EAST BAY
MUNICIPAL UTILITY DISTRICT

DAVID R. WILLIAMS
DIRECTOR OF WASTEWATER

CERTIFIED MAIL
(Return Receipt Requested)
Certified Mail No. 7004 1160 0007 3362 3975

April 2, 2007

Mr. Robert Fox
Lawrence Berkeley National Laboratory
1 Cyclotron Road
Berkeley, California 94720

Dear Mr. Fox:

Re: Wastewater Discharge Permit No. 5023891 1

Enclosed is the Wastewater Discharge Permit (Permit) for the Lawrence Berkeley National Laboratory, Bldgs. 25 and 77 facility located at1 Cyclotron Road, Berkeley in California, effective April 8, 2007 through April 7, 2012. Please read the Terms and Conditions carefully. As a Permit Holder, you are legally responsible for complying with all Permit conditions and requirements.

Lawrence Berkeley National Laboratory, Bldgs 25 & 77 shall report to the EBMUD Environmental Services Division any permanent or temporary changes to the premises or operations that either significantly affect the quality or volume of wastewater discharge, or deviate from the terms and conditions under which this Permit is granted.

If you have any questions regarding this matter, please contact Cynthia Soohoo of the Environmental Services Division at (510) 287-0290.

Sincerely,

BENNETT K. HORENSTEIN
Manager of Environmental Services

BHK:CLS:cls

Enclosures

W:\NAB\IDS\Permits\Categorical\LBL\Permit delivery2007.doc

P.O. BOX 24055 . OAKLAND . CA 94623-1055 . (510) 287-1405

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BERKELEY LAB

Environment, Health & Safety Division
Environmental Services Group

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MAR 02 2007
ENVIRONMENTAL SERVICES DIV

CERTIFIED

Ms. Cynthia Soohoo
Wastewater Control Representative
East Bay Municipal Utility District
Source Control Division
P.O. Box 24055
Oakland, CA 94623-1055

February 26, 2007
ES-07-013

Subject: Permit #50238911 Application Signature Page

Dear Ms. Soohoo:

Enclosed is the application signature page for Permit #50238911 (as you requested). A complete electronic version of the application was e-mailed to you on February 7, 2007. Should you require further information or have any questions, please contact me at (510) 486-7327.

"I certify under penalty of law 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 person or persons who manage the system, or those persons directly responsible for gathering 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 submitting false information, including the possibility of fine and imprisonment for knowing violations."

Sincerely,

Robert Fox
Environmental Specialist

Enclosures:

Permit #50238911 Application Signature Page (1 page)

Ernest Orlando Lawrence Berkeley National Laboratory
One Cyclotron Road, BLDG 85B0198 |Berkeley, California 94720-8282 |Tel: 510.486.7327 |Fax: 510.486.6603

EBMUD

WASTEWATER DISCHARGE PERMIT
Terms and Conditions
APPLICANT INFORMATION

APPLICANT BUSINESS NAME	PERMIT NUMBER
Regents of the University of California Lawrence Berkeley National Laboratory	50238911

ADDRESS OF SITE DISCHARGING WASTEWATER

STREET ADDRESS	CITY	ZIP CODE
One Cyclotron Rd, B77 & B25	Berkeley	94720

PERSON TO BE CONTACTED REGARDING THIS APPLICATION

NAME	ELECTRONIC MAIL ADDRESS	TELEPHONE NUMBER	FACSIMILE NUMBER
Robert Fox	RAFOX@LBL.gov	(510) 486-7327	(510) 486-6603

PERSON(S) TO RECEIVE PERMIT AND CORRESPONDENCE IF DIFFERENT THAN PERSON SIGNING APPLICATION

NAME	MAILING ADDRESS

PERSON TO BE CONTACTED IN THE EVENT OF AN EMERGENCY

NAME	DAYTIME TELEPHONE NUMBER	NIGHTTIME TELEPHONE NUMBER
LBNL Fire Deptartment	(510) 486-7911	(510) 486-7911

AUTHORIZATION

Robert Fox
Environmental Specialist *is authorized to sign reports, documents, and other correspondence required by this Permit.*
NAME & TITLE

CERTIFICATION

I understand that I am legally responsible for discharge of wastewater from the facility and for complying with the Terms and Conditions of this Wastewater Discharge Permit.

I certify under penalty of law 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 person or persons who manage the system, or those persons directly responsible for gathering 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 submitting false information, including the possibility of fine and imprisonment for knowing violations.

NAME	TITLE
Robert Fox	Environmental Specialist

SIGNATURE	DATE
Robert Fox	2/7/07

(TO BE SIGNED BY CHIEF EXECUTIVE OFFICER OR DULY AUTHORIZED REPRESENTATIVE. SEE CERTIFICATION REQUIREMENTS ON REVERSE)

MAILING ADDRESS	PHONE NUMBER
One Cyclotron Rd MS 85B0198 Berkeley, CA 94720	(510) 486-7327

WASTEWATER DISCHARGE PERMIT

Lawrence Berkeley National Laboratory **Terms and Conditions**

APPLICANT BUSINESS NAME Buildings 77 and 25 **PROCESS DESCRIPTION**

The information on this form provides a description of wastewater generating processes, characteristics of the wastewater, and waste management activities. Instructions are on the back of this form.		Permit Number 50238911
BUSINESS ACTIVITY B77 - UHVC Facility; B25 - Photo Fab Shop	Standard Industrial Classification 3471, 3479, 3672	Business Classification Code 3470

PROCESSES

Process Description	Wastewater Characteristics	Schematic Process Number
Rinsewater from electroplating bath,	Heavy metals, acids, and	Not Applicable
cleaning, etching, silk screening,	bases	
milling, application of satin finishes		
- See attached process descriptions for further detail.		

POLLUTION PREVENTION TECHNIQUES / BEST MANAGEMENT PRACTICES (BMPs)

Both the Building 77 and the Building 25 treatment units have secondary containment. In addition, the secondary containment is continuously monitored by a leak detection system.

As a BMP the sludge is dewatered in a filter press at both treatment units. At Building 77 the resulting filter cake is put in a low heat batch dryer to further remove water and reduce the volume of the filter cake.

PRETREATMENT

Pretreatment System	Design Capacity	Loading Rate	Size	Side Sewer Number
☒ filtration	B77 -60 gpm, B25 - 10 gpm			B77 - SS#2
☐ grease trap/oil and water separator				B25 - SS#1
☐ granular activated carbon				
☐ sedimentation				
☒ pH adjustment				
☐ chlorination				
☒ chemical precipitation				
☐ other (describe)				
☐ none				

PROCESS GENERATED WASTE	Annual Waste Generation	
Waste / Disposal Method	Quantity	Unit
See Attached. All hazardous waste generated is processed through LBNL's Hazardous Waste Handling Facility. Ultimately waste is sent to a TSDF for further treatment and disposal.		

4/10/03

EBMUD

WASTEWATER DISCHARGE PERMIT

Terms and Conditions

APPLICANT BUSINESS NAME Lawrence Berkeley National Lab

Buildings 77 & 25

WATER BALANCE/STRENGTH SUMMARY

WASTEWATER STRENGTH ESTIMATES		Wastewater Discharge to each Side Sewer				
		No. 1	No. 2	No.	No.	No.
Total Suspended Solids mg/L (TSS)	Average	N/A	N/A			
	Maximum	N/A	N/A			
Filtered Chemical Oxygen Demand mg/L (CODF)	Average	N/A	N/A			
	Maximum	N/A	N/A			

DISCHARGE FREQUENCY

Days of Week	Varies	Varies			
Time of Day (Start & Stop Time)	7:30 am 3:30 pm	7:30 am 3:30 pm			
Volume, if Batch Discharge AVG. gallons/working day	630	370			

SIDE SEWER LOCATION

No. 1
Hearst monitoring station is located on Cyclotron Road below Blackberry Gate. The Building 25 FTU discharges to this side sewer.

No. 2
Strawberry monitoring station is located on Centennial Drive just across the street from the Strawberry Canyon Recreation Area. The Building 77 FTU discharges to this side sewer.

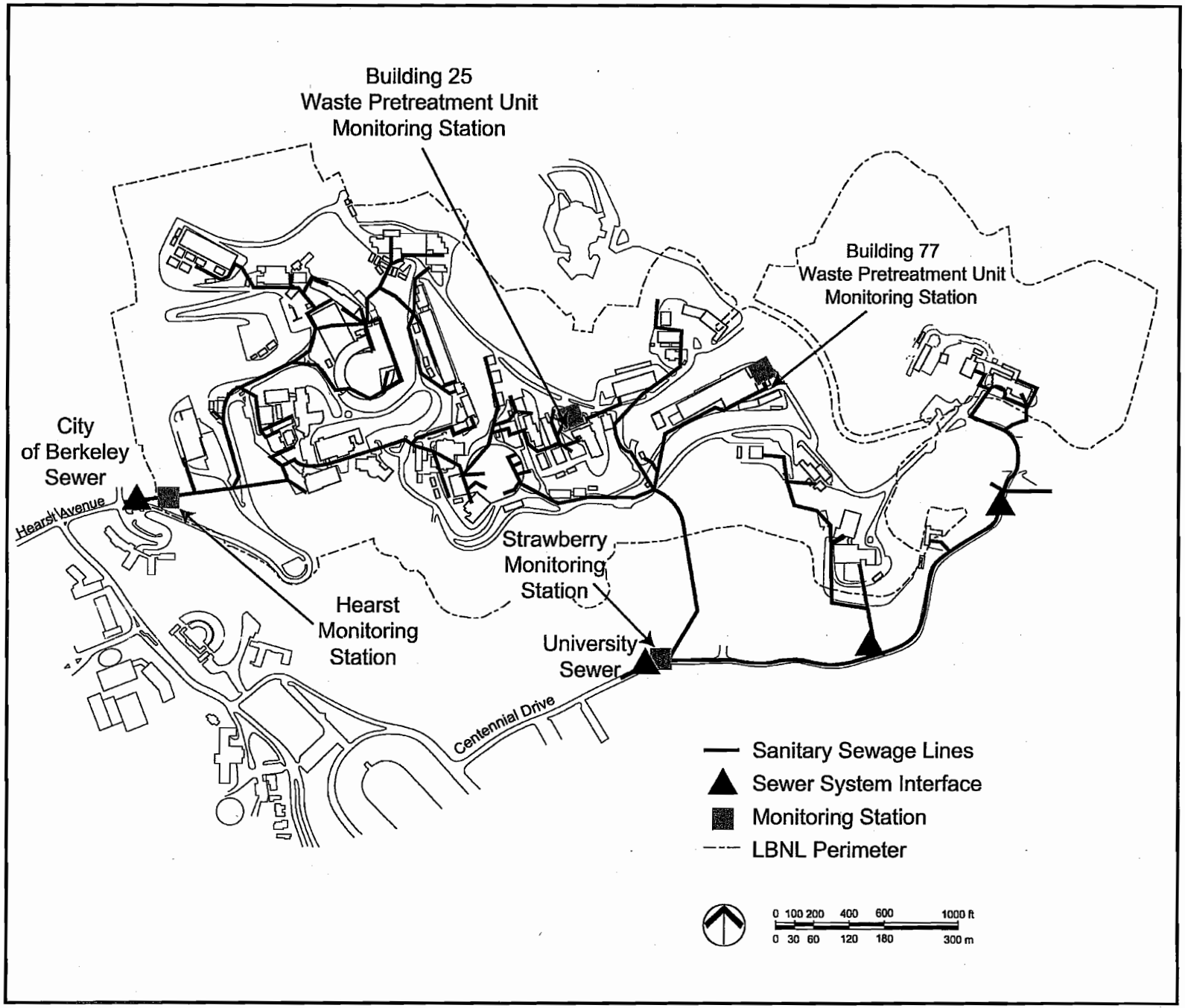
No.

No.

No.

STORMWATER AREA

Total square-foot area exposed to stormwater that drains to the sanitary sewer: N/A sq. ft.


Building 25
Waste Pretreatment Unit
Monitoring Station
Building 77
Waste Pretreatment Unit
Monitoring Station
City
of Berkeley
Sewer
Hearst Avenue
Hearst
Monitoring
Station
Strawberry
Monitoring
Station
University
Sewer
Centennial Drive
Sanitary Sewage Lines
Sewer System Interface
Monitoring Station
LBNL Perimeter
0 100 200 400 600 1000 ft
0 30 60 120 180 300 m

PROCESS DESCRIPTION
ELECTRONIC SERVICES FIXED TREATMENT UNIT FTU 002
LBL - BUILDING 25

PhotoFabrication and Silk-Screening facilities, provides a variety of electronic assembly and photo fabrication services for the LBL community. These services include: manufacture of rigid and flexible printed circuit boards, Silk-screening of equipment panels, photo imaging, etching, and electroless metal plating.

The printed circuit board, plating, chemical milling(etching) and silk screening process discharges wastewater into the Fixed Treatment Unit FTU 002 located at Building 25. Also, there are two sinks which are connected to FTU 002. A maximum of 2,500 gallons per month of wastewater from these processes are treated in FTU 002.
The chemical rinse water process which discharge directly into FTU 002 include:

- AFR-2 cleaner, rinse water
- Micro Etch ND, rinse water
- Pre-catalyst dip, rinse water
- Deburring machine
- Electroless copper, nickel and gold rinse water
- Riston stripper
- Silk Screen cleaning solutions
- Developing Ulano film

The wastewaters from the above process and sinks flow into a sump. From the sump the wastewater is pumped into a 550-gallon holding tank. The 550-gallon holding tank provides equalization and allows the fixed treatment unit (FTU 002) to be operated on a batch basis (as often as twice per month). Sulfuric acid is added to lower the pH to <3. Ferric chloride is added to help precipitate heavy metals and sodium hydroxide are then added to neutralize the wastewater.

A polyelectrolyte coagulant is added to aid in the flocculation of the metal precipitate in the flocculation chamber. The wastewater is then clarified and filtered.

After the treatment process is complete treated rinse water is collected in a 550 gallon holding tank. The treated water in the holding tank is analyzed by a trained personnel. If the results show that the treated water meets in-house standards then the treated water is discharged to the local Publicly Owned Treatment Works (POTW) which is the East Bay Municipal Utility District (EBMUD). If the treated water does not meet in-house standards (approximately one-half of EBMUD's discharge limits) then the water is passed through the treatment process a second time.

This treatment process generates a sludge which contains metals. The sludge is dewatered in a filter press. The filter cake, a residual hazardous waste, typically contains copper, lead, nickel, and zinc. The filter cake is collected in a 12-gallon drum for transportation off-site by a registered hazardous waste hauler.

EBMUD

APPLICANT BUSINESS NAME Lawrence Berkeley National Lab

Building 25

WASTEWATER DISCHARGE PERMIT

Terms and Conditions

WATER BALANCE/STRENGTH SUMMARY

The information on this form describes the volume, source, and strength of wastewater discharged to the community sewer. Instructions are on the back of this form.	Permit Number 50238911

WATER USE AND WASTEWATER DISCHARGE BALANCE

Units expressed in: gallons per calendar day or ☒ gallons per working day (Number of working days per year 14*)

* 14 days in calendar 2006

Water Use	Source			Wastewater Discharge to each Side Sewer					Water Diverted	Code[2]
	EBMUD	Other	Code[1]	No. 1	No.	No.	No.	No.		
Sanitary										
Processes	630			630					-0-	
Product										
Boiler										
Cooling										
Washing										
Irrigation										
Sub-total	630			630					-0-	
Total	All Sources 630			All Side Sewers 630			All Side Sewers + Water Diverted 630			
Maximum Daily Discharge (gallons)										

METERED WATER

Water Meter Number	Code[3]	Percent Discharge to each Side Sewer					Total % Discharge
70027448 *	E	100					
0004710 *	E						
* Each supply meter supplies the entire system ensuring redundancy in the event of							
failure. Hence, percent discharge to each side sewer for each supply meter can							
not be determined.							

