rags/absorbent w/ oil	91661255	09/23/92	WAD058367152
223		NR		9	DM	1524	P		1524					Rags/absorbent w/ oil	92786402	12/14/92	IDD073114654
223		NR		10	DM	1735	P		1735					Rags/absorbent w/ oil	91660969	08/21/92	WAD058367152
223		NR		9	DM	1758	P		1758					Rags/absorbent w/ oil	91663113	11/06/92	WAD058367152
223		NR		11	DM	1819	P		1819					Rags/absorbent w/ oil	91661461	10/07/92	WAD058367152
223		NR		19	DM	2953	P		2953					Rags/absorbent w/ oil	92786108	12/02/92	WAD058367152
223		NR		18	DM	3086	P		3086					Rags/absorbent w/ oil	91661259	09/23/92	WAD058367152
223		NR		21	DM	3371	P		3371					Rags/absorbent w/ oil	91661010	09/01/92	WAD058367152
223		NR		12	DM	3452	P		3452					Rags/absorbent w/ oil	92786187	12/02/92	WAD058367152
223		NR		1	DM	100	P		100					Rags/absorbent w/ petroleum products	91664641	07/14/92	WAD058367152
223		NR		1	DM	108	P		108					Rags/absorbent w/ petroleum products	91660969	08/21/92	WAD058367152
223		NR		1	DM	150	P		150					Rags/absorbent w/ petroleum products	91663258	03/11/92	WAD058367152
223		NR		2	DM	266	P		266					Rags/absorbent w/ petroleum products	91614833	07/14/92	WAD058367152
223		NR		2	DM	528	P		528					Rags/absorbent w/ petroleum products	91663380	03/26/92	WAD058367152
223		NR		7	DM	1246	P		1246					Rags/absorbent w/ petroleum products	92786074	11/19/92	WAD058367152
223		NR		8	DM	1344	P		1344					Rags/absorbent w/ petroleum products	91664427	07/27/92	WAD058367152
223		NR		9	DM	1736	P		1736					Rags/absorbent w/ petroleum products	91664684	06/04/92	WAD058367152
223		NR		10	DM	1757	P		1757					Rags/absorbent w/ petroleum products	91663310	03/13/92	WAD058367152
223		NR		15	DM	2318	P		2318					Rags/absorbent w/ petroleum products	91504773	06/10/92	WAD058367152
223		NR		11	DM	4194	P		4194					Rags/absorbent w/ petroleum products	91663459	03/31/92	WAD058367152
223		NR		17	DM	5836	P		5836					Rags/absorbent w/ petroleum products	91663521	04/09/92	WAD058367152
223		NR		26	DM	6353	P		6353					Rags/absorbent w/ petroleum products	91663521	04/09/92	WAD058367152
223		NR		12	DM	22410	P		22410					Rags/absorbent w/ petroleum products	91663347	03/20/92	WAD058367152
223		NR		1	DM	134	P		134				X	Soil contaminated w/ oil	92786074	11/19/92	WAD058367152
223		NR		1	DM	155	P		155				X	Soil contaminated w/ oil	91664427	07/27/92	WAD058367152
223		NR		1	DM	414	P		414				X	Soil contaminated w/ oil	91505130	07/28/92	WAD058367152
223		NR		1	DM	517	P		517				X	Soil contaminated w/ oil	91661243	09/25/92	WAD058367152
223		NR		2	DM	801	P		801				X	Soil contaminated w/ oil	91661155	09/09/92	WAD058367152
223		NR		1	DM	1044	P		1044				X	Soil contaminated w/ oil	91661461	10/07/92	WAD058367152
223		NR		2	DM	1130	P		1130				X	Soil contaminated w/ oil	91663347	03/20/92	WAD058367152
223		NR		2	DM	2045	P		2045				X	Soil contaminated w/ oil	91663573	04/17/92	WAD058367152
223		NR		5	DM	2370	P		2370				X	Soil contaminated w/ oil	91664589	05/14/92	WAD058367152
223		NR		3	DM	2704	P		2704				X	Soil contaminated w/ oil	91663521	04/09/92	WAD058367152
223		NR		10	DM	4770	P		4770				X	Soil contaminated w/ oil	91788386	06/11/92	CAT000646117
223		NR		9	DM	5733	P		5733				X	Soil contaminated w/ oil	91661259	09/23/92	WAD058367152
223	512 513	NR		1	DM	302	P		302				X	Soil contaminated w/ oil, absorbent, empty containers	91788386	06/11/92	CAT000646117
223		NR		4	DM	3298	P		3298				X	Soil contaminated w/ oil, petroleum hydrocarbons	91664684	06/04/92	WAD058367152
223		NR		1	DM	50	P		50				X	Synthetic oil	91504774	06/17/92	WAD058367152
223		NR		1	DM	169	P		169				X	Synthetic oil	91665055	02/18/92	WAD058367152
223		NR		1	DM	195	P		195				X	Synthetic oil	91505130	07/28/92	WAD058367152
223		NR		1	DM	196	P		196				X	Synthetic oil	91661010	09/01/92	WAD058367152
223		NR		2	DM	228	P		228				X	Synthetic oil	92786108	12/02/92	WAD058367152
223		NR		2	DM	324	P		324				X	Synthetic oil	91663347	03/20/92	WAD058367152
223		NR		1	DM	348	P		348				X	Synthetic oil	91663113	11/06/92	WAD058367152
223		NR		1	DM	364	P		364				X	Synthetic oil	91663459	03/31/92	WAD058367152
223		NR		1	DM	443	P		443				X	Synthetic oil	91663258	03/11/92	WAD058367152
223		NR		2	DM	536	P		536				X	Synthetic oil	91661010	09/01/92	WAD058367152
223		NR		5	DM	712	P		712				X	Synthetic oil	92786074	11/19/92	WAD058367152
223		NR		2	DM	719	P		719				X	Synthetic oil	92786108	12/02/92	WAD058367152