[1]Other / Code: Compute the average gallon per day water use from non-EBMUD sources and enter the value in the Other "Sub-total" box. Do not include sources that discharge only to the stormdrain. Allocate the subtotal value to each type of water use. Enter the code(s) that identifies the source water:

A= Well Water / Groundwater *B= Stormwater* *C= Reclaimed Water* *D= Other (describe)*

[2]Water Diverted/Code: Enter the diverted volume for each type of water use. Enter the code(s) that identifies the diversion:

A= Product *B= Evaporation* *C= Irrigation* *D= Creek/Bay* *E= Rail, Truck, Vessel* *F= Other (describe)*

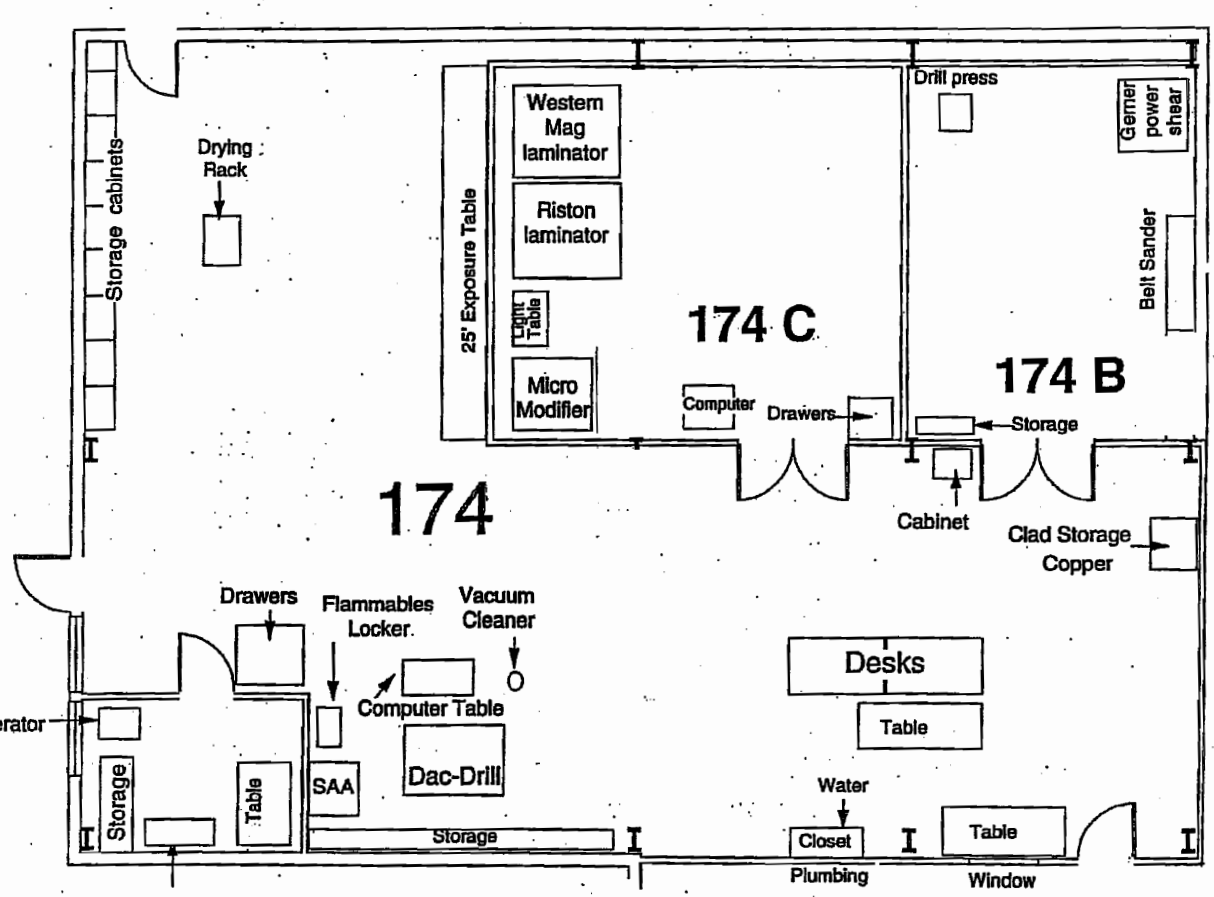
[3]Metered Water Code(s): E= EBMUD Meter P= Private Meter

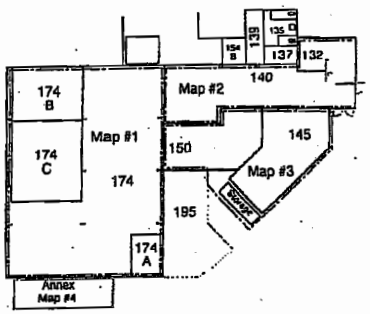
	B25 FTU 002			
	CALENDAR YEAR 2006			
		Monthly usage (gallons)		
January 2006		0		
February		414		
March		523		
April		906		
May		1186		
June		381		
July		1125		
August		565		
September		1125		
October		1425		
November		416		
December		753		
	SUM=	8819		
	MEAN=	735		
	STD DEV=	422		
	MAX=	1425		
	MIN=	0		
Gallons / Working Day = Total Gallons for CY06 / Total Working Days in CY06				
Total gallons for CY 06 = 8819 gallons				
Total working days in CY06 = 14 days				
Gallons / Working Day = 8819 / 14 =		**630**		

asp1005

Figure 2-2

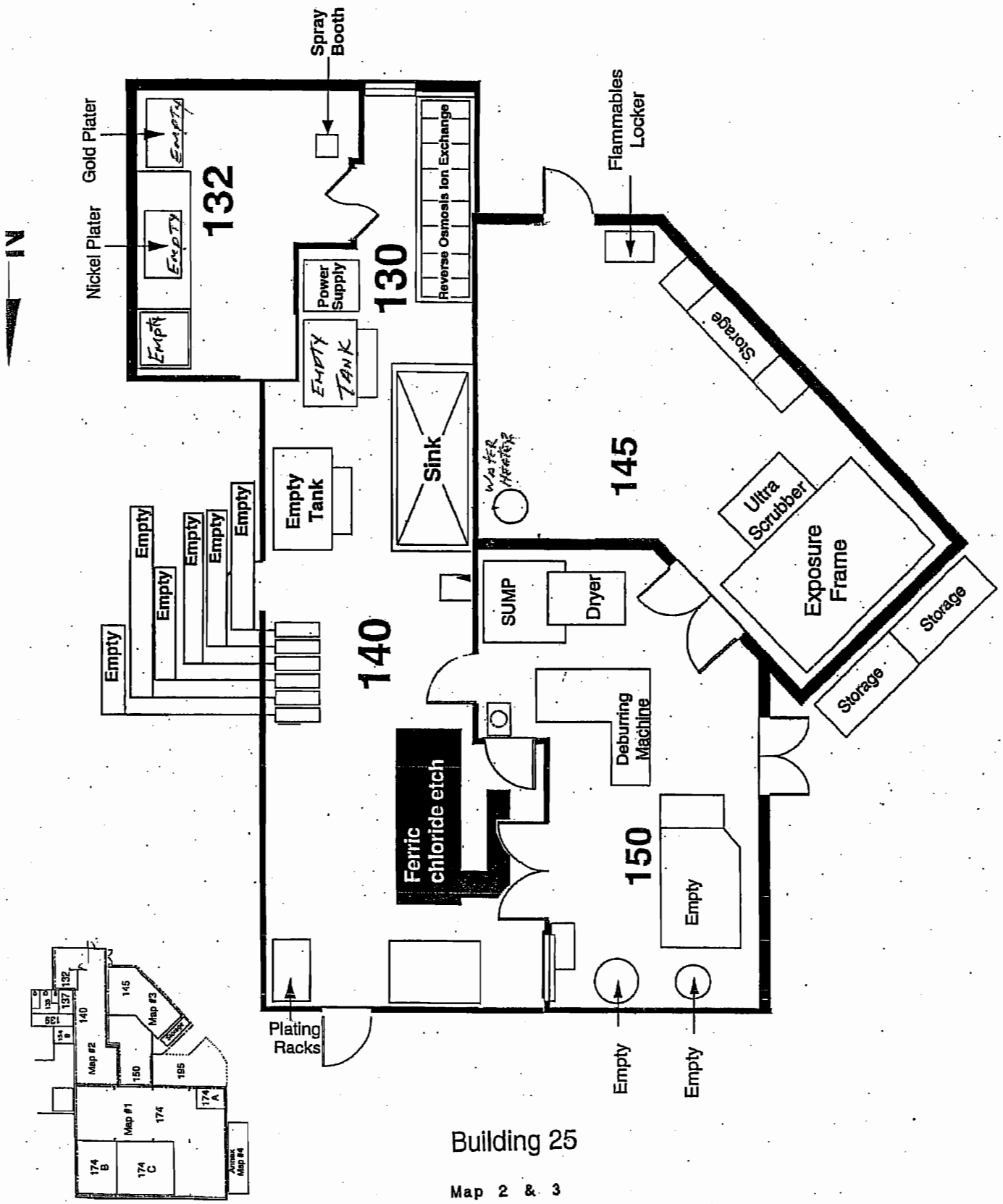
Building 25 Map #1





Rev. 7/00

Permit No. 5023891 1



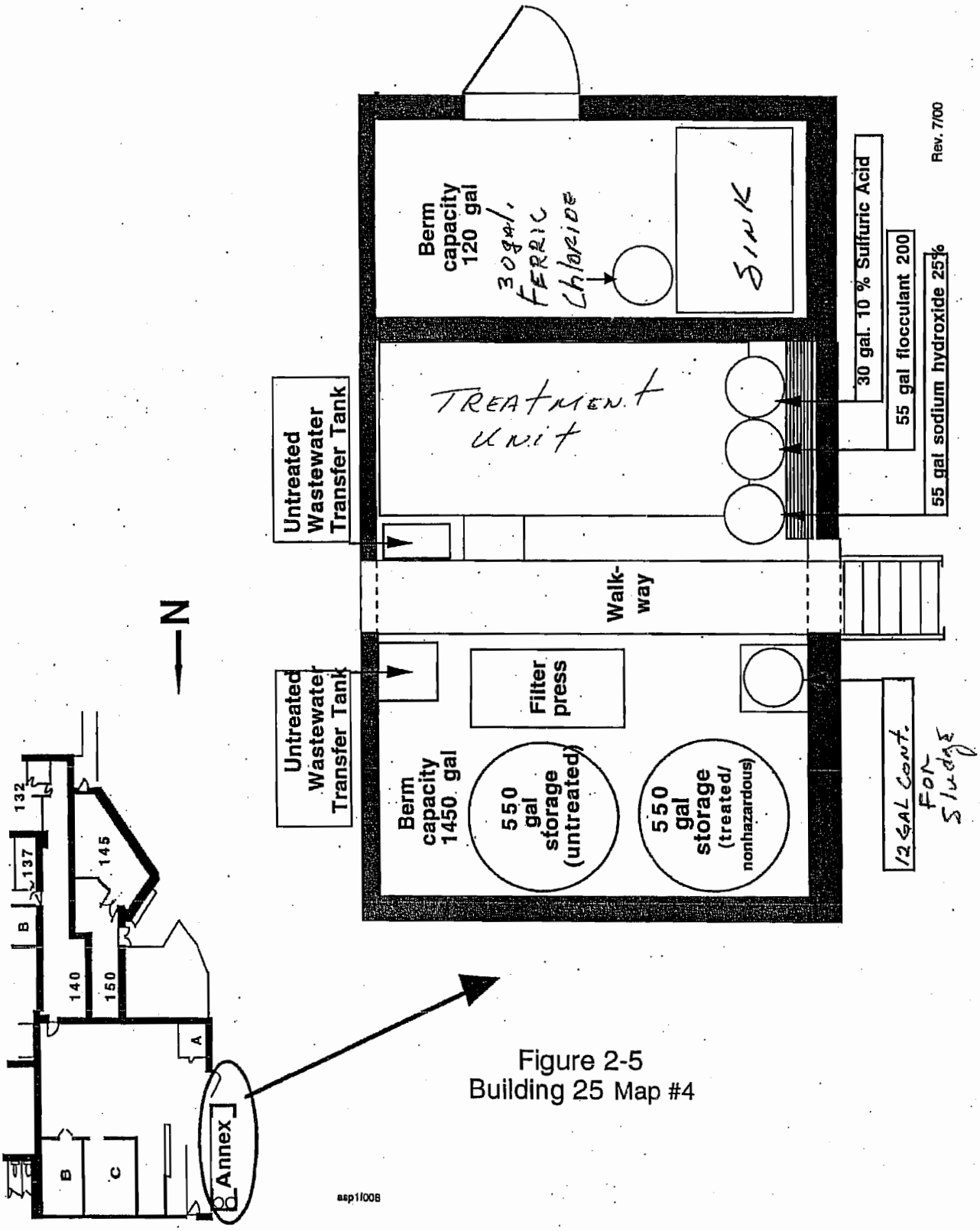
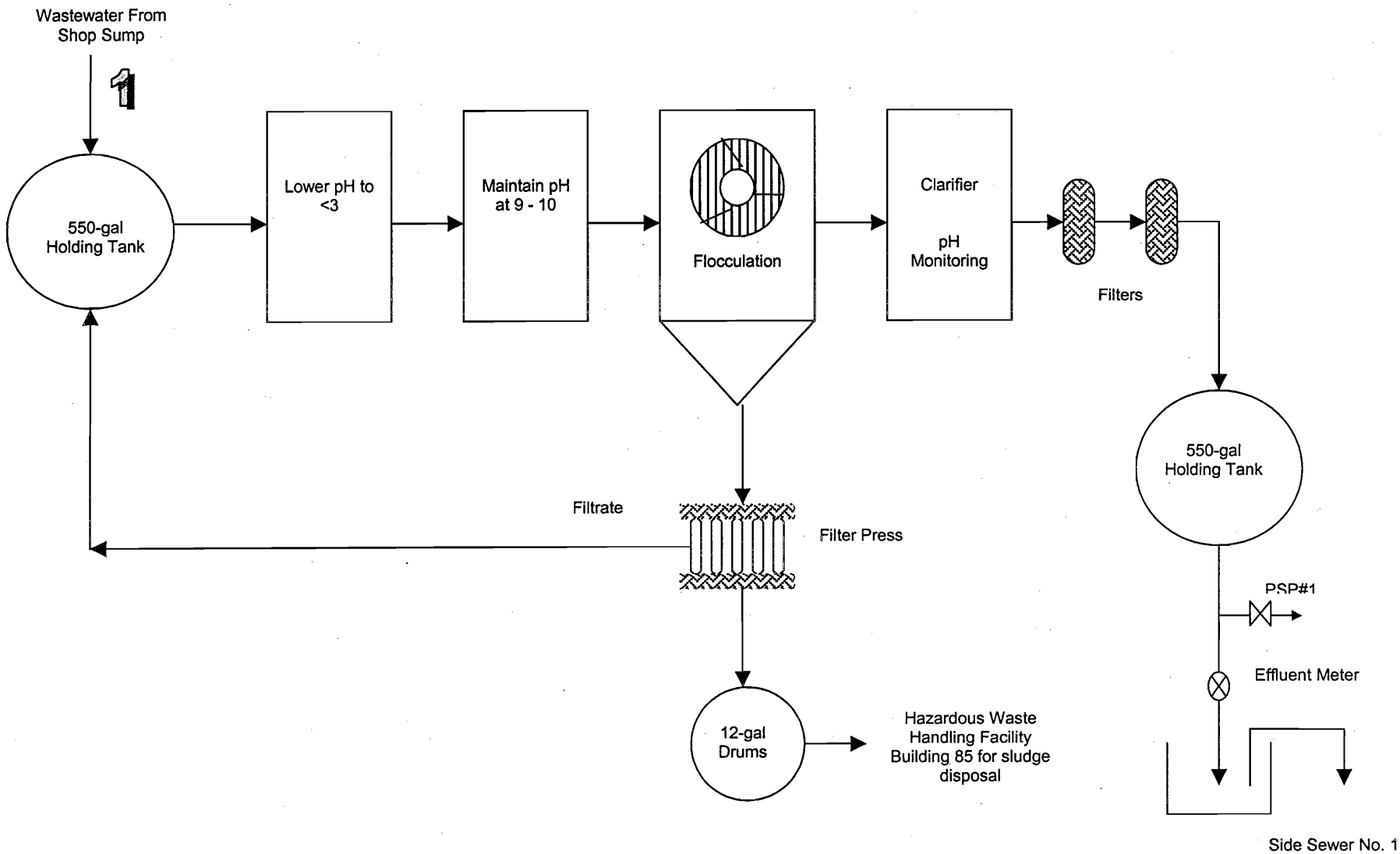


Figure 2-5
Building 25 Map #4

Rev. 7/00



Building 25 FTU 002 Wastewater Treatment Process

Process Generated Waste
Calendar Year 2006

for

Building 25
Photo Fabrication Shop

---> ShoeBox --->

SBR546

Hazardous & Rad/Mixed Waste Quantities by Division

01/24/2007 16:59

Number of Pages: 15

Start Date: 01-JAN-06 End Date: 01-JAN-07

Date Option: P

Select Haz: Y

Select Mixed: Y

Select Rad: Y

Select Non-Haz: Y

query on database

Buildings:

Rooms:

Generators: '048806'

Ruby Bautolo

B25 waste

Divisions:

Accounts:

Include ReqLine with this Constituent Description:

Physical Forms:

Treatability Groups:

Inventory Only? N

Chemical Constituents:

Isotopes:

HW Codes:

Weight Unit: K Volume Unit: L

Hazardous Waste

Division: EG - Engineering

Bldg	Location	Generator	Requisition/Line Container Id	Receipt Date HWHF Date	Constituent Description			Weight K	Volume L	Cu. ft.
025	0101	Bartolo,Rodolfo U (VELR05)	Q09431:1	06/16/2006	Sludge with heavy metals -- copper, nickel, zinc, tin-lead			Inorganic Solid		
			C131441	06/28/2006	Container Descr.:	12.2 gal	FTU	13.61		1.63
			Q09431:2	06/16/2006	Filter bags and tubes with heavy metals -- copper, nickel, zinc, tin-lead			Inorganic Solid		
			C131442	07/19/2006	Container Descr.:	30 gal	FTU	22.68		4.01
			Q09431:3	06/16/2006	Wipes contaminated with enamel ink, solvents. Contains propylene glycol, ethers, petroleum distillate, and lead naphthanate.			Inorganic Solid		
			C131443	06/28/2006	Container Descr.:	55 gal		24.95		7.35
			Q10018:1	11/20/2006	Sludge with heavy metals: copper, nickel, zinc, tin-lead			Inorganic Solid		
WAA = Waste treatment unit			C135009	12/13/2006	Container Descr.:	12.2 gal	FTU Need a replacemenrt container	48.85		1.63
	0140	Bartolo,Rodolfo U (VELR05)	Q09782:1	09/15/2006	Absorbant (pigs) with ferric chloride			Inorganic Solid		
			C133478	09/27/2006	Container Descr.:	12.2 gal		9.07		1.63
			Q09782:2	09/15/2006	Electroless nickel micro 282SX contaminated rinse water. Contains: trace hypophosphorous acid; 1.2% nickel, and water balance. [pH=5.8]			Inorganic Liquid		
			C133479	09/27/2006	Container Descr.:	5 gal			9.46	0.33
	0145 Rooms 145 & 150	Bartolo,Rodolfo U (ROPS21)	Q09199:1	04/28/2006	2-(2-butoxyethoxy) ethanol			Organic Liquid		

"Cu. ft." is calculated from the volume if it exists; otherwise, it is calculated from the weight. Caution!! When weights must be used, weights are converted to cu. ft. by multiplying the weight in pounds by 0.01602 (specific gravity of water). ShoeBox has no way of determining if this calculation makes sense for any particular waste. The user should examine the description or constituents for all waste with no recorded volume.