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223		NR		3	DM	720	P		720				X	Synthetic oil	91661155	09/09/92	WAD058367152
223		NR		2	DM	868	P		868				X	Synthetic oil	91661255	09/23/92	WAD058367152
223		NR		5	DM	976	P		976				X	Synthetic oil	91663113	11/06/92	WAD058367152
223		NR		5	DM	1168	P		1168				X	Synthetic oil	91660969	08/21/92	WAD058367152
223		NR		3	DM	1200	P		1200				X	Synthetic oil	91661312	09/30/92	WAD058367152
223		NR		4	DM	1218	P		1218				X	Synthetic oil	91663310	03/13/92	WAD058367152
223		NR		4	DM	1635	P		1635				X	Synthetic oil	91661259	09/23/92	WAD058367152
223		NR		7	DM	1758	P		1758				X	Synthetic oil	91505130	07/28/92	WAD058367152
223		NR		7	DM	1931	P		1931				X	Synthetic oil	91663380	03/26/92	WAD058367152
223		NR		10	DM	3749	P		3749				X	Synthetic oil	91664427	07/27/92	WAD058367152
223		NR		9	DM	3887	P		3887				X	Synthetic oil	91661243	09/25/92	WAD058367152
223		NR		12	DM	4591	P		4591				X	Synthetic oil	91663258	03/11/92	WAD058367152
223		NR		21	DM	7762	P		7762				X	Synthetic oil	91614833	07/14/92	WAD058367152
223		NR		25	DM	8697	P		8697				X	Synthetic oil	91664641	07/14/92	WAD058367152
223		NR		27	DM	11615	P		11615				X	Synthetic oil	91661461	10/07/92	WAD058367152
223		F001	D039 D040	1	TC	98470	P		98470	1722104	42.965%			Water contaminated w/ TCA and TCE	91662902	11/04/92	WAD058367152
232		NR		2	DM	74	P		74	74	0.002%		X	Prometon herbicide	91664925	02/19/92	WAD058367152
281		D001		1	DM	40	P		40					Adhesive	91665055	02/18/92	WAD058367152
281		NR		2	DM	141	P		141					Adhesive base compound with toluene	92786074	11/19/92	WAD058367152
281		D001		1	DM	72	P		72					Adhesive lab pack	91665055	02/18/92	WAD058367152
281		D001		1	DM	266	P		266					Adhesive lab pack	91661461	10/07/92	WAD058367152
281		D001	F003	1	DM	136	P		136					Adhesive primer	91664589	05/14/92	WAD058367152
281		D001		3	DM	342	P		342					Aerosol adhesive	91663347	03/20/92	WAD058367152
281		D001		1	DM	44	P		44					Sealant with manganese dioxide	91663143	11/06/92	WAD058367152
281		D001		1	DM	19	P		19					Sealing compound	92786108	12/02/92	WAD058367152
281		NR		1	DM	69	P		69					Sealing compound	92786108	12/02/92	WAD058367152
281	551	NR		1	DM	250	P		250					Sealing compound	91788155	01/22/92	CAT080010101
281		D001	D008	1	DM	85	P		85					Sealing compound - waste lead dioxide	91663258	03/11/92	WAD058367152
281		D001		1	DM	39	P		39	1503	0.037%			Sealing compound with manganese dioxide	91661600	11/06/92	WAD058367152
331		NR		1	DM	25	G	1.00	209					Aqueous firefighting foam and water	90988708	06/11/92	CAT080010101
331		D001		1	DM	30	P		30					Blue layout dye w/ xylene, isopropanol	91665055	02/18/92	WAD058367152
331		NR		2	DM	105	G	0.80	701					Carbon removing compound	90988705	06/11/92	CAT080010101
331		D007		1	DM	350	P		350					Cleaner w/ sodium chromate	91788249	03/30/92	CAT080010101
331		D007		1	DM	400	P		400					Cleaner w/ sodium chromate	91788249	03/30/92	CAT080010101
331		D005		2	DM	138	P		138					Corrosion preventative: Trichlorotrifluoroethane	91661259	09/23/92	WAD058367152
331		D001		2	DM	179	P		179					Decon kits w/ ethanol	91661461	10/07/92	WAD058367152
331		NR		1	DF	15	G	0.80	100					Detergent, general purpose	91788246	03/30/92	CAT080010101
331		NR		3	DM	165	P		165					Detergent, general purpose	91788249	03/30/92	CAT080010101
331	551	D001		2	DM	400	P		400					Diethylene triamine / epoxy resin	91788227	01/22/92	CAT080010101
331		NR		1	DM	55	G	0.80	367					Emulsifier	89588664	07/07/92	CAT080010101
331	551	NR		2	DM	15	G	0.80	100					Freon / methylene bisphenyl isocyanate	91788227	01/22/92	CAT080010101
331		NR		2	DM	80	G	0.80	534					Grease and polyvinyl polymer	91788263	02/26/92	CAT080010101
331		D001	D018	2	DF	275	P		275					Lab pack - waste liquid (epoxy polymer, toluene, acetone)	90988752	07/09/92	CAT080010101
331		D001	D018 D035	1	DF	150	P		150					Lab pack with epoxy adhesives and sealing compound	90988746	07/07/92	CAT080010101
331		NR		1	DF	20	P		20					Lab pack with phenolphthalein, boric acid	90988746	07/07/92	CAT080010101
331		D001	D007 D035	1	DF	200	P		200					Lab pack with toluene, MEK, adhesives	90988746	07/07/92	CAT080010101
331	551	D009		1	DM	7	G	0.80	47					Lab pack with waste poison (phenylmercury acetate)	91788263	02/26/92	CAT080010101
331		D001	D035	1	DM	50	G	0.80	334					MEK, aliphatic polyisocyanate	91788217	01/31/92	CAT080010101

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331		D001	D006 D007 D008 D035	1	DM	128	P		128					Miscellaneous aerosol paints	91663113	11/06/92	WAD058367152
331		D001	D006 D007 D008 D035	1	DM	130	P		130					Miscellaneous aerosol paints	91661312	09/30/92	WAD058367152
331		D001	D006 D007 D008 D035	3	DM	232	P		232					Miscellaneous aerosol paints	91661461	10/07/92	WAD058367152
331		D001	D006 D007 D008 D035	1	DM	238	P		238					Miscellaneous aerosol paints	91661010	09/01/92	WAD058367152
331		D001	D006 D007 D008 D035	3	DM	304	P		304					Miscellaneous aerosol paints	91661243	09/25/92	WAD058367152
331		D001	D006 D007 D008 D035	3	DM	324	P		324					Miscellaneous aerosol paints	91663258	03/11/92	WAD058367152
331		D001	D006 D007 D008 D035	5	DM	351	P		351					Miscellaneous aerosol paints	91664427	07/27/92	WAD058367152
331		D001	D006 D007 D008 D035	6	DM	501	P		501					Miscellaneous aerosol paints	91661259	09/23/92	WAD058367152
331	551	NR		2	DM	450	P		450					Petroleum distillates	91788155	01/22/92	CAT080010101
331		NR		2	DM	1000	P		1000					Polysulfide rubber	89588674	07/07/92	UTD991301748
331		D001	D035	1	DM	166	P		166					Polyurethane coating	91664641	07/14/92	WAD058367152
331		D001		1	DM	408	P		408					RTV primecoat	91664684	06/04/92	WAD058367152
331	551	D001	D002	1	DF	6	G	0.80	40					Toluene, xylene, petroleum distillates	91788227	01/22/92	CAT080010101
331	551	D001		1	DM	200	P		200					Toluene, xylene, petroleum distillates	91788227	01/22/92	CAT080010101
331	551	D001		3	DM	650	P		650					Toluene, xylene, petroleum distillates	91788155	01/22/92	CAT080010101
331		D002		1	DM	414	P		414					Waste corrosive solids (calcium hydroxide)	91661312	09/30/92	WAD058367152
331		NR		1	DM	538	P		538					Waste diphenylmethane-4,4-diisocyanate	91664684	06/04/92	WAD058367152
331		D001	D005	1	DM	218	P		218					Waste paint	91664684	06/04/92	WAD058367152
331	741	D001	D005 D040	1	DM	50	G	0.80	334					Waste paint, thinners, toluene, xylene	90988705	06/11/92	CAT080010101
331	741	D001	D005 D040	1	DM	55	G	0.80	367	11690	0.292%			Waste paint, thinners, toluene, xylene	90988705	06/11/92	CAT080010101
343		D001		1	DM	520	P		520					Absorbent w/ sodium hydroxide	91663571	04/17/92	WAD058367152
343		D001		2	DM	617	P		617					Absorbent with fuel	91661461	10/07/92	WAD058367152
343		NR		1	DM	36	P		36					Aerosol cleaning compound w/ freon	91660969	08/21/92	WAD058367152
343		NR		1	DM	44	P		44					Aerosol cleaning compound w/ freon	91661312	09/30/92	WAD058367152
343		NR		1	DM	130	P		130					Aircraft cleaner	91664427	07/27/92	WAD058367152
343		D002		10	DM	3704	P		3704					Aircraft cleaner	91663571	04/17/92	WAD058367152
343		D001	D018	1	DM	400	P		400					Asphalt protective roof coating	92786074	11/19/92	WAD058367152
343		D001		1	DM	80	P		80					Combustible liquid labpack	91665055	02/18/92	WAD058367152
343		D001		1	DM	296	P		296					Combustible liquid labpack	91665055	02/18/92	WAD058367152
343		D001		1	DM	309	P		309					Combustible liquid labpack	91665055	02/18/92	WAD058367152
343		D001		1	DM	476	P		476					Combustible liquid labpack	91665055	02/18/92	WAD058367152
343		D001	D035 F003 F005	1	DM	560	P		560					Diesel fuel with xylene, toluene, MEK	91661243	09/25/92	WAD058367152
343		D001		1	DM	56	P		56					Enamel paint w/ mineral spirits	91504774	06/17/92	WAD058367152
343		D001		1	DM	82	P		82					Enamel paint w/ mineral spirits	91661259	09/23/92	WAD058367152
343		D001		1	DM	101	P		101					Enamel paint w/ mineral spirits	91661259	09/23/92	WAD058367152
343		D001		1	DM	141	P		141					Enamel paint w/ mineral spirits	91663380	03/26/92	WAD058367152
343		D001		1	DM	170	P		170					Enamel paint w/ mineral spirits	91663459	03/31/92	WAD058367152
343		D001		1	DM	192	P		192					Enamel paint w/ mineral spirits	91663521	04/09/92	WAD058367152
343		D001		1	DM	353	P		353					Enamel paint w/ mineral spirits	91665055	02/18/92	WAD058367152
343		D001		1	DM	476	P		476					Enamel paint w/ mineral spirits	91665055	02/18/92	WAD058367152
343		D001		2	DM	504	P		504					Enamel paint w/ mineral spirits	91664589	05/14/92	WAD058367152
343		D001	D007	3	DM	515	P		515					Enamel paint w/ mineral spirits	91661010	09/01/92	WAD058367152
343		D001		3	DM	566	P		566					Enamel paint w/ mineral spirits	91663310	03/13/92	WAD058367152
343		D001		4	DM	628	P		628					Enamel paint w/ mineral spirits	91663347	03/20/92	WAD058367152
343		D001		3	DM	642	P		642					Enamel paint w/ mineral spirits	91663573	04/17/92	WAD058367152
343		D001	D007	1	DM	70	P		70					Enamel paint w/ mineral spirits, chrome	92786224	12/14/92	WAD058367152
343		D001	D007	1	DM	86	P		86					Enamel paint w/ mineral spirits, chrome	91663347	03/20/92	WAD058367152
343		NR		1	DM	199	P		199					Ethylene glycol and petroleum products	91661010	09/01/92	WAD058367152
343		NR		2	DM	942	P		942					Ethylene glycol and petroleum products	91663347	03/20/92	WAD058367152
343		NR		3	DM	1588	P		1588					Ethylene glycol and petroleum products	91663521	04/09/92	WAD058367152