Hazardous Waste

Division: EG - Engineering

Bldg	Location	Generator	Requisition/Line Container Id	Receipt Date HWHF Date	Constituent Description		Weight K	Volume L	Cu. ft.
025	0145	Bartolo,Rodolfo U (ROPS21)	C130062	05/15/2006	Container Descr.:	4 liters		4.00	0.14
			Q09199:2	04/28/2006	99.9% tetrahydrofuran (unused)		Organic Liquid		
Rooms 145 & 150									
			C130063	05/15/2006	Container Descr.:	1 liters		0.90	0.03
			Q09199:3	04/28/2006	Conformal coating stripper contains: 95% methylene chloride, 5% methyl alcohol		Organic Liquid		
Rooms 145 & 150 - Ops: please verify information on container with description and notify Amy			C130064	05/15/2006	Container Descr.:	500 ml		0.06	0.00
			Q09199:6	04/28/2006	99% morpholine		Organic Liquid		
Rooms 145 & 150									
			C130071	05/15/2006	Container Descr.:	1 liters		1.00	0.04
			C130072	05/15/2006	Container Descr.:	1 liters		1.00	0.04
			C130073	05/15/2006	Container Descr.:	1 liters		1.00	0.04
			C130074	05/15/2006	Container Descr.:	1 liters		0.80	0.03
			Q09199:7	04/28/2006	99% ethanolamine		Organic Liquid		
Rooms 145 & 150									
			C130075	05/15/2006	Container Descr.:	500 ml		0.50	0.02
			C130076	05/15/2006	Container Descr.:	500 ml		0.50	0.02
			C130077	05/15/2006	Container Descr.:	500 ml		0.13	0.00
			Q09199:8	04/28/2006	99% diethylene Glycol mono-butyl ether		Organic Liquid		
Rooms 145 &									

"Cu. ft." is calculated from the volume if it exists; otherwise, it is calculated from the weight. Caution!! When weights must be used, weights are converted to cu. ft. by multiplying the weight in pounds by 0.01602 (specific gravity of water). ShoeBox has no way of determining if this calculation makes sense for any particular waste. The user should examine the description or constituents for all waste with no recorded volume.

Hazardous Waste

Division: EG - Engineering

Bldg	Location	Generator	Requisition/Line Container Id	Receipt Date HWHF Date	Constituent Description	Weight K	Volume L	Cu. ft.
025 150	0145	Bartolo,Rodolfo U (ROPS21)						
			C130078	05/15/2006	Container Descr.: 4 liters		3.00	0.11
			C130079	05/15/2006	Container Descr.: 4 liters		3.50	0.12
			C130080	05/15/2006	Container Descr.: 4 liters		4.00	0.14
	0150	Bartolo,Rodolfo U (ROPS21)	Q09199:4	04/28/2006	60% diethylene Glycol mono-butyl ether, 20% morpholine, 5% ethanolamine, 15% water	Organic Liquid		
			C130068	05/15/2006	Container Descr.: 5 gal		18.93	0.67
			C130069	05/15/2006	Container Descr.: 1 gal		3.79	0.13
			Q09199:5	04/28/2006	Wiped & gloves contaminated with diethylene glycol mono-butyl ether, morpholine, ethanolamine	Organic Solid		
			C130070	05/15/2006	Container Descr.: 1 gal	0.68		0.13
	0174	Bartolo,Rodolfo U (ROPS21)	Q08757:1	01/05/2006	chemetron No. 509 soldering flux contains fluoborates (All State)	Inorganic Solid		
			C127409	01/25/2006	Container Descr.: 500 ml	0.05		0.00
			Q08757:2	01/05/2006	Silver Flake (Allfa)	Inorganic Solid		
			C127410	01/25/2006	Container Descr.: 10 ml	0.01		0.00
			Q08757:3	01/05/2006	silver liquid (Electron Microscopy Sciences) contains silver 59-61%, isopropyl alcohol 20-35%, methyl ethyl ketone 10-15%, ethyl acetate 2-10%	Organic Liquid		
			C127411	01/25/2006	Container Descr.: 15 ml		0.02	0.00
			Q08757:4	01/05/2006	Allen soldering salts contains zinc chloride & ammonium chloride	Inorganic Solid		
			C127412	01/25/2006	Container Descr.: 250 ml	0.45		0.01

"Cu. ft." is calculated from the volume if it exists; otherwise, it is calculated from the weight. Caution!! When weights must be used, weights are converted to cu. ft. by multiplying the weight in pounds by 0.01602 (specific gravity of water). ShoeBox has no way of determining if this calculation makes sense for any particular waste. The user should examine the description or constituents for all waste with no recorded volume.

Hazardous Waste

Division: EG - Engineering

Bldg	Location	Generator	Requisition/Line Container Id	Receipt Date HWHF Date	Constituent Description	Weight K	Volume L	Cu. ft.
025	0174	Bartolo,Rodolfo U (ROPS21)	Q08757:5	01/05/2006	Kester soldering paste flux contains zinc chloride 24% and petrolatum 65%, balance with non hazardous ingredients.	Organic Solid		
			C127413	01/25/2006	Container Descr.: 16 fl. oz.	0.45		0.02
			C127414	01/25/2006	Container Descr.: 2 fl. oz.	0.05		0.00
			Q08757:6	01/05/2006	Lapping compound contains white aluminum oxide mixed with oil and soap 38-1200	Organic Liquid		
			C127415	01/25/2006	Container Descr.: 8 fl. oz.		0.24	0.01
			Q08757:7	01/05/2006	Amtex Chemical Co. silicone remover contains: aliphatic dibasic acid esters, propylene glycol, propylene glycol methyl ether (010-436-4813) surfactants, diphenyl oxide, disulfonate, alkaline silicates.	Organic Liquid		
			C127416	01/25/2006	Container Descr.: 1 liters		1.00	0.04
			Q08757:8	01/05/2006	One to one X-40 Part A contains: ~~trichloromonofluoromethane 30%~~, polyether polyol 70%. trichloromonofluoromethane 30%	Organic Liquid		
			C127417	01/25/2006	Container Descr.: 1 liters		0.50	0.02
			Q08757:9	01/05/2006	One to one X-40 Part B contains Diphenylmethane Diisocyanate 100%	Organic Liquid		
			C127418	01/25/2006	Container Descr.: 1 liters		0.75	0.03
			Q08757:10	01/05/2006	Metal filings (steel), trim sol, and oil mixture.	Organic Liquid		
			C127419	01/25/2006	Container Descr.: .5 pt		0.09	0.00

"Cu. ft." is calculated from the volume if it exists; otherwise, it is calculated from the weight. Caution!! When weights must be used, weights are converted to cu. ft. by multiplying the weight in pounds by 0.01602 (specific gravity of water). ShoeBox has no way of determining if this calculation makes sense for any particular waste. The user should examine the description or constituents for all waste with no recorded volume.

Hazardous Waste

Division: EG - Engineering

Bldg	Location	Generator	Requisition/Line Container Id	Receipt Date HWHF Date	Constituent Description	Weight K	Volume L	Cu. ft.
025	0174	Bartolo,Rodolfo U (ROPS21)	Q08757:11	01/05/2006	monothane resin	Organic Solid		
			C127420	01/25/2006	Container Descr.: 1 gal	4.99		0.13
			Q08757:12	01/05/2006	Monoprime (Synair) Tn. Chat contains: Ethyl 3-ethoxypropionate 5-10%, methy ethyl ketone 40-50%, propylene glycol monomethyl ether acetate 5-40% & xylene 10-15%	Organic Liquid		
			C127421	01/25/2006	Container Descr.: 1 liters		1.00	0.04
			Q08803:1	01/12/2006	red insulating varnish containing ethyl benzene 13%, xylene 42%, iron oxide 18%, balance inert	Organic Liquid		
			C127558	01/25/2006	Container Descr.: 2 fl. oz.		0.06	0.00
			Q08803:2	01/12/2006	3M spray mount contains: 1,1,1-trichloroethane, isobutane, acetone, propane, and heptane isomers.	Organic Liquid		
			C127559	01/25/2006	Container Descr.: 13.5 fl. oz.		0.15	0.01
			Q08803:3	01/12/2006	pure neatsfoot oil (unused)	Organic Liquid		
			C127560	01/25/2006	Container Descr.: 1 pt		0.47	0.02
			Q08803:4	01/12/2006	Magnobond 6392 Part B contains: <70% amines and balance with non hazardous ingredients.	Inorganic Solid		
			C127561	01/25/2006	Container Descr.: 1 pt	0.18		0.02
			Q08803:5	01/12/2006	Lubriplate 630 -AA (grease)	Organic Solid		
			C127562	01/25/2006	Container Descr.: 14 fl. oz.	0.45		0.01
			Q08803:6	01/12/2006	CRC 3-36 contains: 67% hydrotreated light petroleum distillate, 4% carbon dioxide, and 29%	Organic Liquid		

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Hazardous Waste

Division: EG - Engineering

Bldg	Location	Generator	Requisition/Line Container Id	Receipt Date HWHF Date	Constituent Description	Weight K	Volume L	Cu. ft.
025	0174	Bartolo,Rodolfo U (ROPS21)			paraffinic oil.			
			C127563	01/25/2006	Container Descr.: 16 fl. oz. Aerosol can		0.15	0.01
			Q08803:7	01/12/2006	lubricating oil (unused)	Organic Liquid		
			C127564	01/25/2006	Container Descr.: 1 gal		3.79	0.13
			Q08803:8	01/12/2006	99% glycerine	Organic Liquid		
			C127565	01/25/2006	Container Descr.: 1 gal		3.79	0.13
			Q08803:9	01/12/2006	ALUMTAP contains: 80% naphthenic oil, 10% tetrachlorethylene, 10% fatty derivative	Organic Liquid		
			C127566	01/25/2006	Container Descr.: 1 pt		0.47	0.02
			Q08803:10	01/12/2006	Used oil (lubricating)	Organic Liquid		
			C127567	01/25/2006	Container Descr.: 1 gal		1.89	0.07
			Q08803:11	01/12/2006	Nu Sheen stainless steel + all purpose cleaner + polish contains: >75% hydrotreated middle distillate, <5% hydrotreated naphthenic, and balance with non hazardous ingredients.	Organic Liquid		
			C127568	01/25/2006	Container Descr.: 1 qt		0.47	0.02
			Q08803:12	01/12/2006	kerosene	Organic Liquid		
			C127569	01/25/2006	Container Descr.: 5 gal		3.79	0.13
			Q08803:13	01/12/2006	synlube 1000 release agent contains: 3-5% aromatic petroleum distillate, 30-35% liquefied petroleum gas, and 55-60% n-Hexane	Organic Liquid		

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Hazardous Waste

Division: EG - Engineering

Bldg	Location	Generator	Requisition/Line Container Id	Receipt Date HWHF Date	Constituent Description		Weight K	Volume L	Cu. ft.
025	0174	Bartolo,Rodolfo U (ROPS21)							
			C127570	01/25/2006	Container Descr.:	10.5 fl. oz. Aerosol		0.30	0.01
			C127571	01/25/2006	Container Descr.:	10.5 fl. oz. Aerosol		0.30	0.01
			Q08803:14	01/12/2006	Sealing compound-gasket type contains: 7.4% isopropanol, .3% ammonium hydroxide, .3% propylene glycol methyl ether 31%, castor oil, 31% castor oil, 31% alumino silicate, 27.1% carbonic acid, .3% carbon, 2.6% water,		Organic Solid		
			C127572	01/25/2006	Container Descr.:	11 fl. oz.	0.68		0.01
			Q08803:15	01/12/2006	732 multi-purpose sealant contains: 1-5% methyl triacetoxysilane, 1-5% ethyltriacetoxysilane, and balance with non hazardous ingredients.		Organic Solid		
			C127573	01/25/2006	Container Descr.:	4.7 fl. oz.	0.05		0.00
			C127574	01/25/2006	Container Descr.:	4.7 fl. oz.	0.05		0.00
			Q08803:16	01/12/2006	eutector flux 190 contains: 10-30% zinc chloride, 30-60% potassium chloride, 30-60% sodium chloride, 15-40% lithium chloride, 5-10% lithium fluoride		Inorganic Solid		
			C127575	01/25/2006	Container Descr.:	8 fl. oz.	0.32		0.01
			Q08803:17	01/12/2006	Wipes + gloves contaminated with enamel inks + propylene glycol, ether, petroleum distillate, lead napthanate.		Organic Solid		
			C127576	01/25/2006	Container Descr.:	1 gal	22.68		0.13
			Q08803:18	01/12/2006	Methyl alcohol (unused)		Organic Liquid		
		Item is located outside B-25 in flam locker.	C127577	01/25/2006	Container Descr.:	5 gal		18.93	0.67
			C127578	01/25/2006	Container Descr.:	5 gal		18.93	0.67
					methyl ethyl ketone (unused)				

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Hazardous Waste

Division: EG - Engineering

Bldg	Location	Generator	Requisition/Line Container Id	Receipt Date HWHF Date	Constituent Description		Weight K	Volume L	Cu. ft.
025	0174	Bartolo,Rodolfo U (ROPS21)	Q08803:19	01/12/2006			Organic Liquid		
			C127579	01/25/2006	Container Descr.:	1 gal		3.79	0.13
			Q08803:20	01/12/2006	Isopropyl alcohol		Organic Liquid		
			C127580	01/25/2006	Container Descr.:	5 gal		18.93	0.67
			Q08803:21	01/12/2006	1,1,1 Trichloroethane (used)		Organic Liquid		
			C127581	01/25/2006	Container Descr.:	5 gal		18.93	0.67
			C127582	01/25/2006	Container Descr.:	2.5 gal		7.57	0.27
			Q09514:1	07/13/2006	oil based white paint contains petroleum distillates (xylene and toluene).		Organic Liquid		
			C132006	08/23/2006	Container Descr.:	1 pt		0.47	0.02
			Q09514:2	07/13/2006	oil base dark blue paint contains petroleum distillates (xylene and toluene)		Organic Liquid		
			C132007	08/23/2006	Container Descr.:	1 pt		0.47	0.02
			Q09514:3	07/13/2006	Epon resin 826: contains: bisphenol A/ Epichlorohydrin based epoxy resin 100%		Organic Liquid		
			C132008	08/23/2006	Container Descr.:	.5 pt		0.24	0.01
			Q09514:4	07/13/2006	versamid 140 contains: triethylenetetramine		Organic Liquid		
			C132009	08/23/2006	Container Descr.:	1 qt		0.95	0.03
			Q09514:6	07/13/2006	XD 4600 epoxy resin		Organic Solid		

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Hazardous Waste

Division: EG - Engineering

Bldg	Location	Generator	Requisition/Line Container Id	Receipt Date HWHF Date	Constituent Description				Weight K	Volume L	Cu. ft.
025	0174	Bartolo,Rodolfo U (ROPS21)	C132011	08/23/2006	Container Descr.:	500 ml	lbs		0.27		0.02
			C132012	08/23/2006	Container Descr.:	500 ml	lbs		0.27		0.02
			C132013	08/23/2006	Container Descr.:	500 ml	lbs		0.27		0.02
			C132014	08/23/2006	Container Descr.:	500 ml	lbs		0.27		0.02
			C132015	08/23/2006	Container Descr.:	500 ml	lbs		0.27		0.02
			Q09514:7	07/13/2006	epoxy resin				Organic Liquid		
			C132016	08/23/2006	Container Descr.:	500 ml				0.40	0.01
			Q09514:9	07/13/2006	carbon tetrachloride				Organic Liquid		
			C132018	08/23/2006	Container Descr.:	1 liters				0.50	0.02
			Q09514:10	07/13/2006	ethylenediaminetetracetic acid				Organic Solid		
			C132019	08/23/2006	Container Descr.:	1 liters	lb		0.91		0.03
			C132020	08/23/2006	Container Descr.:	1 liters	lb		0.91		0.03
			Q09514:11	07/13/2006	Disodium ethylenedinitrilo tetraacetate (cas# 6381-92-6)				Organic Solid		
			C132021	08/23/2006	Container Descr.:	500 ml	lbs		0.11		0.00
			Q09514:12	07/13/2006	Quality Adhesives contains: ethyl cyanoacrylate 80-100%, hydroquinone 0.1-0.5%, poly (methyl methacrylate) 3-5%				Organic Solid		
			C132022	08/23/2006	Container Descr.:	1 qt			0.32		0.02
			Q09514:13	07/13/2006	50% molybdenum disulfide, 50% lubricating oil				Organic Liquid		
			C132023	08/23/2006	Container Descr.:	1 qt				0.95	0.03

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Hazardous Waste

Division: EG - Engineering

Bldg	Location	Generator	Requisition/Line Container Id	Receipt Date HWHF Date	Constituent Description	Weight K	Volume L	Cu. ft.
025	0174	Bartolo,Rodolfo U (ROPS21)	Q09514:14	07/13/2006	Dykem steel blue layout fluid contains: 30-50% ethanol, 10-30% N-butyl acetate, 1-10% n-butanol, 1-5% nitrocellulose, 1-5% isopropanol, 1-5% N-propyl acetate	Organic Liquid		
			C132024	08/23/2006	Container Descr.: 12 fl. oz.		0.15	0.01
			Q09514:15	07/13/2006	oil + grease	Organic Liquid		
			C132025	08/23/2006	Container Descr.: 1 pt		0.47	0.02
			Q09514:16	07/13/2006	Multicore Solders 0360 contains: 30-35% methanol, 30-35% isopropyl alcohol, 35-40% rosin	Organic Liquid		
			C132026	08/23/2006	Container Descr.: 1 liters		1.00	0.04
			Q09514:17	07/13/2006	vacuum pump oil TKO-19 contains: 100% refined petroleum oil	Organic Liquid		
			C132027	08/23/2006	Container Descr.: 1 gal		1.89	0.07
			Q09514:18	07/13/2006	Fluid Flex Coolant contains: 5% ethanol, 5% hexylene glycol, 5% monoethanolamine, 5% triethanolamine, 5% amid mixture, 10% amine borate mixture, and balance with non hazardous ingredients.	Organic Liquid		
			C132028	08/23/2006	Container Descr.: 100 ml		0.10	0.00
			Q09514:19	07/13/2006	lapping compound Yellow Label Co contains 30-50% ground silica abrasive, 20-50% barium sulfate, 5-25% detergent	Inorganic Solid		
			C132029	08/23/2006	Container Descr.: 1 pt lbs	0.05		0.00
			Q09514:20	07/13/2006	lapping compound green label 111 Fine contains 10-25% ground silica abrasive, 50-70% ground natural abrasive, 10-20% barium sulfate, 5-20% detergent.	Inorganic Solid		

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Hazardous Waste

Division: EG - Engineering

Bldg	Location	Generator	Requisition/Line Container Id	Receipt Date HWHF Date	Constituent Description			Weight K	Volume L	Cu. ft.
025	0174	Bartolo,Rodolfo U (ROPS21)								
			C132030	08/23/2006	Container Descr.:	1 pt	lbs	0.45		0.02
			Q09514:21	07/13/2006	quinhydrone			Organic Solid		
			C132031	08/23/2006	Container Descr.:	60 ml	grams	0.05		0.00
			Q09514:22	07/13/2006	spent liquid scintillator contains: toluene			Organic Liquid		
			C132032	08/23/2006	Container Descr.:	1 gal			3.79	0.13
			Q09514:23	07/13/2006	Enamel paint contains: petroleum distillates			Organic Liquid		
			C132033	08/23/2006	Container Descr.:	1 qt			0.95	0.03
			Q09514:24	07/13/2006	universal water blend paint contains: 22% dimethyl ether and balance with non hazardous ingredients.			Organic Liquid		
			C132034	08/23/2006	Container Descr.:	14 fl. oz.	Aerosol		0.41	0.01
			C132694	08/23/2006	Container Descr.:	14 fl. oz.	Aerosol		0.41	0.01
			C132695	08/23/2006	Container Descr.:	14 fl. oz.	Aerosol		0.41	0.01
			C132696	08/23/2006	Container Descr.:	14 fl. oz.	Aerosol		0.41	0.01
			C132697	08/23/2006	Container Descr.:	14 fl. oz.	Aerosol		0.41	0.01
			C132698	08/23/2006	Container Descr.:	14 fl. oz.	Aerosol		0.41	0.01
			C132699	08/23/2006	Container Descr.:	14 fl. oz.	Aerosol		0.41	0.01
			C132700	08/23/2006	Container Descr.:	14 fl. oz.	Aerosol		0.41	0.01
			C132701	08/23/2006	Container Descr.:	14 fl. oz.	Aerosol		0.41	0.01
			C132702	08/23/2006	Container Descr.:	14 fl. oz.	Aerosol		0.41	0.01
			C132703	08/23/2006	Container Descr.:	14 fl. oz.	Aerosol		0.41	0.01
			C132704	08/23/2006	Container Descr.:	14 fl. oz.	Aerosol		0.41	0.01

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Hazardous Waste

Division: EG - Engineering

Bldg	Location	Generator	Requisition/Line Container Id	Receipt Date HWHF Date	Constituent Description				Weight K	Volume L	Cu. ft.
025	0174	Bartolo,Rodolfo U (ROPS21)	C132705	08/23/2006		Container Descr.:	14 fl. oz.	Aerosol		0.41	0.01
			C132706	08/23/2006		Container Descr.:	14 fl. oz.	Aerosol		0.41	0.01
			C132707	08/23/2006		Container Descr.:	14 fl. oz.	Aerosol		0.41	0.01
			C132708	08/23/2006		Container Descr.:	14 fl. oz.	Aerosol		0.41	0.01
			C132709	08/23/2006		Container Descr.:	14 fl. oz.	Aerosol		0.41	0.01
			C132710	08/23/2006		Container Descr.:	14 fl. oz.	Aerosol		0.41	0.01
			C132711	08/23/2006		Container Descr.:	14 fl. oz.	Aerosol		0.41	0.01
			C132712	08/23/2006		Container Descr.:	14 fl. oz.	Aerosol		0.41	0.01
			C132713	08/23/2006		Container Descr.:	14 fl. oz.	Aerosol		0.41	0.01
			C132714	08/23/2006		Container Descr.:	14 fl. oz.	Aerosol		0.41	0.01
			C132715	08/23/2006		Container Descr.:	14 fl. oz.	Aerosol		0.41	0.01
			Q09514:25	07/13/2006	urethane modified industrial enamel glass-oil paint contains: alkyd resin, naphtha, sodium potassium aluminum silicate, soybean oil, cobalt neodecanoate, methyl ethyl ketoxime, ethyl benzene. notee: manufacturer label only				Organic Liquid		
			C132035	08/23/2006		Container Descr.:	1 gal			3.79	0.13
			C132036	08/23/2006		Container Descr.:	1 gal			3.79	0.13
			Q09514:26	07/13/2006	PTH-R additive contains: <1% formaldehyde, 5-10 polyethylene glycol >90% inert liquid, halide salts, an organic indicator, a mineral acid, an in organic copper salt <3%				Organic Liquid		
			C132037	08/23/2006		Container Descr.:	5 gal			18.93	0.67
			Q09514:27	07/13/2006	ferrous sulfate 7-hydrate granular				Inorganic Solid		
			C132038	08/23/2006		Container Descr.:	2.5 gal	kg	4.54		0.33
	0174	Bartolo,Rodolfo U	Q09902:1	10/19/2006	Ferric chloride aqueous solution (spent) with heavy metals, copper, nickel, aluminum, and stainless steel; 1% hydrochloric acid, 39% ferric chloride, 1.3 ppm beryllium, 400 ppm chromium, 13 ppm				Inorganic Liquid		

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Hazardous Waste

Division: EG - Engineering

Bldg	Location	Generator	Requisition/Line Container Id	Receipt Date HWHF Date	Constituent Description		Weight K	Volume L	Cu. ft.
025	0174 Outside Bldg 25 acid locker	Bartolo,Rodolfo U (VELR05)			lead, 175 ppm nickel, 7 ppm selenium, 8 ppm thallium				
			C134515	10/20/2006	Container Descr.:	55 gal		208.18	7.35
			C134516	10/20/2006	Container Descr.:	55 gal		208.18	7.35
			C134517	10/20/2006	Container Descr.:	55 gal		208.18	7.35
			C134518	10/20/2006	Container Descr.:	55 gal		208.18	7.35
			C134519	10/20/2006	Container Descr.:	55 gal		208.18	7.35
			Q09902:2	10/19/2006	19 thermometers in a bag with mercury		Inorganic Solid		
	Outside Bldg 25 acid locker								
			C134520	10/20/2006	Container Descr.:	1 gal	1.81		0.00
	Room 100	Bartolo,Rodolfo U (VELR05)	Q08925:1	02/13/2006	Sludge with heavy metals: copper, nickel, zinc, tin, lead		Inorganic Solid		
			C128445	02/22/2006	Container Descr.:	12.2 gal	22.68		1.63
					Building Totals:	Container Count: 120	183.42	1248.03	62.98
077	0107 Room 77R - Outside	Bartolo,Rodolfo U (VELR05)	Q09175:1	04/24/2006	D-4000 riston developer contains: 30-60% potassium carbonate and 40-70% water with trace <1% Riston dry film resist (benzophenone, aliphatic hydrocarbons, butanol, 2-ethylhexyl acrylate, methacrylic acid & methacrylates).		Inorganic Liquid		
			C129981	05/05/2006	Container Descr.:	55 gal		189.25	6.69
					Building Totals:	Container Count: 1		189.25	6.69
					Division Totals:	Container Count: 121	183.42	1437.28	69.66

FTU

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Hazardous & Rad/Mixed Waste Quantities by Division

Date Range: 01/01/2006 to 01/01/2007

Hazardous Waste

Division: EH - Environment, Health & Safety

Bldg	Location	Generator	Requisition/Line Container Id	Receipt Date HWHF Date	Constituent Description	Weight K	Volume L	Cu. ft.
025	0150	Bartolo,Rodolfo U (307240)	Q08911:1	02/08/2006	2 gray 15" X 36" metal shelves contaminated with less than 2 ug/cm2 beryllium	Inorganic Solid		
			C128393	02/22/2006	Container Descr.: 50 gal	4.54		2.67
					Building Totals: Container Count: 1	4.54		2.67
					Division Totals: Container Count: 1	4.54		2.67
			Total Hazardous Waste:		Container Count: 122	187.96	1437.28	72.34
			Total Rad & Mixed:	Total Activity:	Non Tritium	0.00	0.00	0.00

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Process Description
Ultra High Vacuum Cleaning Facility &
Fixed Treatment Unit FTU 006
LBNL - Building 77

The Ultra High Vacuum Cleaning Facility (UHVCF) at building 77 conducts treatment of aluminum and non-aluminum metal parts through cleaning and/or application of a satin finish (desmut bath and rinse). An estimated maximum of 10,000 gallons/month of wastewater associated with these various processes are treated in the Fixed Treatment Unit, FTU 006. The wastewater is generated from rinse tanks and process equipment pieces within the UHVCF.

An acid waste is generated by six flow-through rinse tanks. The effluent from the rinse tanks flows to a dedicated acid sump and then is pumped to FTU 006 for treatment. These rinse tanks rinse parts which come from the following baths:

- chromic/nitric acid bright dip bath
- sulfuric/nitric acid bright dip bath
- hydrochloric acid bath (pickling)
- phosphoric/sulfuric acid bath (stainless steel electropolish)
- sodium bisulfate bath (oxide remover, desmut)
- hydrofluoric acid bath
- electroless nickel bath
- blue anodize bath
- black anodize bath
- iridite 14-2 bath
- nickel acetate seal bath
- sulfuric acid anodize bath
- ferric chloride etch rinse water (Chemcut Etcher)

An alkaline waste, typically below pH 12 at the point of generation, is generated from two flow-through rinse tanks. The effluent from the rinse tanks flows to a dedicated caustic sump and then is pumped to FTU 006 for treatment. These rinse tanks rinse parts which come from the following baths:

- sodium hydroxide bath (caustic etch)
- sodium hydroxide/acetylsalicylic acid/zinc oxide bath (B.N. cleaner)

Additional non-routine bench top processes may also contribute to the acid/metals waste stream. A non-routine bench top process could involve nickel plating a small part in a 250 milliliter beaker and then dipping the part in a rinse water bath (which drains to the acid sump) for cleaning. Another non-routine bench top process could involve brush plating a small area (e.g. 4 square inches) of a large part to repair that part. This large part would then be dipped into a rinse water bath (which drains to the acid sump) for cleaning.

Process Description
Ultra High Vacuum Cleaning Facility &
Fixed Treatment Unit FTU 006
LBNL - Building 77

The Fixed Treatment Unit, FTU 006, provides the following treatment to rinse water:

- Sodium metabisulfite and sodium hydroxide are added automatically for hexavalent chromium reduction.
- Neutralization of the wastewater occurs through automatic pH adjustment.
- Metals removal occurs through flocculation with a polyelectrolyte and clarification.
- Sludge is dewatered in a filter press.
- Filter cake is dried in a low temperature, closed loop air handling system (J-Mate Batch Dryer).

The Fixed Treatment Unit, FTU 006, treats two waste streams coming from the B77 UHVCF. One waste stream contains metals, hexavalent chromium, and typically has a pH below 2 (acid sump). The second waste stream contains a mixture of bases (caustic sump).

Tank Three, an acid rinse storage tank, receives incoming acid rinse water from the B77 UHVCF acid sump. The acid wastewater from Tank Three flows to Tank Five, where the acid waste is neutralized with sodium hydroxide and hexavalent chromium is reduced with the addition of sodium metabisulfite. Tank Four receives incoming alkaline waste from the B77 caustic sump. The alkaline wastewater from Tank Four flows to Tank Six, where the alkaline wastewater is neutralized with sulfuric acid.

After pH adjustment, the wastewater from Tank Five flows into Tank Six and Tank Six flows into Tank Seven, a flocculation tank, where, with the addition of a flocculating agent and a polyelectrolyte coagulant, the dissolved metals begin to form a flocculent. The wastewater/flocculent flows into Tank Eight, a clarifier, where the flocculent is thickened and removed. The removed flocculent or sludge flows to a filter press, where the sludge is dewatered. The water from the filter press is pumped back to Tank Four, where the treatment process begins, and treated to remove any metals.

The treated wastewater exits Tank Eight and flows to Tank Nine, an effluent storage tank. The treatment system has been designed to meet East Bay Municipal Utility District (EBMUD) discharge limits once the treated wastewater leaves Tank Nine. However, a sand filter, which will reduce metal concentration further, has been placed between Tank Nine and the point of sewer discharge. For maintenance purposes, the sand filter may be bypassed if necessary. The sand filter is the first piece of equipment required for a future recycling system that will recycle all wastewater back to the B77 UHVCF. The sand filter is backwashed into Tank 10 during B77 UHVCF off hours. The backwash from Tank Ten is pumped to Tank Three, where the acid/metal treatment process begins, and is treated to remove any metals.

To ensure contaminant levels do not exceed permissible levels established in EBMUD's discharge requirements, wastewater discharged to EBMUD is periodically sampled and analyzed according to a schedule determined annually upon EBMUD permit renewal, currently four times per year.

Process Description
Ultra High Vacuum Cleaning Facility &
Fixed Treatment Unit FTU 006
LBNL - Building 77

This treatment process generates a sludge which contains metals. The sludge is dewatered in a filter press. The resulting filter cake is then put in a low heat batch dryer (US Filter, J-Mate, model J-203) to further remove water. The dried filter cake, a residual hazardous waste, typically contains cadmium, chromium, and lead. The filter cake is collected in a 55-gallon drum for transportation. The waste drum of filter cake is picked up by Waste Management staff and taken to the Hazardous Waste Handling Facility (HWHF). The filter cake waste is stored at the HWHF until analytical test results are received to fully characterize the waste. Then the waste drum is prepared for shipment off-site by Waste Management staff so that the waste may undergo further treatment. Shipment off-site is by a registered hazardous waste hauler. An estimated maximum of 200 pounds of filter cake is generated per year.