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State WC	State Other	EPA WC	EPA other	Container No.	Container Type	Total Qty.	Unit	SG or conv. factor	Weight (P)	Total by State WC	% of Total	Code		Station Personnel Waste Description	Manifest Number	Date Gener. Release	Designated Facility EPA ID No.
343		NR		1	DM	86	P		86					Ethylene glycol and petroleum products	91663571	04/17/92	WAD058367152
343		D001		1	DM	179	P		179					Flammable aerosol labpack	91665055	02/18/92	WAD058367152
343		D001		1	DM	264	P		264					Flammable aerosol labpack	92786224	12/14/92	WAD058367152
343		D001		1	DM	398	P		398					Flammable aerosol labpack	92786108	12/02/92	WAD058367152
343		D001		1	DM	113	P		113					Flammable aerosol labpack (propane, butane)	92786074	11/19/92	WAD058367152
343		D001		1	DM	229	P		229					Flammable aerosol labpack (propane, butane)	92786074	11/19/92	WAD058367152
343		D001		1	DM	106	P		106					Flammable aerosol labpack (toluene, xylene)	91663113	11/06/92	WAD058367152
343		D001		1	DM	402	P		402					Flammable liquid labpack (chromium, MEK)	92786074	11/19/92	WAD058367152
343		D001		1	DM	135	P		135					Flammable liquid labpack (petroleum distillates, chromium)	91663113	11/06/92	WAD058367152
343		D001		1	DM	111	P		111					Flammable liquid labpack (toluene, MEK)	91661461	10/07/92	WAD058367152
343		D001		1	DM	357	P		357					Flammable liquid labpack (toluene, MEK)	91663113	11/06/92	WAD058367152
343		D001		1	DM	425	P		425					Flammable liquid labpack (toluene, MEK)	91663113	11/06/92	WAD058367152
343		D001		1	DM	269	P		269					Flammable liquid labpack (xylene, MEK)	91661155	09/09/92	WAD058367152
343		D001	D018	3	DM	878	P		878					Fuel with benzene	91661259	09/23/92	WAD058367152
343		D001		1	DM	144	P		144					Gas path cleaning compound	91663317	03/26/92	WAD058367152
343		D001		1	DM	474	P		474					Gas path cleaning compound	91663573	04/17/92	WAD058367152
343		D001		3	DM	758	P		758					Gas path cleaning compound	91665055	02/18/92	WAD058367152
343		D001	D018	1	DM	108	P		108					Gasoline with water, benzene	91661259	09/23/92	WAD058367152
343		D001	D018	1	DM	124	P		124					Gasoline with water, benzene	91661259	09/23/92	WAD058367152
343		D001	D018	2	DM	684	P		684					Gasoline with water, benzene	91664589	05/14/92	WAD058367152
343		NR		1	DM	75	G	0.80	500					Penetrant, oil, grease, water/dirt	90988708	06/11/92	CAT080010101
343		D001	F003 F005 D035	1	DM	474	P		474					Petroleum oil	91664427	07/27/92	WAD058367152
343		D001	D035 F003 F005	1	DM	488	P		488					Petroleum oil	91663113	11/06/92	WAD058367152
343		D001	F003 F005 D035	2	DM	650	P		650					Petroleum oil w/ toluene, xylene, MEK	91663521	04/09/92	WAD058367152
343		D001	F003 F005 D035	2	DM	860	P		860					Petroleum oil w/ toluene, xylene, MEK	91663347	03/20/92	WAD058367152
343		D001	F003 F005 D035	1	DM	240	P		240					Petroleum oil w/ toluene, xylene, MEK, acetone	91663380	03/26/92	WAD058367152
343		D001	F003 F005 D035	1	DM	404	P		404					Petroleum oil w/ toluene, xylene, MEK, acetone	91664641	07/14/92	WAD058367152
343		D001	F003 F005 D035	1	DM	434	P		434					Petroleum oil w/ toluene, xylene, MEK, acetone	91663573	04/17/92	WAD058367152
343		D001	D035 F003 F005	2	DM	712	P		712					Petroleum oil w/ toluene, xylene, MEK, acetone	91663258	03/11/92	WAD058367152
343		D001	F003 F005 D035	2	DM	850	P		850					Petroleum oil w/ toluene, xylene, MEK, acetone	91504763	06/08/92	WAD058367152
343		D001	F003 F005 D035	5	DM	2010	P		2010					Petroleum oil w/ toluene, xylene, MEK, acetone	91661259	09/23/92	WAD058367152
343		NR		3	DM	520	P		520					Roofing tar	91663137	11/06/92	WAD058367152
343		D001		1	DM	76	P		76					Stain w/ mineral spirits	91505130	07/28/92	WAD058367152
343		D002		1	DF	12	G	0.80	80					Waste acetic acid	90988707	06/11/92	CAT080010101
343		D001		1	DM	143	P		143	29168	0.728%			Waste aerosols	91663143	11/06/92	WAD058367152
352		F002	D007 D026 F004	1	DM	106	P		106					Absorbent w/ paint remover	91663521	04/09/92	WAD058367152
352		NR		1	DM	115	P		115					Air filters w/ beryllium	91661312	09/30/92	WAD058367152
352		NR		1	DM	200	P		200					Empty containers and absorbent	92471047	10/27/92	CAT080010101
352		D018		1	DM	119	P		119					Oil/fuel filters w/ benzene	91661259	09/23/92	WAD058367152
352		D006	D008 D009 D010 D011	1	DM	197	P		197					Paint chips w/ cadmium, lead, mercury, silver, selenium	91665055	02/18/92	WAD058367152
352		D006	D008 D009 D010 D011	1	DM	300	P		300					Paint chips w/ cadmium, lead, mercury, silver, selenium	91664589	05/14/92	WAD058367152
352		D001		1	DM	56	P		56					Rags contaminated w/ mineral spirits	91661155	09/09/92	WAD058367152
352		D001	D035 F003 F005	1	DM	78	P		78					Rags contaminated w/ toluene, xylene, MEK	92786108	12/02/92	WAD058367152
352		D001	D035 F003 F005	1	DM	100	P		100					Rags contaminated w/ toluene, xylene, MEK	91661155	09/09/92	WAD058367152
352		D001	D035 F003 F005	1	DM	107	P		107					Rags contaminated w/ toluene, xylene, MEK	92786074	11/19/92	WAD058367152
352		D001	D035 F003 F005	1	DM	108	P		108					Rags contaminated w/ toluene, xylene, MEK	92786187	12/02/92	WAD058367152
352		D001	D035 F003 F005	1	DM	158	P		158					Rags contaminated w/ toluene, xylene, MEK	91664427	07/27/92	WAD058367152
352		D001	D035 F003 F005	2	DF	250	P		250					Rags contaminated w/ toluene, xylene, MEK	91664427	07/27/92	WAD058367152
352		D001	D035 F003 F005	3	DM	306	P		306					Rags contaminated w/ toluene, xylene, MEK	91661461	10/07/92	WAD058367152
352		D001	F003 F005 D035	2	DM	314	P		314					Rags contaminated w/ toluene, xylene, MEK	91661259	09/23/92	WAD058367152