EBMUD

APPLICANT BUSINESS NAME Lawrence Berkeley National Lab
Building 77

WASTEWATER DISCHARGE PERMIT
Terms and Conditions

WATER BALANCE/STRENGTH SUMMARY

The information on this form describes the volume, source, and strength of wastewater discharged to the community sewer. Instructions are on the back of this form.	Permit Number 50238911

WATER USE AND WASTEWATER DISCHARGE BALANCE

Units expressed in: gallons per calendar day or ☒ gallons per working day (Number of working days per year 108*)
* 108 days in calendar 2006

Water Use	Source			Wastewater Discharge to each Side Sewer					Water Diverted	Code[2]
	EBMUD	Other	Code[1]	No. 2	No.	No.	No.	No.		
Sanitary										
Processes	370			370					-0-	
Product										
Boiler										
Cooling										
Washing										
Irrigation										
Sub-total	370			370					-0-	
Total	All Sources	370		All Side Sewers _____			All Side Sewers + Water Diverted		370	
Maximum Daily Discharge (gallons)										

METERED WATER

Water Meter Number	Code[3]	Percent Discharge to each Side Sewer					Total % Discharge
70027448 *	E	100					
0004710 *	E						
* Each supply meter supplies the entire system ensuring redundancy in the event of							
failure. Hence, percent discharge to each side sewer for each supply meter can							
not be determined.							

[1]Other / Code: Compute the average gallon per day water use from non-EBMUD sources and enter the value in the Other "Sub-total" box. Do not include sources that discharge only to the stormdrain. Allocate the subtotal value to each type of water use. Enter the code(s) that identifies the source water:

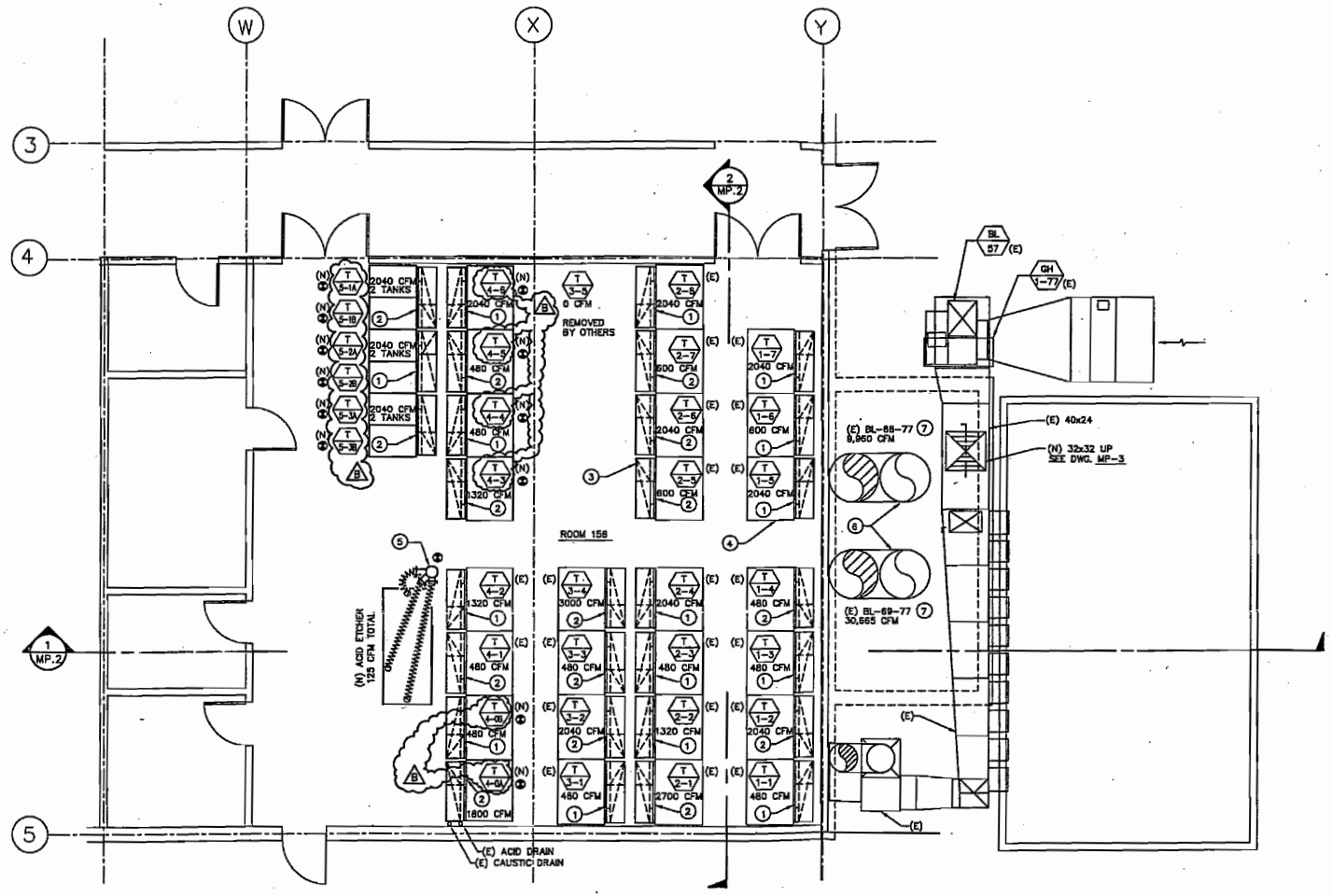
A= Well Water / Groundwater *B= Stormwater* *C= Reclaimed Water* *D= Other (describe)*

[2]Water Diverted/Code: Enter the diverted volume for each type of water use. Enter the code(s) that identifies the diversion:

A= Product *B= Evaporation* *C= Irrigation* *D= Creek/Bay* *E= Rail, Truck, Vessel* *F= Other (describe)*

[3]Metered Water Code(s): E= EBMUD Meter P= Private Meter

			compiled by R. Fox	
	B77 FTU 006		from info provided by	
	CALENDAR YEAR 2006		Al Harcourt & Dennis Paiva	
		Monthly usage (gallons)		
January 2006		2097		
February		2726		
March		4812		
April		3347		
May		3346		
June		4895		
July		2526		
August		4402		
September		1836		
October		3771		
November		3666		
December		2485		
	SUM=	39909		
	MEAN=	3326		
	STD DEV=	1026		
	MAX=	4895		
	MIN=	1836		
Gallons / Working Day = Total Gallons for CY06 / Total Working Days in CY06				
Total gallons for CY 06 = 39909 gallons				
Total working days in CY06 = 108 days				
Gallons / Working Day = 39909 / 108 =		**370**		



1 FLOOR PLAN
1/4" = 1'-0"

SHEET NOTES:

1. TANK EXHAUST PLENUM SEE DETAILS 1 & 5/MP-6. BALANCE EXHAUST CFM AS SHOWN IN THIS DRAWING.
2. TANK EXHAUST PLENUM SIMILAR TO DETAIL 1 & 5/MP-6. DUCT CONNECTION AND PIPING CHASE ON OPPOSITE SIDE. BALANCE EXHAUST CFM AS SHOWN IN THIS DRAWING.
3. 20"x12" EXHAUST COLLAR CONNECT TO FUME EXHAUST BELOW. SEE DRAWING M-1.
4. CHEMICAL/RINSE TANK SEE DWG. MP-5 FOR REQUIREMENTS.
5. NEW 10"ø UP FROM EXHAUST DUCT BELOW FLOOR GRATING. PROVIDE SUPPORT FOR 10"" DUCT. CONNECT TO 3 AIR OUTLET PORTS ON THE ETCHER.
6. EXISTING EXHAUST BLOWER DUCTWORK.
7. RE-SHEAVE BLOWER AS NECESSARY TO OBTAIN THE REQUIRED EXHAUST AIR FLOW.

REGISTERED PROFESSIONAL ENGINEER — MECHANICAL — No. 19539 — Exp. 9-30-2007 — STATE OF CALIFORNIA

TITLE III

AS-BUILT
11/07/2005

REVISION NUMBER	DRAWN BY	CHECKED BY	APPR'D BY	DATE	REMARKS
B	RZT	MCD	MCD	11/07/05	ASBUILT - UPDATED TANK NUMBERS
A	LKC	MCD	MCD	05/05/05	EXPANSION OF EXHAUST SYSTEM

77 ROOM 156
UHVC FACILITY SAFETY UPGRADE
MECHANICAL FLOOR LEVEL PLAN - NEW

UNIVERSITY OF CALIFORNIA
LAWRENCE BERKELEY NATIONAL LABORATORY
FACILITIES DIVISION

DRAWN BY J.N.M.	DATE 3/25/94
CHECKED BY N.S.	3/25/94
APPROVED BY	/ /94
CAD FILE PATH 00020227	
SCALE 1/4" = 1'-0"	
DRAWING NO. 4B77M215B	SHEET M-2 OF
PROJECT NO. FD5113	

Tank Schedule Building 77 Room 156 UHVC Facility - February 2007				
Tank#	Description	Tank Material	Lined	Operating Temperature
1-1	Rinse I.W.	Poly-pro		
1-2	Electro-Polish S.S	Poly-pro		126
1-3	Rinse I.W.	Poly-pro		
1-4	Hydrochloric Acid	Poly-pro		
1-5	909 Cleaner	Poly-pro	S.S	160
1-6	Rinse D.I.	Poly-pro		
1-7	Mirachem Cleaner	Poly-pro	S.S	145
2-1	Deoxizder/Desmutter	Poly-pro		
2-2	Rinse I.W.	Poly-pro		
2-3	Rinse I.W.	Poly-pro		
2-4	H.F. Acid	Poly-pro		
2-5	Rinse I.W.	Poly-pro		
2-6	Caustic Etch	Poly-pro	S.S	150
2-7	Rinse I.W.	Poly-pro		
2-8	BN Cleaner	Poly-pro	S.S	150
3-1	Rinse I.W.	Poly-pro		
3-2	Sulfuric & Nitric acid	Poly-pro		
3-3	Rinse I.W.	Poly-pro		
3-4	Brite Dip Chromic Acid	Poly-pro		
3-5	Rinse D.I.	Poly-pro		removed 2005
4-0A	Spray Rinse D.I.	Poly-pro		
4-0B	Iridite 14-2	S.S.	Poly-pro	
4-1	Rinse D.I.	Poly-pro		
4-2	Rinse Hot D.I	Poly-pro		165
4-3	Spray Rinse D.I.	S.S.		
4-4	Nickel Acetate Seal	S.S.		160-170
4-5	Spray Rinse D.I.	S.S.		
4-6	Sulfuric Acid Anodize	S.S.	Poly-pro	35-75
5-1A	Electroless Nickel	S.S.	Poly-pro	175-180
5-1B	Spray Rinse D.I.	S.S.		
5-2A	Blue Anodize Dye	S.S.		140-150
5-2B	Spray Rinse D.I.	S.S.		
5-3A	Spray Rinse D.I.	S.S.		
5-3B	Black Anodize Dye	S.S.		140-150

Building 77 WWTU .006 Tanks 8/9/05

T5A- Chrome Treatment- 660 gal.

T5B- Chrome Treatment- 660 gal.

T6— Neutralizing Tank- 660 gal.

T7—Flocculating Tank- 230 gal.

T8—Clarifier Tank-3,300 gal.

T9- - Effluent Storage- 2,000 gal.

T10- -Final Effluent- 1,500 gal.

T3—Caustic Rinse Tank- 1,000 gal.

T16-Caustic Rinse Overflow- 700 gal.

T4-Acid Rinse Tank- 1,000 gal.

T18-Acid Rinse Overflow- 700 gal.

T11-Chrome reducer- 200 gal. (sodium metabisulfate)

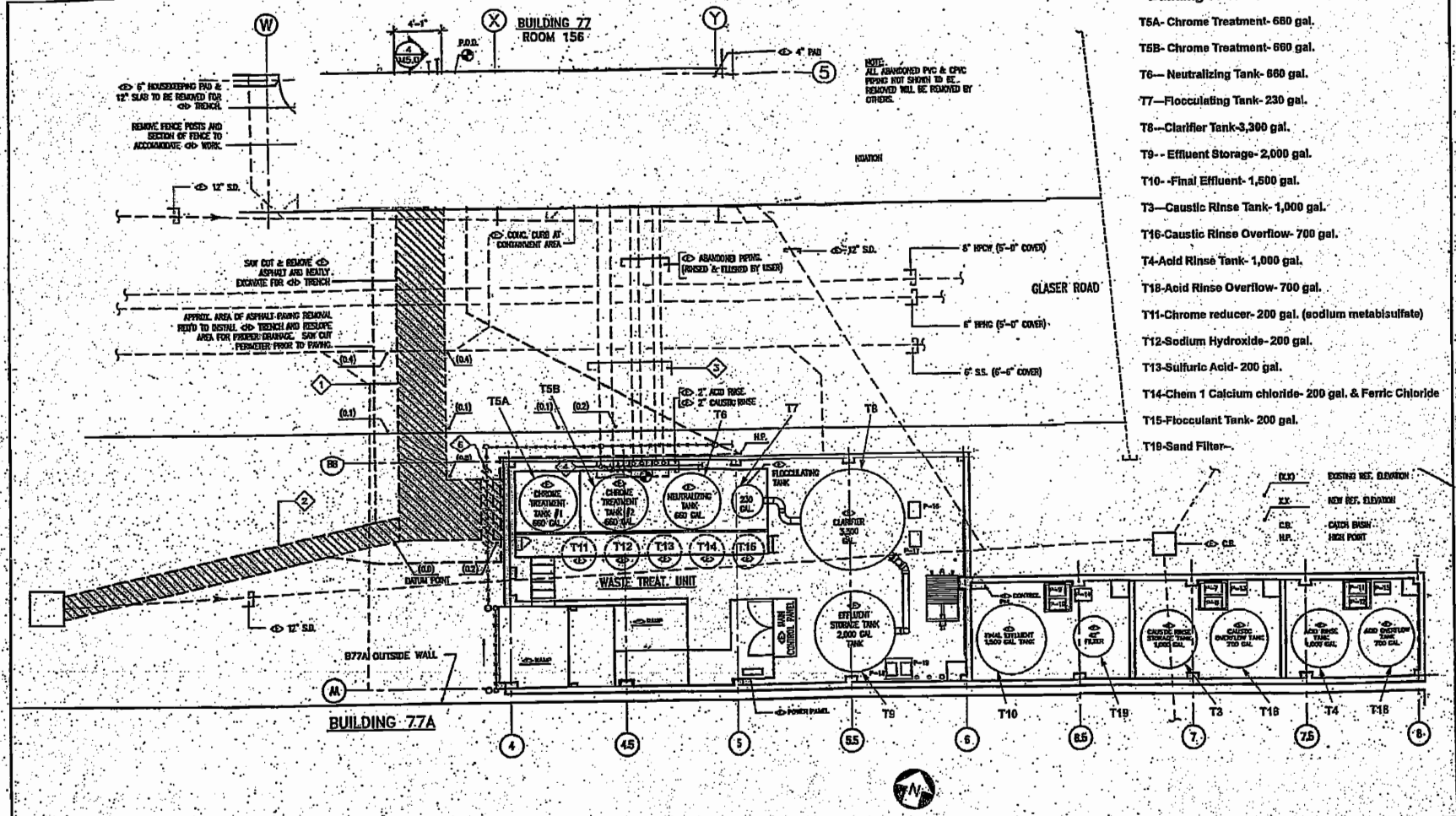
T12-Sodium Hydroxide- 200 gal.

T13-Sulfuric Acid- 200 gal.