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352		D035	F003 F005	5	DM	1059	P		1059					Rags contaminated w/ toluene, xylene, MEK	91665087	02/25/92	WAD058367152
352		F002		1	DM	42	P		42					Rags contaminated w/ trichlorotrifluoroethane	91664427	07/27/92	WAD058367152
352		D007		1	DM	64	P		64					Rags w/ alodine, acetic chromates	91504763	06/08/92	WAD058367152
352		D007	F002	1	DF	50	P		50					Rags w/ paint remover (methylene chloride)	91504773	06/10/92	WAD058367152
352		D008		1	DM	70	P		70					Rags w/ paint, lead	92786224	12/14/92	WAD058367152
352		D008		1	DM	132	P		132					Rags w/ paint, lead	91504773	06/10/92	WAD058367152
352		NR		1	DM	145	P		145					Rags/absorbent contaminated with fuel, oil, POL	91788261	02/26/92	CAT000646117
352		D001	D035	1	DM	66	P		66					Solidified paint w/ MEK, toluene	92786108	12/02/92	WAD058367152
352		NR		1	DM	460	P		460					Solidified tar	91663137	11/06/92	WAD058367152
352		NR		1	DM	100	P		100					Tar paper, wood contaminated w/ solvent	92480955	11/30/92	CAT080010101
352		D007	D035	4	DM	622	P		622					Waste solid, chromium, MEK	91661259	09/23/92	WAD058367152
352		F002	D007	1	DM	32	P		32	5356	0.134%			Waste solid, chromium, methylene chloride	91661259	09/23/92	WAD058367152
461		D001		1	DM	229	P		229					Enamel paint w/ mineral spirits	91664925	02/19/92	WAD058367152
461		D001		1	DM	264	P		264					Enamel paint w/ mineral spirits	91663113	11/06/92	WAD058367152
461		D001		4	DM	667	P		667					Enamel paint w/ mineral spirits	92786074	11/19/92	WAD058367152
461		D001		4	DM	1048	P		1048					Enamel paint w/ mineral spirits	91664684	06/04/92	WAD058367152
461		D001	D008	1	DM	60	P		60					Epoxy polyamide coating w/ n-butanol	92786224	12/14/92	WAD058367152
461		D001	D008	1	DM	62	P		62					Epoxy polyamide coating w/ n-butanol	91660969	08/21/92	WAD058367152
461		D001	D008	1	DM	99	P		99					Epoxy polyamide coating w/ n-butanol	91664427	07/27/92	WAD058367152
461		D001	D008	1	DM	130	P		130					Epoxy polyamide coating w/ n-butanol	91504763	06/08/92	WAD058367152
461		D001	D008	1	DM	165	P		165					Epoxy polyamide coating w/ n-butanol	91664684	06/04/92	WAD058367152
461		D001	D008	3	DM	391	P		391					Epoxy polyamide coating w/ n-butanol	92786074	11/19/92	WAD058367152
461		D001	D008	1	DM	62	P		62					Epoxy polyamide coating w/ n-butanol, lead	91663573	04/17/92	WAD058367152
461		D001	D008	1	DM	141	P		141					Epoxy polyamide coating w/ n-butanol, lead	91665087	02/25/92	WAD058367152
461		D001	D008	2	DM	416	P		416					Epoxy polyamide coating w/ n-butanol, lead	91663347	03/20/92	WAD058367152
461		D001	D005 D007	1	DM	252	P		252					Epoxy primer w/ barium chromate	91665055	02/18/92	WAD058367152
461		D001	D008	1	DM	45	P		45					Miscellaneous paint	91661312	09/30/92	WAD058367152
461		D001	D008	1	DM	116	P		116					Miscellaneous paint	91663113	11/06/92	WAD058367152
461		D001	D008	1	DM	145	P		145					Miscellaneous paint	91661010	09/01/92	WAD058367152
461		D001	D008	1	DM	301	P		301					Miscellaneous paint	91663258	03/11/92	WAD058367152
461		D001	D008	1	DM	312	P		312					Miscellaneous paint	91504774	06/17/92	WAD058367152
461		D001	D008	1	DM	446	P		446					Miscellaneous paint	91504763	06/08/92	WAD058367152
461		D001	D008	1	DM	460	P		460					Miscellaneous paint	91504763	06/08/92	WAD058367152
461		D001	D008	1	DM	480	P		480					Miscellaneous paint	91664684	06/04/92	WAD058367152
461		D001	D008	2	DM	512	P		512					Miscellaneous paint	91663347	03/20/92	WAD058367152
461		D001	D007 F003 F005	1	DM	249	P		249					Mixed waste paint	91665087	02/25/92	WAD058367152
461		D007	F003 F005	7	DM	3372	P		3372					Paint booth sludge	92786187	12/02/92	WAD058367152
461		D007	F003 F005	13	DM	6673	P		6673					Paint booth sludge	91661010	09/01/92	WAD058367152
461		D007	F003 F005	26	DM	12202	P		12202					Paint booth sludge	91665087	02/25/92	WAD058367152
461		NR		1	DM	45	P		45					Paint debris	91663258	03/11/92	WAD058367152
461		NR		1	DM	64	P		64					Paint debris	91663258	03/11/92	WAD058367152
461		NR		1	DM	72	P		72					Paint debris	92786074	11/19/92	WAD058367152
461		NR		1	DM	76	P		76					Paint debris	91661010	09/01/92	WAD058367152
461		NR		1	DM	98	P		98					Paint debris	91664589	05/14/92	WAD058367152
461		D001	D035 F003 F005	1	DM	64	P		64					Paint debris w/ toluene, xylene, MEK	91504763	06/08/92	WAD058367152
461		D001	F003 F005 D035	1	DM	112	P		112					Paint debris w/ toluene, xylene, MEK	91661155	09/09/92	WAD058367152
461		D001	D035 F003 F005	1	DM	288	P		288					Paint debris w/ toluene, xylene, MEK	91661259	09/23/92	WAD058367152
461		D001	D035 F003 F005	2	DM	338	P		338					Paint debris w/ toluene, xylene, MEK	91505130	07/28/92	WAD058367152
461		D001	D035 F003 F005	4	DM	420	P		420					Paint debris w/ toluene, xylene, MEK	91661243	09/25/92	WAD058367152
461		D001	D035 F003 F005	3	DM	734	P		734					Paint debris w/ toluene, xylene, MEK	91504774	06/17/92	WAD058367152