T14-Chem 1 Calcium chloride- 200 gal. & Ferric Chloride

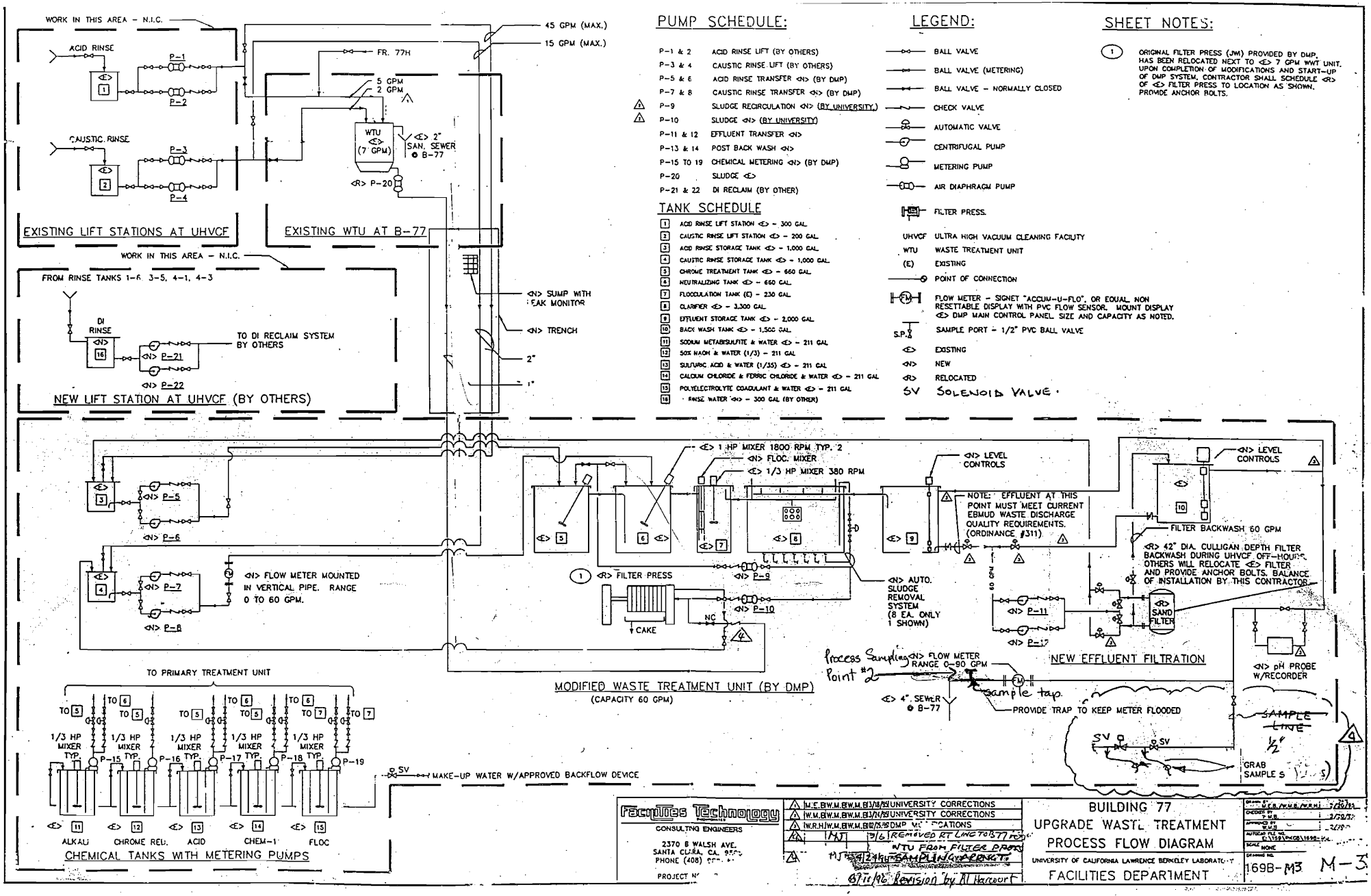
T15-Flocculant Tank- 200 gal.

T19-Sand Filter—.



BUILDING 77

UNIVERSITY OF CALIFORNIA
LAWRENCE BERKELEY NATIONAL LABORATORY



PUMP SCHEDULE:

P-1 & 2	ACID RINSE LIFT (BY OTHERS)
P-3 & 4	CAUSTIC RINSE LIFT (BY OTHERS)
P-5 & 6	ACID RINSE TRANSFER <N> (BY DMP)
P-7 & 8	CAUSTIC RINSE TRANSFER <N> (BY DMP)
4 P-9	SLUDGE RECIRCULATION <N> (BY UNIVERSITY)
4 P-10	SLUDGE <N> (BY UNIVERSITY)
P-11 & 12	EFFLUENT TRANSFER <N>
P-13 & 14	POST BACK WASH <N>
P-15 TO 19	CHEMICAL METERING <N> (BY DMP)
P-20	SLUDGE <E>
P-21 & 22	DI RECLAIM (BY OTHER)

TANK SCHEDULE

1	ACID RINSE LIFT STATION <E> - 300 GAL.
2	CAUSTIC RINSE LIFT STATION <E> - 200 GAL.
3	ACID RINSE STORAGE TANK <E> - 1,000 GAL.
4	CAUSTIC RINSE STORAGE TANK <E> - 1,000 GAL.
5	CHROME TREATMENT TANK <E> - 660 GAL.
6	NEUTRALIZING TANK <E> - 660 GAL.
7	FLOCCULATION TANK (E) - 230 GAL.
8	CLARIFIER <E> - 3,300 GAL.
9	EFFLUENT STORAGE TANK <E> - 2,000 GAL.
10	BACK WASH TANK <E> - 1,500 GAL.
11	SODIUM METABISULFITE & WATER <E> - 211 GAL.
12	50% NAOH & WATER (1/3) - 211 GAL.
13	SULFURIC ACID & WATER (1/35) <E> - 211 GAL.
14	CALCIUM CHLORIDE & FERRIC CHLORIDE & WATER <E> - 211 GAL.
15	POLYELECTROLYTE COAGULANT & WATER <E> - 211 GAL.
16	RINSE WATER <N> - 300 GAL (BY OTHER)

LEGEND:

- BALL VALVE
- BALL VALVE (METERING)
- BALL VALVE - NORMALLY CLOSED
- CHECK VALVE
- AUTOMATIC VALVE
- CENTRIFUGAL PUMP
- METERING PUMP
- AIR DIAPHRAGM PUMP
- FILTER PRESS
- UHVCF ULTRA HIGH VACUUM CLEANING FACILITY
- WTU WASTE TREATMENT UNIT
- (E) EXISTING
- POINT OF CONNECTION
- FM FLOW METER - SIGNET "ACCUM-U-FLO", OR EQUAL. NON RESETTABLE DISPLAY WITH PVC FLOW SENSOR. MOUNT DISPLAY <E> DMP MAIN CONTROL PANEL. SIZE AND CAPACITY AS NOTED.
- S.P. SAMPLE PORT - 1/2" PVC BALL VALVE
- <E> EXISTING
- <N> NEW
- <R> RELOCATED
- SV SOLENOID VALVE.

SHEET NOTES:

1. ORIGINAL FILTER PRESS (JM) PROVIDED BY DMP, HAS BEEN RELOCATED NEXT TO <E> 7 GPM WWT UNIT. UPON COMPLETION OF MODIFICATIONS AND START-UP OF DMP SYSTEM, CONTRACTOR SHALL SCHEDULE <R> OF <E> FILTER PRESS TO LOCATION AS SHOWN. PROVIDE ANCHOR BOLTS.

FacilTies Technology
CONSULTING ENGINEERS
2370 B WALSH AVE.
SANTA CLARA, CA. 95051
PHONE (408) 727-[illegible]
PROJECT N[illegible]

4	W.E.B. W.M.B. W.M.B. 8/1/95	UNIVERSITY CORRECTIONS
3	W.M.B. W.M.B. W.M.B. 8/1/95	UNIVERSITY CORRECTIONS
2	W.R.H. W.M.B. W.M.B. 8/2/95	DMP MODIFICATIONS
1	[illegible]	3/6 REMOVED RT LINE TO B77 [illegible]
		WTU FROM FILTER PRESS
		2/4/97 SAMPLING [illegible]
		8/11/96 Revision by Al Harcourt

BUILDING 77
UPGRADE WASTE TREATMENT
PROCESS FLOW DIAGRAM
UNIVERSITY OF CALIFORNIA LAWRENCE BERKELEY LABORATORY
FACILITIES DEPARTMENT

DRAWN BY	W.E.B./W.M.B./W.R.H.	3/20/95
CHECKED BY	T.W.B.	3/20/95
APPROVED BY	W.M.B.	3/20/95
AUTOCAD FILE NO.	C:\169B\MCCB\169B-PFD	
SCALE	NONE	
DRAWING NO.	169B-M3	M-3

Process Generated Waste
Calendar Year 2006

for

Building 77
Ultra High Vacuum Cleaning Facility

---> ShoeBox --->

SBR546

Hazardous & Rad/Mixed Waste Quantities by Division

01/24/2007 17:01

Number of Pages: 6

Start Date: 01-JAN-06 End Date: 01-JAN-07

Date Option: P

Select Haz: Y

Select Mixed: Y

Select Rad: Y

Select Non-Haz: Y

Buildings:

Rooms:

Generators: '361338' Al Hancount

Divisions:

Accounts:

Include ReqLine with this Constituent Description:

Physical Forms:

Treatability Groups:

Inventory Only? N

Chemical Constituents:

Isotopes:

HW Codes:

Weight Unit: K Volume Unit: L

Hazardous & Rad/Mixed Waste Quantities by Division

Date Range: 01/01/2006 to 01/01/2007

Hazardous Waste

Division: AF - Accelerator & Fusion Research

Bldg	Location	Generator	Requisition/Line Container Id	Receipt Date HWHF Date	Constituent Description	Weight K	Volume L	Cu. ft.
077A	0101	Harcourt,Albert B (Z41701)	Q08913:1	02/08/2006	Electro-polish aqueous solution, sluge & metals (could contain chromium, cadmium, lead, and UHC-nickel), phosphoric acid (<10%).	Inorganic Liquid		
			C128390	02/22/2006	Container Descr.: 15 gal		56.78	2.01
			Q08913:2	02/08/2006	Chromic acid rinse water contains <5% chromic acid, < 5% nitric acid, <1% ammonium bifluoride and with UHC-lead	Inorganic Liquid		
			C128391	02/22/2006	Container Descr.: 15 gal		37.85	1.34
			Q08913:3	02/08/2006	Nitric acid (< 10%) rinse water contains cadmium, chromium, lead with UHC-silver	Inorganic Liquid		
			C128392	02/22/2006	Container Descr.: 55 gal		94.63	3.34
			Q08924:1	02/13/2006	Copper,Wood,gloves contaminted with trace electro-polish (phosphoric & Sulfuric Acid)	Organic Solid		
			C128444	02/22/2006	Container Descr.: 3 cu. ft.	36.29		3.00
					Building Totals: Container Count: 4	36.29	189.25	9.69
					Division Totals: Container Count: 4	36.29	189.25	9.69

"Cu. ft." is calculated from the volume if it exists; otherwise, it is calculated from the weight. Caution!! When weights must be used, weights are converted to cu. ft. by multiplying the weight in pounds by 0.01602 (specific gravity of water). ShoeBox has no way of determining if this calculation makes sense for any particular waste. The user should examine the description or constituents for all waste with no recorded volume.

Hazardous Waste

Division: EG - Engineering

Bldg	Location	Generator	Requisition/Line Container Id	Receipt Date HWHF Date	Constituent Description	Weight K	Volume L	Cu. ft.
077	0156	Harcourt,Albert B (VDFC01)	Q08548:1	10/31/2005	Electropolish drag out (contains trace phosphoric acid with cadmium, chromium, lead, silver, and UHC-nickel) aqueous solution	Inorganic Liquid		
			C126402	01/27/2006	Container Descr.: 55 gal		208.18	7.35
			C126403	01/27/2006	Container Descr.: 55 gal		208.18	7.35
			C126404	01/27/2006	Container Descr.: 55 gal		208.18	7.35
			C126405	01/27/2006	Container Descr.: 55 gal		208.18	7.35
			C126406	01/27/2006	Container Descr.: 55 gal		208.18	7.35
					Building Totals: Container Count: 5		1040.88	36.77
077A	0101	Harcourt,Albert B (VDFC01)	Q09198:1	04/28/2006	Spent Dix 40 (10-20% chromic acid), water balance, and with UHC-nickel and antimony.	Inorganic Liquid		
			C130060	05/05/2006	Container Descr.: 55 gal		208.18	7.35
			Q09198:2	04/28/2006	Spent nitric acid (10-20%), water balance, and contains metals (chromium, cadmium, silver, and lead with UHC-nickel and beryllium.	Inorganic Liquid		
			C130061	05/05/2006	Container Descr.: 55 gal		208.18	7.35
			Q09205:1	05/02/2006	SPENT NITRIC ACID (10%) & SULFURIC ACID (10%) aqueous solution contains lead, cadmium, chromium, and silver with UHC-nickel.	Inorganic Liquid		
			C130090		Container Descr.: 55 gal		208.18	7.35
			C130091		Container Descr.: 55 gal		208.18	7.35
			C130092		Container Descr.: 55 gal		208.18	7.35
			C130093		Container Descr.: 55 gal		208.18	7.35
			Q09205:2	05/02/2006	SPENT 909 CLEANER (2-5% SODIUM META SILICATE) AQUEOUS SOLUTION CONTAINS HEAVY METALS(UHC-CADMIUM, CHROMIUM, LEAD, NICKEL, AND SILVER)AND	Inorganic Liquid		

"Cu. ft." is calculated from the volume if it exists; otherwise, it is calculated from the weight. Caution!! When weights must be used, weights are converted to cu. ft. by multiplying the weight in pounds by 0.01602 (specific gravity of water). ShoeBox has no way of determining if this calculation makes sense for any particular waste. The user should examine the description or constituents for all waste with no recorded volume.

Hazardous Waste

Division: EG - Engineering

Bldg	Location	Generator	Requisition/Line Container Id	Receipt Date HWHF Date	Constituent Description		Weight K	Volume L	Cu. ft.
077A	0101	Harcourt,Albert B (VDFC01)			BELOW RCRA LEVELS.				
			C130094		Container Descr.:	55 gal		208.18	7.35
			C130095		Container Descr.:	55 gal		208.18	7.35
			C130096		Container Descr.:	55 gal		208.18	7.35
			Q09260:1	05/12/2006	Spent Alumon D (contains sodium hydroxide (2.25%), sodium cyanide (.15%), copper cyanide (.15%), zinc oxide (.45%), and water balance.		Inorganic Liquid		
			C130415	06/05/2006	Container Descr.:	15 gal		26.50	0.94
	0103	Harcourt,Albert B (VDFC01)	Q08856:1	01/25/2006	Used Diala Oil		Organic Liquid		
			C128051	02/08/2006	Container Descr.:	55 gal		208.18	7.35
			Q08856:2	01/25/2006	Empty drum last contained Diala Oil.		Inorganic Solid		
			C128052	02/08/2006	Container Descr.:	55 gal	16.78		0.59
			Q08856:3	01/25/2006	Debris contaminated with Diala Oil. Plastic, Latex gloves and paper towels.		Organic Solid		
			C128053	02/08/2006	Container Descr.:	1 cu. ft.	4.08		1.00
			Q08858:1	01/25/2006	Cat litter contaminated with trace Diala Oil.		Organic Solid		
			C128054	02/08/2006	Container Descr.:	5 gal	16.33		0.67
			Q09078:1	03/27/2006	Spent nitric (10%) and hydrofluoric acid (10%) with lead, chromium, cadmium, silver and UHC-nickel in aqueous solution.		Inorganic Liquid		
			C129256		Container Descr.:	55 gal		208.18	7.35

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Hazardous Waste

Division: EG - Engineering

Bldg	Location	Generator	Requisition/Line Container Id	Receipt Date HWHF Date	Constituent Description	Weight K	Volume L	Cu. ft.
077A	0103	Harcourt,Albert B (VDFC01)	C129257		Container Descr.: 55 gal		208.18	7.35
			C129258		Container Descr.: 55 gal		208.18	7.35
			C129259		Container Descr.: 55 gal		208.18	7.35
			C129260		Container Descr.: 55 gal		208.18	7.35
			Q09375:1	06/08/2006	WASTE ELECTROPOLISH AQUEOUS SOLUTION (CONTAIN 10% PHOSPHORIC ACID, CHROMIUM, CADMIUM LEAD AND, WITH UHC-NICKEL, LEAD, and SILVER)	Inorganic Liquid		
			C131061	07/07/2006	Container Descr.: 55 gal		208.18	7.35
					Building Totals: Container Count: 20	37.20	3357.30	120.85
					Division Totals: Container Count: 25	37.20	4398.17	157.62

"Cu. ft." is calculated from the volume if it exists; otherwise, it is calculated from the weight. Caution!! When weights must be used, weights are converted to cu. ft. by multiplying the weight in pounds by 0.01602 (specific gravity of water). ShoeBox has no way of determining if this calculation makes sense for any particular waste. The user should examine the description or constituents for all waste with no recorded volume.

Hazardous & Rad/Mixed Waste Quantities by Division

Date Range: 01/01/2006 to 01/01/2007

Hazardous Waste

Division: NS - Nuclear Science

Bldg	Location	Generator	Requisition/Line Container Id	Receipt Date HWHF Date	Constituent Description	Weight K	Volume L	Cu. ft.
077A	0101	Harcourt,Albert B (N88MNT)	Q08928:1	02/14/2006	Spent brite dip (nitric acid <5%, chromic acid <10% contains chromium, cadmium, lead, silver, and mercury with UHC-nickel, antimony, and beryllium in an aqueous solution.	Inorganic Liquid		
Waste is from bldg. 88 Bob Shannon			C128455	02/22/2006	Container Descr.: 15 gal		56.78	2.01
			Q08928:2	02/14/2006	Nitric acid (<5%) rinse water, contains chromium, cadmium, lead, silver with UHC-nickel	Inorganic Liquid		
Waste is from bldg. 88 Bob Shannon			C128456	02/22/2006	Container Descr.: 15 gal		37.85	1.34
			Q08928:3	02/14/2006	Chromic acid (<5%) rinse water contains chromium, silver, and lead with UHC antimony	Inorganic Liquid		
Waste is from bldg. 88 Bob Shannon			C128457	02/22/2006	Container Descr.: 15 gal		45.42	1.60
					Building Totals: Container Count: 3		140.05	4.95
					Division Totals: Container Count: 3		140.05	4.95
		Total Hazardous Waste:			Container Count: 32	73.48	4727.47	172.25
		Total Rad & Mixed:	Total Activity:		Non Tritium	0.00	0.00	0.00

"Cu. ft." is calculated from the volume if it exists; otherwise, it is calculated from the weight. Caution!! When weights must be used, weights are converted to cu. ft. by multiplying the weight in pounds by 0.01602 (specific gravity of water). ShoeBox has no way of determining if this calculation makes sense for any particular waste. The user should examine the description or constituents for all waste with no recorded volume.

---> ShoeBox --->

SBR546

Hazardous & Rad/Mixed Waste Quantities by Division

01/24/2007 17:02

Number of Pages: 3

Start Date: 01-JAN-06 End Date: 01-JAN-07

Date Option: P

Select Haz: Y

Select Mixed: Y

Select Rad: Y

Select Non-Haz: Y

Buildings:

Rooms:

Generators: '003073'

Divisions:

Accounts:

Include ReqLine with this Constituent Description:

Physical Forms:

Treatability Groups:

Inventory Only? N

Chemical Constituents:

Isotopes:

HW Codes:

Weight Unit: K Volume Unit: L

No filter cake was disposed in calendar year 2006.
Christopher Redding 2-6-2007

Chris Redding

Hazardous Waste

Division: EG - Engineering

Bldg	Location	Generator	Requisition/Line Container Id	Receipt Date HWHF Date	Constituent Description	Weight K	Volume L	Cu. ft.
077	0156	Redding,Christopher G (VDFC01)	Q09452:1	06/21/2006	Waste nickel acetate (.6%) aqueous solution with .2% benzoic acid and .4% dispersent.	Inorganic Liquid		
			C131516	07/07/2006	Container Descr.: 55 gal		208.18	7.35
			C131517	07/07/2006	Container Descr.: 55 gal		208.18	7.35
			C131518	07/07/2006	Container Descr.: 55 gal		208.18	7.35
			C131519	07/07/2006	Container Descr.: 55 gal		208.18	7.35
			Q09607:1	08/02/2006	Spent 909 cleaner contains 2.5-10% sodium silicate aqueous solution with UHC-lead and chromium.	Inorganic Liquid		
			C132591	08/30/2006	Container Descr.: 55 gal		208.18	7.35
			C132592	08/30/2006	Container Descr.: 55 gal		208.18	7.35
			C132593	08/30/2006	Container Descr.: 55 gal		208.18	7.35
			C132594	08/30/2006	Container Descr.: 55 gal		208.18	7.35
			Q09668:1	08/18/2006	Waste Blue Gold Cleaner contains 0.5% diethylene glycol N-butyl ether in aqueous solution with 3.5 mg/kg of lead and 1200 mg/l of oil and grease.	Inorganic Liquid		
			C132772		Container Descr.: 55 gal		208.18	7.35
			C132976		Container Descr.: 55 gal		208.18	7.35
			C132977		Container Descr.: 55 gal		208.18	7.35
			C132978		Container Descr.: 55 gal		208.18	7.35
			C132979		Container Descr.: 55 gal		208.18	7.35
			C132980		Container Descr.: 55 gal		208.18	7.35
			C132981		Container Descr.: 55 gal		208.18	7.35
			C132982		Container Descr.: 55 gal		208.18	7.35
			C132983		Container Descr.: 55 gal		208.18	7.35
			C132984		Container Descr.: 55 gal		208.18	7.35
			C132985		Container Descr.: 55 gal		208.18	7.35

"Cu. ft." is calculated from the volume if it exists; otherwise, it is calculated from the weight. Caution!! When weights must be used, weights are converted to cu. ft. by multiplying the weight in pounds by 0.01602 (specific gravity of water). ShoeBox has no way of determining if this calculation makes sense for any particular waste. The user should examine the description or constituents for all waste with no recorded volume.

Hazardous & Rad/Mixed Waste Quantities by Division

Date Range: 01/01/2006 to 01/01/2007

Hazardous Waste

Division: EG - Engineering

Bldg	Location	Generator	Requisition/Line Container Id	Receipt Date HWHF Date	Constituent Description			Weight K	Volume L	Cu. ft.
077	0156	Redding,Christopher G (VDFC01)	C132986		Container Descr.:	55 gal			208.18	7.35
			C132987		Container Descr.:	55 gal			208.18	7.35
			C132988		Container Descr.:	55 gal			208.18	7.35
			C132989		Container Descr.:	55 gal			208.18	7.35
			Q10041:1	11/30/2006	Spent Anodize Sealer Nickel Acetate .6-1%, benzoic acid .1-1%, and water balance.			Inorganic Liquid		
			C135115		Container Descr.:	55 gal			208.18	7.35
			C135116		Container Descr.:	55 gal			208.18	7.35
			C135117		Container Descr.:	55 gal			208.18	7.35
			C135118		Container Descr.:	55 gal			208.18	7.35
					Building Totals:	Container Count:	27		5620.73	198.54
					Division Totals:	Container Count:	27		5620.73	198.54
			Total Hazardous Waste:			Container Count:	27		5620.73	198.54
			Total Rad & Mixed:	Total Activity:	Non Tritium			0.00	0.00	0.00

"Cu. ft." is calculated from the volume if it exists; otherwise, it is calculated from the weight. Caution!! When weights must be used, weights are converted to cu. ft. by multiplying the weight in pounds by 0.01602 (specific gravity of water). ShoeBox has no way of determining if this calculation makes sense for any particular waste. The user should examine the description or constituents for all waste with no recorded volume.

FTU Non-Routine Slug Discharge to Sewer Notification

Verbal Notification:

The FTU operator will immediately, **within 30 minutes**, notify the East Bay Municipal Utility District's (EBMUD) shift supervisor and the Environmental Services Group of any possible slug discharge from the Fixed Treatment Unit (FTU).

The verbal notification will include:

1. Name and telephone number of the person reporting,
2. Date, time, and location of discharge,
3. Duration of discharge including beginning and end times and dates,
4. Type and volume of discharge,
5. Effluent pH reading at time of discharge.

Contact the EBMUD shift supervisor at:

(510) 287-1651 Monday-Friday 8:00am-5:00pm
(510) 287-1458 Off-hours.

Contact one of the following:

Robert Fox	x7327	Pager: 425-0451	Home: (510) 233-3862
Ron Pauer	x7614		Home: (925) 275-9025
LBNL 24/7 Incident Reporting through Blackberry Gate Security	x6999		

If wastewater is found in the secondary containment, call x7911 and request Fire Services to block the storm drains.

GENERAL CONDITIONS

I. Lawrence Berkeley National Laboratory shall comply with all items of the attached *Standard Terms and Conditions, August 2004 Edition* (STC).

II. Lawrence Berkeley National Laboratory shall practice pollution prevention techniques to reduce or eliminate pollutants released from Buildings 25 and 77. Wastes remaining should be recycled whenever possible.

Lawrence Berkeley National Laboratory shall review its waste generating process and practices to identify pollution prevention opportunities such as:

- Improved operating practices
- Material substitution
- Product substitution
- Technology and process modification

Documentation of the identified pollution prevention opportunities shall be maintained at the facility and updated periodically to reflect any actions implemented to minimize wastes. The documentation must be made available for review upon request. Documentation that has been required by another agency will be acceptable.

COMPLIANCE REQUIREMENTS

I. Lawrence Berkeley National Laboratory, shall pretreat all process wastewater from Buildings 25 and 77 prior to discharging to the sanitary sewer. Pretreatment shall consist of unit operations depicted in diagram *Buildings 25 FTU 002 Wastewater Treatment Process* for Building 25, and *Building 77 Upgrade Waste Treatment Process Flow Diagram* for Building 77, at a minimum.

II. Lawrence Berkeley National Laboratory shall maintain a flow totalizer on each pretreatment system at Buildings 25 and 77. The totalizer shall record the volume of wastewater discharged to the sanitary sewer. All pertinent information which documents operation and maintenance of the flow meter shall be kept on site and available for review by EBMUD staff.

III. In lieu of monitoring for total toxic organics at Buildings 25 and 77, Lawrence Berkeley National Laboratory shall implement the following solvent management plans:

- Toxic Organic Management Plan Building 25, Photo Fabrication Facility, revised and updated September 1995
- Accidental Spill Prevention and Containment Plan /Toxic Organic Management Plan Building 77, Ultra High Vacuum Cleaning Facility, December 1997

Lawrence Berkeley National Laboratory shall update the plans as applicable and submit the updated plans to the Environmental Services Division. The updated Slug Control Plan and Toxic Organic Management Plan (TOMP) shall be due to the Environmental Services Division by July 31, 2007.

IV. Lawrence Berkeley National Laboratory shall implement a slug control plan to eliminate or minimize the potential for an accidental or slug discharge of pollutants into the sanitary sewer system. The slug control plan shall contain a response procedure posted in the work areas where spills are most likely to occur.

REPORTING REQUIREMENT

I. Lawrence Berkeley National Laboratory shall submit a Total Toxic Organics (TTO) Compliance Report certifying:

1. Buildings 25 and 77 are implementing the applicable solvent management plans,

   - Toxic Organic Management Plan Buildings 25 Photo Fabrication Facility, revised and updated September 1995
   - Accidental Spill Prevention and Containment Plan/Toxic Organic Management Plan, Building 77, Ultra High Vacuum Cleaning Facility December 1997.

2. No dumping of concentrated toxic organics into the wastewaters has occurred.

The TTO Compliance Report is due December 1, and June 1 of every year this permit is effective. Failure to submit the TTO Compliance Report will subject Lawrence Berkeley National Laboratory to TTO monitoring at Buildings 25 and 77.

WASTEWATER DISCHARGE LIMITATIONS

Lawrence Berkeley National Laboratory shall not discharge wastewater from the pretreatment units at Buildings 25 and 77 into sanitary sewer if the strength of the wastewater exceeds the following local limits or Federal limits in 40 Code of Federal Regulations, Part 433.15 (Pretreatment Standards for Existing Sources):

Regulated Parameter	Ordinance No. 311 Limitations	40 CFR 433.15			
		Maximum for any 1 day (mg/L)		Monthly Average shall not exceed (mg/L)	
		[1]	[2]	[1]	[2]
Cadmium	1	0.69	0.55	0.26	0.21
Chromium	2	2.77	2.22	1.71	1.37
Copper	5	3.38	2.70	2.07	1.66
Cyanide (Total)	5	1.20	0.96	0.65	0.52
Lead	2	0.69	0.55	0.43	0.34
Nickel	5	3.98	3.18	2.38	1.90
pH (not less than)	5.5 S.U.	--	--	--	--
Silver	1	0.43	0.34	0.24	0.19
Total Toxic Organics (TTO)[3,4]	-	2.13	1.70	--	--
Zinc	5	2.61	2.09	1.48	1.18

[1]Federal discharge limitations apply to 40 CFR 433.15 processes, which are electroplating, chemical milling and etching at Lawrence Berkeley National Laboratory Buildings 25 and 77.

[2]Alternative discharge limitations apply to the pretreatment effluent when it is diluted with screen-printing or other dilution water. The limitations are calculated in accordance with the Combined Wastestream Formula (CWF) in 40 CFR 403.6(e), which is:

$$C_{CWF} = \frac{C_{433} \times F_{433}}{F_{433} + F_S}$$

where C_{CWF} = alternative concentration limit for the wastestream
C_{433} = concentration limit for the pollutant in 40 CFR 433 regulated stream
F_{433} = average daily flow volume from the 40 CFR 433 processes
F_S = flow volume from dilution water (screen printing wastewater) during the sampling period.

[3]TTO (Total Toxic Organics) is the summation of all quantifiable values greater than 0.01 mg/l for the following toxic organics detected by EPA 624:
1,1,1-Trichloroethane, 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,2-Dichloroethane, 1,2-Dichloropropane, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 2-Chloroethylvinyl Ether, Acrolein, Acrylonitrile, Benzene, Bis(2-Chloroisopropyl)Ether, Bromodichloromethane, Bromoform, Bromomethane, Carbon Disulfide, Carbon Tetrachloride, Chloroacetonitrile, Chlorobenzene, Chloroethane, Chloroform, Chloromethane, Dibromochloromethane, Ethyl Benzene, Hexachlorobutadiene, Hexachloroethane, Methylene Chloride, Naphthalene, Nitrobenzene, Tetrachloroethene, Toluene, Trichloroethene, Vinyl Chloride

[4]Refer to Compliance Requirement III and of the Reporting Requirement I of this Permit.

SELF-MONITORING REPORTING REQUIREMENTS

I. Lawrence Berkeley National Laboratory shall monitor and sample the wastewater discharge from Buildings 25 and 77 into the community sewer in accordance with Section C of STC. The sampling shall be performed at the locations and frequency for the parameters and analyzed using methods specified below.

II. The sampling locations are:

- Sample tap on the pretreatment system discharge line at the Lawrence Berkeley National Laboratory Buildings 25. The sampling location shall be designated as Process Sampling Point #1 (PSP#1), as depicted in diagram *Buildings 25 FTU 002 Wastewater Treatment Process*.
- Sample tap on the pretreatment system discharge line at the Lawrence Berkeley National Laboratory Buildings 77. The sampling location shall be designated as Process Sampling Point #2 (PSP#2), as depicted in diagram *Buildings 77 Upgrade Waste Treatment Process Flow Diagram*.

III. Lawrence Berkeley National Laboratory shall sample the wastewater discharge on one representative operating day as follows:

Parameter	Analysis Method	PSP#1		PSP#2	
		Frequency	Type	Frequency	Type
pH	EPA 150.1	Semiannual	Grab	Once every four months	Composite[1]
Cadmium	EPA 200.7[2]	Semiannual	Grab	Once every four months	Composite[1]
Chromium	EPA 200.7[2]	Semiannual	Grab	Once every four months	Composite[1]
Copper	EPA 200.7[2]	Semiannual	Grab	Once every four months	Composite[1]
Lead	EPA 200.7[2]	Semiannual	Grab	Once every four months	Composite[1]
Nickel	EPA 200.7[2]	Semiannual	Grab	Once every four months	Composite[1]
Silver	EPA 200.7[2]	Semiannual	Grab	Once every four months	Composite[1]
Zinc	EPA 200.7[2]	Semiannual	Grab	Once every four months	Composite[1]

[1]Each composite sample shall consist of a series of equal volume grab samples collected at a minimum of one sample per hour during the 24-hour discharge period.
[2]The sample shall not be filtered before processing. The analysis shall be preceded by a digestion procedure as described in "Methods for Chemical Analysis of Water and Wastes, 1979 and 1983.

IV. Self Monitoring Schedule:

Analysis	Sample Dates		Report Due Date
	Bldg 25	Bldg 77	
Metals pH Flow	-----	7/16/2007	8/16/2007
	9/10/2007	9/10/2007	10/10/2007
	1/15/2008	1/15/2008	2/15/2008
	5/12/2008	5/12/2008	6/12/2008
	10/13/2008	10/13/2008	11/13/2008
	-----	3/16/2009	4/16/2009
	-----	6/15/2009	7/15/2009
	11/16/2009	11/16/2009	12/16/2009
	2/15/2010	2/15/2010	3/15/2010
	5/10/2010	5/10/2010	6/10/2010
	12/13/2010	12/13/2010	1/13/2011
	-----	3/14/2011	4/14/2011
	-----	6/13/2011	7/13/2011
	10/14/2011	10/14/2011	11/14/2011
	2/13/2012	2/13/2012	3/13/2012

SELF-MONITORING REPORTING REQUIREMENTS (continued)

IV. The Self-monitoring Report shall contain the following information at a minimum:

1. Sample location.
2. Laboratory results and the corresponding chain of custody.
3. List the process discharges that make up the batch discharge for Building 25.
4. Sample descriptions that include qualitative and quantitative statements of color, clarity, amount of settleable and floatable solids.
5. Date and time of totalizer readings taken at beginning and end of batch discharge or the composite sampling period, as well as the difference between readings.
6. Certification and signature prepared in accordance with Section B Part V of STC, "Signature Requirements".

A Self-Monitoring report shall be submitted within 30 days of sampling.

Lawrence Berkeley National Laboratory, Buildings 25 & 77
Permit No. 5023891 1
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MONITORING and TESTING CHARGES

EBMUD Inspections Per Year:	3	@ $715.00 each	$1,770.00 /year

Analyses Per Year:

Parameter	Tests per year	Charge per test	Total Charge per year
pH	3	$17.00	$51.00
Cyanide-Total	2	$78.00	$156.00
Metals	3	$82.00	$246.00
		Total Monitoring and Testing Charge =	$2,223.00 / year
			$185.25 / month

WASTEWATER DISCHARGE PERMIT

EBMUD

Terms and Conditions

FEES AND WASTEWATER CHARGES

The following fees and charges are due when billed by the District:

Annual Permit Fee 2007 - 2012:	$2,145.00
Monthly Monitoring Charge:	$185.25

WASTEWATER DISPOSAL SERVICE CHARGE

NOTE: Wastewater treatment charges are collected under Permit No. 0660079 1 issued to Lawrence Berkeley National Laboratory, Whole Facility.