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461		D001	D035 F003 F005	3	DM	1038	P		1038					Paint debris w/ toluene, xylene, MEK	91663571	04/17/92	WAD058367152
461		D001	D035 F003 F005	4	DM	1054	P		1054					Paint debris w/ toluene, xylene, MEK	91663521	04/09/92	WAD058367152
461		D001	F003 F005 D006 D007 D008	1	DM	80	P		80					Paint sludge	91663459	03/31/92	WAD058367152
461		D001	D006 D007 D008 F003 F005 D035	1	DM	288	P		288					Paint sludge	91664427	07/27/92	WAD058367152
461		D001	F003 F005 D035 D006 D008 D008	2	DM	646	P		646					Paint sludge	92786224	12/14/92	WAD058367152
461		D001	D006 D007 D008 D035 F005 F003	6	DM	2005	P		2005					Paint sludge	91663571	04/17/92	WAD058367152
461		D002	D007	1	DM	57	P		57					Paint stripper	92786108	12/02/92	WAD058367152
461		D001	D008	1	DM	124	P		124					Paint w/ lead, mineral spirits	91663573	04/17/92	WAD058367152
461		D001	D008	2	DM	250	P		250					Paint w/ lead, mineral spirits	91664427	07/27/92	WAD058367152
461		D001	D008	2	DM	558	P		558					Paint w/ lead, mineral spirits	91663258	03/11/92	WAD058367152
461		D001	D008	3	DM	729	P		729					Paint w/ lead, mineral spirits	91664589	05/14/92	WAD058367152
461		D001	D006 D007 D008 F003	4	DM	1897	P		1897					Paint w/ petroleum products	91663310	03/13/92	WAD058367152
461		D001	D006 D007 D008 F003 F005	1	DM	116	P		116					Paint w/ solvents	92786108	12/02/92	WAD058367152
461		D001	D006 D007 D008 F003 F005	2	DM	182	P		182					Paint w/ solvents	91663347	03/20/92	WAD058367152
461		D001	D006 D007 D008 F003 F005	1	DM	326	P		326					Paint w/ solvents	91661255	09/23/92	WAD058367152
461		D001	D006 D007 D008 F003	1	DM	505	P		505					Paint w/ solvents	91663258	03/11/92	WAD058367152
461		D001	D006 D007 D008 F003	3	DM	598	P		598					Paint w/ solvents	91663521	04/09/92	WAD058367152
461		D001	D006 D007 D008 D035	1	DM	150	P		150					Paint w/ solvents, cadmium, chromium, lead, MEK	91665055	02/18/92	WAD058367152
461		D001	D006 D007 D008 D035	1	DM	40	P		40					Paint w/ solvents, chromium, cadmium, MEK	92786224	12/14/92	WAD058367152
461		D001	D035	1	DM	90	P		90					Polyurethane coating	91663459	03/31/92	WAD058367152
461		D001	D035 F003 F005	1	DM	96	P		96					Polyurethane coating	91661243	09/25/92	WAD058367152
461		D001	F003 F005 D035	2	DM	160	P		160					Polyurethane coating	91660969	08/21/92	WAD058367152
461		D001	F003 F005 D035	1	DM	168	P		168					Polyurethane coating	91661255	09/23/92	WAD058367152
461		D001	F003 F005 D035	2	DM	235	P		235					Polyurethane coating	91661010	09/01/92	WAD058367152
461		D001	D035 F003 F005	2	DM	262	P		262					Polyurethane coating	91504763	06/08/92	WAD058367152
461		D001	D035 F003 F005	2	DM	295	P		295					Polyurethane coating	92786074	11/19/92	WAD058367152
461		D001	F003 F005 D035	3	DM	524	P		524					Polyurethane coating	91664684	06/04/92	WAD058367152
461		D001	D035 F003 F005	3	DM	945	P		945					Polyurethane coating	91663258	03/11/92	WAD058367152
461		D001	F003 F005 D035 F002	1	DM	56	P		56					Polyurethane coating w/ MEK, methylene chloride	91664589	05/14/92	WAD058367152
461		D001	F003 F005 D035 F002	1	DM	64	P		64					Polyurethane coating w/ MEK, methylene chloride	91663573	04/17/92	WAD058367152
461		D001	F003 F005 F002 D035	1	DM	354	P		354					Polyurethane coating w/ MEK, methylene chloride	91665087	02/25/92	WAD058367152
461		D001	F005 F003 D035 F002	2	DM	506	P		506					Polyurethane coating w/ MEK, methylene chloride	91663521	04/09/92	WAD058367152
461		D001	D035	1	DM	90	P		90					Polyurethane coating w/ MEK, MIBK	91663459	03/31/92	WAD058367152
461		D001	D035	1	DM	140	P		140					Polyurethane coating w/ MEK, MIBK	91663459	03/31/92	WAD058367152
461		D001		1	DM	75	P		75					Spray paint	91663459	03/31/92	WAD058367152
461		D001	D006 D007 D008 D035 F003 F005	1	DM	43	P		43					Waste paint	91505130	07/28/92	WAD058367152
461		D001	D006 D007 D008 F003	1	DM	43	P		43					Waste paint	91505130	07/28/92	WAD058367152
461		D001	D006 D007 D008 F003	1	DM	74	P		74					Waste paint	91504774	06/17/92	WAD058367152
461		D001		1	DM	108	P		108					Waste paint	91661259	09/23/92	WAD058367152
461		D001	D006 D007 D008 F003	1	DM	120	P		120					Waste paint	91664684	06/04/92	WAD058367152
461		D001		1	DM	125	P		125					Waste paint	91661259	09/23/92	WAD058367152
461		D001	D006 D007 D008 F003	1	DM	131	P		131					Waste paint	92786074	11/19/92	WAD058367152
461		D001		1	DM	196	P		196					Waste paint	91661259	09/23/92	WAD058367152

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State WC	State Other	EPA WC	EPA other	Container No.	Container Type	Total Qty.	Unit	SG or conv. factor	Weight (P)	Total by State WC	% of Total	Code		Station Personnel Waste Description	Manifest Number	Date Gener. Release	Designated Facility EPA ID No.
461		D001	D006 D007 D008 F003	4	DM	224	P		224					Waste paint	91661681	06/04/92	WAD058367152
461		D001		1	DM	230	P		230					Waste paint	91661259	09/23/92	WAD058367152
461		D001	D006 D007 D008 F003	2	DM	247	P		247					Waste paint	92786074	11/19/92	WAD058367152
461		D001	D006 D007 D008 F003	1	DM	476	P		476					Waste paint	91664589	05/14/92	WAD058367152
461		D001	D006 D007 D008 F003	1	DM	500	P		500					Waste paint	91663258	03/11/92	WAD058367152
461		D001	D008	3	DM	505	P		505					Waste paint	91663317	03/26/92	WAD058367152
461		D001	D006 D007 D008 D035	2	DM	696	P		696					Waste paint	91661461	10/07/92	WAD058367152
461		D001	D006 D007 D008 F003	2	DM	918	P		918					Waste paint	91664684	06/04/92	WAD058367152
461		D001	D006 D007 D008 F003	3	DM	1164	P		1164	52113	1.300%			Waste paint	91661243	09/25/92	WAD058367152
512	513	NR		1	DM	25	P		25					Empty containers	91664589	05/14/92	WAD058367152
512	513	NR		1	DM	40	P		40					Empty containers	91663113	11/06/92	WAD058367152
512	513	NR		1	DM	44	P		44					Empty containers	91661155	09/09/92	WAD058367152
512	513	NR		1	DM	52	P		52					Empty containers	91663258	03/11/92	WAD058367152
512	513	NR		1	DM	56	P		56					Empty containers	91663310	03/13/92	WAD058367152
512	513	NR		1	DM	60	P		60					Empty containers	91660969	08/21/92	WAD058367152
512	513	NR		1	DM	72	P		72					Empty containers	91661259	09/23/92	WAD058367152
512	513	NR		1	DM	72	P		72					Empty containers	91663113	11/06/92	WAD058367152
512	513	NR		1	DM	80	P		80					Empty containers	91664427	07/27/92	WAD058367152
512	513	NR		1	DM	84	P		84					Empty containers	91661259	09/23/92	WAD058367152
512	513	NR		1	DM	88	P		88					Empty containers	91661243	09/25/92	WAD058367152
512	513	NR		1	DM	90	P		90					Empty containers	91663113	11/06/92	WAD058367152
512	513	NR		1	DM	94	P		94					Empty containers	91664684	06/04/92	WAD058367152
512	513	NR		1	DM	95	P		95					Empty containers	91663571	04/17/92	WAD058367152
512	513	NR		1	DM	102	P		102					Empty containers	91663571	04/17/92	WAD058367152
512	513	NR		2	DM	106	P		106					Empty containers	92786074	11/19/92	WAD058367152
512	513	NR		1	DM	120	P		120					Empty containers	91664427	07/27/92	WAD058367152
512	513	NR		2	DM	129	P		129					Empty containers	91661312	09/30/92	WAD058367152
512	513	NR		2	DF	134	P		134					Empty containers	91504763	06/08/92	WAD058367152
512	513	NR		1	DM	158	P		158					Empty containers	91663143	11/06/92	WAD058367152
512	513	NR		2	DM	178	P		178					Empty containers	91664641	07/14/92	WAD058367152
512	513	NR		2	DM	202	P		202					Empty containers	91505130	07/28/92	WAD058367152
512	513	NR		1	DM	250	P		250					Empty containers	91788261	02/26/92	CAT000646117
512	513	NR		2	DM	254	P		254					Empty containers	92786187	12/02/92	WAD058367152
512	513	NR		3	DM	255	P		255					Empty containers	91663143	11/06/92	WAD058367152
512	513	NR		2	DM	274	P		274					Empty containers	91661461	10/07/92	WAD058367152
512	513	NR		5	DM	407	P		407					Empty containers	91664427	07/27/92	WAD058367152
512	513	NR		3	DM	500	P		500					Empty containers	91788223	01/27/92	CAT000646117
512	513	NR		1	TP	1354	P		1354					Empty containers	91504774	06/17/92	WAD058367152
512	513	NR		60	DM	3000	P		3000					Empty containers	91664660	06/04/92	WAD058367152
512	513	NR		1	CM	6260	P		6260					Empty containers	91661552	10/13/92	CAT000646117
512	513	NR		110	DM	6350	P		6350					Empty containers	91664427	07/27/92	WAD058367152
512	513	NR		3	CF	3	Y		150					Empty containers	91788202	01/13/92	CAT000646117
512	513	NR		1	CF	1	Y		50					Empty containers	91788244	03/30/92	CAT000646117
512	513	NR		23	DM	1265	P		1265	22450	0.560%			Epoxy containers	91663258	03/11/92	WAD058367152
541		NR		1	DF	15	G	1.50	188					Consolidated photochemicals	90988707	06/11/92	CAT080010101
541		D002		1	DM	78	P		78					Empty photochemical bladders	92786108	12/02/92	WAD058367152
541	331	NR		1	DF	5	G	0.80	33					Photographic chemicals	92471020	10/09/92	CAT080010101
541		NR		1	DF	90	P		90					Photography labpack	90988752	07/09/92	CAT080010101
541		D007	D008	1	DM	154	P		154					Photography waste w/ chromium	91663173	11/21/92	WAD058367152

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State WC	State Other	EPA WC	EPA other	Container No.	Container Type	Total Qty.	Unit	SG or conv. factor	Weight (P)	Total by State WC	% of Total	Code		Station Personnel Waste Description	Manifest Number	Date Gener. Release	Designated Facility EPA ID No.
541		D011		1	DM	376	P		376	919	0.023%			Silver recovery units with copper, silver	91661312	09/30/92	WAD058367152
551		D002		1	DF	86	P		86					Acid liquid labpack	91661259	09/23/92	WAD058367152
551		D001		1	DM	68	P		68					Flammable liquid labpack	91665055	02/18/92	WAD058367152
551		D001		1	DM	150	P		150					Flammable liquid labpack	91665055	02/18/92	WAD058367152
551		D001		1	DM	195	P		195					Flammable liquid labpack	91665055	02/18/92	WAD058367152
551		D001		1	DM	202	P		202					Flammable liquid labpack	91665055	02/18/92	WAD058367152
551		D001		1	DM	233	P		233					Flammable liquid labpack	91665055	02/18/92	WAD058367152
551		D001		1	DM	272	P		272					Flammable liquid labpack	91665055	02/18/92	WAD058367152
551		D001		1	DM	288	P		288					Flammable liquid labpack	91663459	03/31/92	WAD058367152
551		D001		1	DM	305	P		305					Flammable liquid labpack	91665055	02/18/92	WAD058367152
551		D001		1	DM	318	P		318					Flammable liquid labpack	91665055	02/18/92	WAD058367152
551		D001		1	DM	336	P		336					Flammable liquid labpack	91664684	06/04/92	WAD058367152
551		D001		1	DM	375	P		375					Flammable liquid labpack	91665055	02/18/92	WAD058367152
551		NR		1	DF	7	G	0.80	47					Formaldehyde/methanol - labpack	91788228	01/27/92	CAT080010101
551		D003		1	DF	30	P		30					Grease/Lead - labpack	91788228	01/27/92	CAT080010101
551		D001	D007	1	DF	22	P		22					Lab pack w/ chromic acid, potassium dichromate	90988746	07/07/92	CAT080010101
551		NR		1	DF	10	P		10					Liquid dye - cyanogen blue	91788247	03/30/92	CAT080010101
551		NR		2	DF	50	P		50	2987	0.075%			Waste liquid - sodium thiocyanate, iodine, benzyl chloride, dimethyl sulfate	91788247	03/30/92	CAT080010101
611		D008		4	DM	1	Y		2720					Sandblast grit w/ vermiculite and absorbent	92000637	09/30/92	NVT330010000
611		NR		2	CM	18	T	2000	36000				X	Soil contaminated w/ fuel	90762386	04/22/92	CAD000633164
611		NR		2	CM	18	T	2000	36000				X	Soil contaminated w/ fuel	90762387	04/22/92	CAD000633164
611		D006	D007 D008 F003 F005	1	DM	730	P		730	75450	1.882%		X	Soil with paint chips	91505131	11/06/92	WAD058367152
741		F001		1	DM	20	P		20					1,1,1-TCA	91663258	03/11/92	WAD058367152
741		F001		1	DM	40	G	1.60	534					1,1,1-TCA	91788233	02/04/92	CAD089446710
741		D002	D007	1	DM	55	P		55					Corrosive paint remover	91661259	09/23/92	WAD058367152
741		D002	D007	1	DM	72	P		72					Corrosive paint remover	91661255	09/23/92	WAD058367152
741		D002	D007	3	DM	1290	P		1290					Corrosive paint remover, toluene, methanol, sodium chromate	91663347	03/20/92	WAD058367152
741		F002		1	DM	60	P		60					Freon	92786074	11/19/92	WAD058367152
741		F002		1	DM	84	P		84					Freon	91663573	04/17/92	WAD058367152
741		F002		1	DM	180	P		180					Freon	91663317	03/26/92	WAD058367152
741		F002		6	DM	4158	P		4158					Freon	91664427	07/27/92	WAD058367152
741		D001	F002 F005 D035 D007	1	DM	302	P		302					Paint, stripper, water, methylene chloride, chromium, MEK	91664589	05/14/92	WAD058367152
741		D001	F002 F005 D035 D007	1	DM	302	P		302					Paint, stripper, water, methylene chloride, MEK	91663347	03/20/92	WAD058367152
741		D001	D039 D018	13	DM	1077	P		1077					Petroleum naphtha	90933024	04/03/92	CAT000613976
741		D001	D039 D018	15	DM	1085	P		1085					Petroleum naphtha	908991255	03/06/92	CAT000613976
741		D001	D039 D018	14	DM	1122	P		1122					Petroleum naphtha	90990833	05/29/92	CAT000613976
741		D001	D039 D018	14	DM	1163	P		1163					Petroleum naphtha	91729381	01/10/92	CAT000613976
741		D001	D039 D018	14	DM	1163	P		1163					Petroleum naphtha	91795235	02/07/92	CAT000613976
741		D001	D039 D018	19	DM	1347	P		1347					Petroleum naphtha	90990429	05/01/92	CAT000613976
741		D001	D039 D018	17	DM	1421	P		1421					Petroleum naphtha	92121258	07/24/92	CAT000613976
741		D001	D039 D018	19	DM	1429	P		1429					Petroleum naphtha	92147653	06/26/92	CAT000613976
741		F002		1	DM	348	P		348	17212	0.429%			Stoddard solvent with methylene chloride	91664684	06/04/92	WAD058367152
791	551	D001	D002	1	DF	50	P		50					Chromic Acid / Phosphonic acid	91788155	01/22/92	CAT080010101
791		D002		1	DF	80	P		80					Corrosion removing compound w/ phosphoric acid	91664427	07/27/92	WAD058367152
791		D008		1	DM	43	P		43					Neutralized sulfuric acid spill cleanup debris	91661243	09/25/92	WAD058367152
791		D002		1	DF	1	G	0.80	7					Sulfuric acid	89588664	07/07/92	CAT080010101

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State WC	State Other	EPA WC	EPA other	Container No.	Container Type	Total Qty.	Unit	SG or conv. factor	Weight (P)	Total by State WC	% of Total	Code		Station Personnel Waste Description	Manifest Number	Date Gener. Release	Designated Facility EPA ID No.
791		D002		1	DM	188	P		188					Sulfuric acid	91663380	03/26/92	WAD058367152
791		D002		1	DF	550	P		550					Sulfuric acid	91504774	06/17/92	WAD058367152
791		D002	D008	1	DM	482	P		482					Sulfuric acid with lead	91664925	02/19/92	WAD058367152
791	551	D002		1	DF	15	P		15	1415	0.035%			Waste acetic acid	91788247	03/30/92	CAT080010101
792		D002	D007	1	DF	115	P		115					Alodine corrosion resistant coating, chromic acid	91665055	02/18/92	WAD058367152
792		D001	D002	2	DF	454	P		454					Nitric acid	91665055	02/18/92	WAD058367152
792		D002	D007	1	DF	30	G	0.80	200	769	0.019%			Waste alodine mixture - chromic, phosphoric and sulfuric acids	91788246	03/30/92	CAT080010101
			Total Hazardous Waste (lb)						**4008128**		**100%**						
Non-Hazardous Waste																	
N/A		NR		4	DM	1989	P		1989					Calcium hydroxide, polymer, water	91661259	09/23/92	WAD058367152
N/A		NR		1	DM	190	P		190					Ethylene glycol (antifreeze)	92786074	11/19/92	WAD058367152
N/A		NR		1	DM	200	P		200					Ethylene glycol (antifreeze)	91663310	03/13/92	WAD058367152
N/A		NR		1	DF	335	P		335					Ethylene glycol (antifreeze)	91664427	07/27/92	WAD058367152
N/A		NR		1	DM	346	P		346					Ethylene glycol (antifreeze)	91664589	05/14/92	WAD058367152
N/A		NR		1	TT	61	G	0.80	407					Ethylene glycol (antifreeze)	91788219	01/31/92	CAT040370645
N/A		NR		2	DM	473	P		473					Ethylene glycol (antifreeze)	92786108	12/02/92	WAD058367152
N/A		NR		1	DM	580	P		580					Ethylene glycol (antifreeze)	91663113	11/06/92	WAD058367152
N/A		NR		3	DM	650	P		650					Ethylene glycol (antifreeze)	91505130	07/28/92	WAD058367152
N/A		NR		3	DM	982	P		982					Ethylene glycol (antifreeze)	91661259	09/23/92	WAD058367152
N/A		NR		2	DM	982	P		982					Ethylene glycol (antifreeze)	91664684	06/04/92	WAD058367152
N/A		NR		2	DM	1154	P		1154					Ethylene glycol (antifreeze)	91661255	09/23/92	WAD058367152
N/A		NR		3	DM	1343	P		1343					Ethylene glycol (antifreeze)	91664925	02/19/92	WAD058367152
N/A		NR		4	DM	1400	P		1400					Ethylene glycol (antifreeze)	91663573	04/17/92	WAD058367152
N/A		NR		5	DM	1635	P		1635					Ethylene glycol (antifreeze)	91664427	07/27/92	WAD058367152
N/A		NR		25	DM	13269	P		13269					Ethylene glycol (antifreeze)	91663258	03/11/92	WAD058367152
N/A		NR		1	DM	66	P		66					Carpet shampoo	91504774	06/17/92	WAD058367152
N/A		NR		2	DM	1256	P		1256					Cooking grease	91661461	10/07/92	WAD058367152
N/A		NR		1	DM	234	P		234					Dessicant	91663521	04/09/92	WAD058367152
N/A		NR		1	DM	74	P		74					Gemiletol, dental lubricant	91664589	05/14/92	WAD058367152
N/A		NR		1	DM	25	P		25					Latex paint	91661461	10/07/92	WAD058367152
N/A		NR		1	DM	51	P		51					Latex paint	92786108	12/02/92	WAD058367152
N/A		NR		1	DM	116	P		116					Latex paint	91504763	06/08/92	WAD058367152
N/A		NR		1	DM	125	P		125					Latex paint	91665055	02/18/92	WAD058367152
N/A		NR		2	DM	173	P		173					Latex paint	91661259	09/23/92	WAD058367152
N/A		NR		1	DM	359	P		359					Latex paint	91665055	02/18/92	WAD058367152
N/A		NR		1	DM	60	P		60					Lime sulfur fungicide	91664641	07/14/92	WAD058367152
N/A		NR		1	DM	146	P		146					Mineral oil	91661259	09/23/92	WAD058367152
N/A		NR		1	DM	90	P		90					Non-hazardous waste liquid labpack	92786074	11/19/92	WAD058367152
N/A		NR		1	TP	125	K	2.20	275	28985	100%			Noncontaminated electrical equipment	90420168	03/23/92	AZD982465866
			Total Non-Hazardous Waste (lb)						**28985**		**100%**						

Total Manifested Waste (lb)	**4312306**

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State WC	State Other	EPA WC	EPA other	Container		Total Qty.	Unit	SG or conv. factor	Weight (P)	Total by State WC	% of Total	Code	Station Personnel Waste Description	Manifest Number	Date Gener. Release	Designated Facility EPA ID No.
				No.	Type											

N/A = No applicable California Waste Code

NR = Non-RCRA

E = Extremely hazardous waste

X = Exempt under SB 14

Types of hazardous waste containers:

BA = Burlap, cloth, paper, or plastic bags

CF = Fiber or plastic boxes, cartons, or cases

CM = Metal boxes, cartons, cases, roll-offs

CW = Wooden boxes, cartons, or cases

DF = Fiberboard or plastic drums, barrels, or kegs

DM = Metal drums, barrels, kegs

TC = Tank cars

TP = Tanks, portable

TT = Tank trucks, cargo tanks

Unit of weight or volume

G = Gallons

K = Kilograms

P = Pounds

T = Tons (2,000 lb)

Y = Cubic yards

Appendix B

Mandatory 24 Hour

Hazardous Waste Management Training

SPEAKERS

Col. Chessum, USMC	Assistant Cheif of Staff Environment and Saftey Department
Mr. Wayne Lee	Director Environmental Department
LCDR Serafini, CEC, USN	Director Environmental Engineering Division Environmental Department
Capt. Jump, USMC	Counsel Camp Pendleton Environmental
Lt. Jackson, USN	Wing Industrial Hygenist
Ms. Carolyn Wright	Regional Shelf-Life Coordinator Fleet & Industrial Supply Center, San Diego
CPL Salmon, USMC	MALS 16, Avoinics
CPL Turman, USMC	MALS 16
	HAZMAT Team El Toro
Firefighter Beverly Brewster	El Toro Fire Department
Ms. Janette Barr	Environmental Protection Specialist Environmental Department
Ms. Leta Suarez	Environmental Protection Specialist Environmental Department

2 NOVEMBER 1993

TIME	TOPIC	SPEAKER
0730	Intro/Admin Remarks	Ms. Leta Suarez
0745	Welcoming Remarks	Col. Chessum, USMC
0800	Film - Handling Hazardous Waste Introduction 15.25	Ms. Leta Suarez
0820	Break	
0835	Hazardous Waste Problem Section I	Ms. Leta Suarez
0915	Break	
0930	Hydrology Model/ Installation Restoration	LCDR Serafini, USN
1015	Break	
1030	Hazardous Waste Laws and Regulations, Section II	COMCABWEST Counsel
	Regulatory Process, Section III	COMCABWEST Counsel
	Navy and Federal Policies, Section IV	COMCABWEST Counsel
1130	Lunch	
1230	Film - The Burial Ground 30:00	Ms. Leta Suarez
1305	Break	
1320	Hazardous Properties, Section V	Ms. Leta Suarez
1300	Break	

2 NOVEMBER 1993

TIME	TOPIC	SPEAKER
1410	Health and Environmental Effects, Section VI	Ms. Leta Suarez
1510	Break	
1520	Personal Safety, Section VII	Ms. Leta Suarez
	Selecting the Correct Personal Protective Equiipment (PPE) for the Job	
	PPE Workshop	Class

3 NOVEMBER 1993

TIME	TOPIC	SPEAKER
0730	Review/Questions	Ms. Leta Suarez
0745	Hazardous Waste Labeling ABO 5090.1B/Bulletin	Ms. Leta Suarez
	Hazardous Waste Identification Section VIII	Ms. Leta Suarez
	DOT Identification Section XIV	Ms. Leta Suarez
	Hazardous Waste Transportation Section XVIII	Ms. Leta Suarez
1100	Lunch	
1200	Fieldtrip Brief	Ms. Leta Suarez
1215 or 1315	Fieldtrip 90-Day HW Accumulation Site HM Storage Site Record Keeping	Sgt. Osterman
1215 or 1315	Air Base Order 5090.1B/Bulletin Designation of Personnel HM/HW Training Records Inspection Records Weekly Drum Report Hazardous Material Storage Hazardous Material Report HM/HW in Your Area	Ms. Leta Suarez
1415	Break	
1425	Proper Handling of HW	TBA
	Proper Packaging of HW	TBA
1530	Compatibility, Section XII	Ms. Leta Suarez
	Compatability Workshop	Class

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TIME	TOPIC	SPEAKER
0730	Review/Questions	Ms. Leta Suarez
0740	Contingency Planning Section XIX	Ms. Leta Suarez
	Contingency Planning Workshop	Class
	Spill Kits and Cleanup	Ms. Leta Suarez
0935	Film - Drum and Other Small Spills, Control, Containment and Cleanup 19:00	Ms. Leta Suarez
1000	Workshop - The Bottom Line Putting It All Together	Class
1100	Lunch	
1200	Hazardous Material Shelf Life Minimization, Substitution, Recycling	Ms. Carolyn Wright
1300	Break	
1315	Hazardous Materials Management Program	CPL Salmon, USMC/ CPL Turman, USMC
1345	DRMO Hazardous Material Turn-In Procedures/1348-1	TBA
1415	Hazardous Material Disclosure	Firefighter Beverly Brewster
	HAZMAT One	HAZMAT Team
1445	Break	
1500	Review/Questions	Ms. Leta Suarez
	Exam	

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TIME	TOPIC	SPEAKER
1615	Closing Remarks/Certificates Turn in Critiques	Mr. Wayne Lee