The District may change the terms and conditions of a Wastewater Discharge Permit, including changing the average limits on the elements of wastewater strength and rates and charges, from time to time as circumstances may require. Treatment rate updates shall be provided by means of a rate revision letter. The District shall allow a discharger reasonable time to comply with any District required changes in the permit except that a change in average limits of wastewater strength shall immediately affect calculation of the wastewater disposal charge.

Charges listed in this Permit will be assessed on EBMUD bills in accordance with the EBMUD Meter Reading Schedule.

Authorization

Permit Holder shall report to EBMUD, Wastewater Department any changes, permanent or temporary, to the premises or operations that significantly change the quality or volume of the wastewater discharge or deviation from the terms and conditions under which this permit is granted.

Permit Holder is hereby authorized to discharge wastewater to the community sewer, subject to said Applicant's compliance with EBMUD Wastewater Control Ordinance as well as permit terms and conditions.

Effective: April 8, 2007

Expiration: April 7, 2012

Ben Horenstein for 4/12/07

Director, Wastewater Department — Date

EBMUD WASTEWATER DISCHARGE PERMIT STANDARD TERMS AND CONDITIONS

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SECTION A. GENERAL PROVISIONS

I. Duty to Comply

The Permit Holder shall comply with all terms and conditions of the Wastewater Discharge Permit (Permit).

II. Discharge Location and Process

The Permit Holder shall discharge wastewater only from the location(s) and process(es) described in the Permit.

III. Permit Renewal

The Permit Holder shall submit an application for Permit renewal at least 60 days prior to expiration of the existing Permit.

IV. Prohibited Discharges

a. General Prohibition: No Permit Holder shall discharge wastewater into a community sewer which will result in contamination, pollution, or a nuisance.

b. Prohibited Effects: No Permit Holder shall discharge wastewater into a community sewer if it contains substances or has characteristics which, either alone or by interaction with other wastewaters, cause or threaten to cause:

(1) Damage to District facilities.

(2) Interference with or impairment of the operation or maintenance of District facilities.

(3) Obstruction of flow in sewers or interceptors.

(4) Danger to life or safety of any person.

(5) Interference with, or overloading of, treatment or disposal processes.

(6) Flammable or explosive conditions at or near District facilities.

(7) Wastewater or any other by-products of the treatment process to be unsuitable for reclamation and reuse, or interfere with any processes for reclamation.

(8) Noxious or malodorous gases or odors at or near District facilities.

(9) Discoloration or any other condition in the quality of the District's treatment plant effluent in such a manner that receiving water quality requirements established by law cannot be met by the District.

(10) Conditions at or near District facilities which violate any statute or any rule, regulation, or ordinance of any public agency or State or Federal regulatory body, including the general prohibitions contained in Federal General Pretreatment Regulations.

(11) The presence of toxic gases, fumes, or vapors in quantities injurious to the health and safety of District personnel.

(12) Pass-through of the District's treatment plant, causing a violation of any requirement of the District's NPDES permit.

c. Prohibited Substances: No Permit Holder shall discharge the following to a community sewer:

(1) Wastewater which is not polluted and meets requirements for and is acceptable for discharge to storm sewers or to receiving waters of the State; provided that the Director may grant permission for the discharge of unpolluted wastewaters which comply with regulations of the public agency owning the community sewer.

(2) Wastewater which creates a fire or explosion hazard including, but not limited to, discharges with a closed cup flashpoint of less than 140° F (60° C) using the test methods specified in 40 CFR 261.21.

(3) Garbage, except ground garbage from residential and commercial premises where food is prepared and consumed.

d. Prohibited Locations: Except for sewer construction and maintenance by public agencies and contractors, no Permit Holder shall discharge any wastewater directly into a manhole or other opening in a community sewer system other than through side sewers approved by the public agency owning the system; provided that the Director may grant permission for such direct discharges, upon written application, at locations approved by the public agency and upon payment of applicable sewage disposal charges to the District.

e. Prohibition on Use of Dilution: Except where expressly authorized to do so by an applicable pretreatment standard or requirement, no Permit Holder shall increase the use of process water, or in any other way attempt to dilute a discharge as a partial or complete substitute for adequate pretreatment to achieve compliance with a pretreatment standard, requirement or discharge limitation. The District may impose mass limitations on Permit Holders which are using dilution to meet applicable Pretreatment Standards or requirements, or in other cases where the imposition of mass limitations is appropriate.

f. Prohibition on Slug Discharges: No Permit Holder shall discharge any pollutant, including oxygen-demanding pollutants, at a flow rate and/or pollutant concentration which causes or threatens to cause interference with the wastewater treatment process. For the purposes of this section, any discharge at a flow rate or concentration which could

cause a violation of the prohibited discharge standards or limitations in Sections A.IV and A.V. of this document shall be deemed a slug discharge.

g. Bypass Prohibited

(1) Bypass of pretreatment equipment and/or discharge points is prohibited and the District may take enforcement action against any Permit Holder for bypass unless:

(i) bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(ii) there were no feasible alternatives to the bypass, as described in 40 CFR 403.17(d) and the Permit Holder submits the notifications required in 40 CFR 403.17(c).

(2) The District may approve an anticipated bypass, after considering its adverse effects, if the District determines that it will meet the conditions specified in part *g(i)* of this prohibition.

h. Discharge of Petroleum or Mineral Oil Causing Pass-through or Interference Prohibited: Notwithstanding the provisions of Section A.V.a., no Permit Holder may discharge petroleum oil, non-biodegradable cutting oil or other products of mineral origin in any amount that causes interference or pass-through.

i. Discharge of Trucked or Hauled Wastes Prohibited: No Permit Holder shall discharge any trucked or otherwise hauled wastes to the community sewer or to any District facilities unless a permit has been issued by the District.

V. Limitations on Discharges

a. Wastewater Strength Limits: No Permit Holder shall discharge wastewater from a side sewer into a community sewer if the strength of the wastewater exceeds the following:

Arsenic	2	mg/L
Cadmium	1	mg/L
Chlorinated Hydrocarbons (total identifiable)	0.5	mg/L
Chromium (total)	2	mg/L
Copper	5	mg/L
Cyanide	5	mg/L
Iron	100	mg/L
Lead	2	mg/L
Mercury	0.05	mg/L
Nickel	5	mg/L
Oil and Grease	100	mg/L
pH	not less than 5.5	S.U.
Phenolic compounds	100	mg/L
Silver	1	mg/L
Temperature	150[1]	°F
Zinc	5	mg/L

[1] 150°F (65.5°C), or any thermal discharge which as a result of temperature and/or volume causes the influent of the wastewater treatment plant to exceed 104°F (40°C)

b. Additional Wastewater Strength Limits: Wastewater strength limits for constituents not listed in Section A.V.a. may be established in a wastewater discharge permit based on available treatment technology, existing wastewater conditions in the District's facilities or other factors as determined by the Director. The Director may also establish wastewater strength limits on the wastewater discharge permits at locations within a premises whenever non-process water may dilute the wastewater discharging from side sewers.

c. Quantity and Rate of Flow Limits: No Permit Holder shall discharge wastewater into a community sewer in quantities or at rates of flow which may have an adverse or harmful effect on or overload District facilities or cause excessive or additional District treatment costs. The Director may establish mass discharge limits in wastewater discharge permits to control the quantity and rate of flow of wastewater discharges.

d. Radioactive Limits: No Permit Holder shall discharge or cause to be discharged any radioactive wastewater into a community sewer except when the Permit Holder is authorized to use radioactive material by the Nuclear Regulatory Commission or other governmental agency empowered to regulate the use of radioactive materials and when the wastewater is discharged in strict conformity with current Nuclear Regulatory Commission regulations and recommendations for safe, disposal and in compliance with all rules and regulations of State and local regulatory agencies.

e. Deny or Condition New or Increased Contributions: The Director may deny or condition new or increased contributions of pollutants, or changes in the nature of pollutants, to the District's wastewater treatment facility by Permit Holders where such contributions do not meet applicable Pretreatment Standards and Requirements or where such contributions would cause the District to violate its NPDES permit.

VI. Disposal of Hazardous Waste

The Permit Holder shall handle and dispose of hazardous waste in accordance with all local, state, and federal laws and regulations.

VII. Closure Plan

The District may require a Permit Holder who intends to close or cease a regulated process to provide a written Closure Plan. The plan shall include the following four items:

a. date of proposed work or production stoppage

b. date of proposed final closure (after cleaning and demobilizing activities are complete)

c. description of cleaning activities, and

d. description of disposal of inventoried process material and waste

VIII. Availability of Permit

The Permit Holder shall maintain a copy of the current Permit at the permitted site and make the Permit available to both facility and District staff at all times.

IX. Payment of Permit Fees and Charges

The Permit Holder shall pay all Permit fees, monitoring and testing charges, and wastewater treatment charges.

X. Continuation of Expired Permits

An expired Permit will continue to be effective and enforceable until the Permit is reissued if:

a. The Permit Holder has submitted a complete permit application at least 60 days prior to the expiration date of the Permit Holder's existing Permit.

b. The delay in reissuing the expired Permit is not due to any act or failure to act on the part of the Permit Holder.

XI. Permit Termination

The District may terminate the Permit for violation of the Permit terms and conditions or for violation of the provisions of EBMUD Ordinance No. 311A-03, unless waived by the Permit.

XII. Transfer of Permit Prohibition

The Permit Holder shall not assign or transfer the Permit.

XIII. Severability

If any provision of the Permit, EBMUD Ordinance No. 311A-03, or the application thereof to any person or circumstance, is held invalid, the remainder of the Permit or EBMUD Ordinance No. 311A-03, or the application of such provision to other persons or circumstances, shall not be affected thereby.

XIV. Property Rights

The issuance of the Permit does not convey to the Permit Holder any property rights of any sort or any exclusive privileges.

SECTION B. REPORTING AND RECORD KEEPING

I. Spill or Slug Discharge Notification

Immediately upon discovering any spill or slug discharge to the sanitary sewer, the Permit Holder shall notify EBMUD Environmental Services Division at (510) 287-1651 during business hours or (510) 835-3000 during non-business hours.

The Permit Holder shall submit to the District within five days of the occurrence a formal written notification describing:

a. the circumstances of discharge

b. what was discharged

c. volume of discharge

d. duration of discharge including beginning and end times and dates

e. corrective actions to prevent recurrence

f. whether discharge violates the terms and conditions of the Permit

II. Twenty-Four Hour Violation Reporting

a. The Permit Holder shall notify the District within 24 hours of becoming aware of any of the following violations:

(1) discharges prohibited by EBMUD Ordinance No. 311A-03, Title II, except where authorized by the Permit

(2) exceedence of Categorical Pretreatment Standards

(3) exceedence of wastewater discharge limits as established in the Permit

(4) bypass of any part of a required pretreatment system

b. The Permit Holder shall submit a written report to the District within five days of becoming aware of a violation. The report shall include the following information:

(1) the date and time of the violation

(2) the cause of the violation

(3) a description of the violation, including what was discharged

(4) the volume of the discharge

(5) the duration of the discharge violation including start and end times and dates

(6) analytical results, if available, with chain of custody and other pertinent documentation

(7) measures taken to correct the violation

(8) measures taken to prevent recurrence

c. If analytical results of a sample collected by the Permit Holder indicate a violation, the Permit Holder shall repeat the sampling and analysis, and submit the results to the District within 30 days of becoming aware of the violation, unless:

(1) the District samples for the same parameter between the time the Permit Holder performs its initial sampling and the time when the Permit Holder receives the results of the sampling or
(2) the District samples the permitted discharge at a frequency of at least once per month

Such notification shall not relieve the Permit Holder of any expense, loss, damage, or other liability which may be incurred as a result of damage to the POTW, natural resources, or any other damage to person or property; nor shall such notification relieve the Permit Holder of any fines, penalties, or other liability which may be imposed pursuant to EBMUD Ordinance No. 311A-03.

III. Changes in Quantity and Quality of Wastewater

The Permit Holder shall immediately report to the District any significant change to the quality or volume of the wastewater discharge or any deviation from the Permit terms and conditions.

IV. Hazardous Waste Notification

The Permit Holder shall submit to the District a written notification in accordance with 40 CFR 403.12(p)(1) and (3), unless exempted under the provisions of 40 CFR 403.12(p)(2), of any discharge, which, if otherwise disposed of, would be a hazardous waste under 40 CFR 261. Pollutants reported as part of the Self-Monitoring Reporting Requirements are not subject to this notification requirement.

V. Signature Requirement

a. All required reports, permit applications, self-monitoring reports, violation response reports, and periodic reports on continued compliance, shall be signed:

(1) by a responsible corporate officer, if the Permit Holder submitting the reports is a corporation. For the purpose of this paragraph, a responsible corporate officer means:

(i) a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

(ii) the manager of one or more manufacturing, production, or operation facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

(2) by a general partner or proprietor if the Permit Holder submitting the reports is a partnership or sole proprietorship, respectively;

(3) by a duly authorized representative of the individual designated in paragraph *(1)* or *(2)* of this section if:

(i) The authorization is made in writing by the individual designated in paragraph (1) or (2);

(ii) The authorization specifies either an individual or a position having responsibility for the overall operation of the facility from which the industrial discharge originates, such as the position of plant manager, operator of a well, or well field superintendent, or a position of equivalent responsibility, or having overall responsibility for environmental matters for the company; and

(iii) The written authorization is submitted to the District.

(4) If an authorization under paragraph (a)(3) of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, or overall responsibility for environmental matters for the company, a new authorization satisfying the requirements of paragraph (a)(3) of this section must be submitted to the District prior to or together with any reports to be signed by an authorized representative.

b. Reports and applications must include the following certification statement:

"I certify under penalty of law 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 person or persons who manage the system, or those persons directly responsible for gathering 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 submitting false information, including the possibility of fine and imprisonment for knowing violations."

VI. Retention of Records

a. The Permit Holder shall retain all records and relevant correspondence, including but not limited to:

(1) all records used to complete the Permit Application

(2) all information resulting from any monitoring activities

(3) discharge reports

(4) self-monitoring data

(5) pretreatment system process control logs, including calibration and maintenance records, and original strip chart recordings of continuous monitoring instrumentation

b. The Permit Holder shall make all retained records available for inspection and copying by a duly authorized representative of the District or any other governmental entity having jurisdiction.

VII. Falsifying Information

Knowingly making any false statement on any report or other document required by the Permit or knowingly rendering any monitoring device or method inaccurate, is a crime, and may result in administrative, civil and criminal enforcement action.

SECTION C. MONITORING AND SAMPLING

I. Representative Sampling

Samples and measurements taken, as required in the Permit or those submitted with the application, shall be representative of the volume and nature of the monitored discharge. The Permit may require that a sample be representative of certain, specific, discharge periods.

Detection limits shall be sufficient to determine compliance with the Permit terms and conditions.

II. Chain of Custody

a. The Permit Holder shall submit a Chain of Custody record for each sample that documents the following:

(1) the location, the type of sample(s) (grab or composite), the date(s) and time, or span of time the sample was taken
(2) the number of containers, and type (glass, plastic, vial, etc.)
(3) preservation techniques (ice, refrigeration at 4°C, chemicals added, etc.)
(4) sample collector's name, legibly written
(5) sample ID number (to cross-reference with the sample ID number on the Laboratory results)
(6) all persons handling the sample and the individual receiving the sample at the laboratory, including their signature, printed name, company, date and time the sample was relinquished and accepted

b. The Permit Holder shall ensure that samples transported or handled by a courier, delivery service (public or private) or shipper shall include the company or individual's name, and the method of packaging the samples, on the Chain of Custody record.

c. The Permit Holder shall show all sample analyses performed in the field on the Chain of Custody record (e.g. pH - field test).

d. The District may require resampling of the wastewater for an incomplete or incorrect Chain of Custody record.

III. Sample Preservation and Analytical Methods

Unless the Permit requires otherwise, the Permit Holder shall use sampling methods, sample preservation, and analytical methods for each parameter in accordance with applicable sections of:

a. *EBMUD Table of Approved Test Methods*

b. *Standard Methods of Water and Wastewater Analysis*, Edition used in the EBMUD Table of Approved Test Methods

c. EPA 40 CFR Part 136, *Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act*, latest edition

IV. Laboratory Reports

The Permit Holder shall use a laboratory certified by the California Department of Health Services for each sample analysis required by the Permit. The laboratory report for each sample shall include:

a. the name and address of the laboratory performing the analyses

b. sample ID number (to cross reference with the sample ID number on the Chain of Custody)

c. the analytical result(s)

d. the date of sampling, the date the sample(s) was received at the laboratory, and the date of analysis

e. the Standard Method or EPA Method used for analyses

f. the detection limit

g. the signature and title of an authorized representative of the Laboratory, who reviewed the laboratory results

V. Additional Monitoring

If the Permit Holder monitors any pollutant at the compliance point more frequently than required by the Permit, using test methods specified in the Permit, the results of such monitoring shall be included in the subsequent self-monitoring report.

VI. Calibration and Maintenance of Equipment

The Permit Holder shall calibrate, inspect, and maintain all flow measuring, discharge sampling, monitoring, and pretreatment equipment to ensure the equipment accuracy and reliability.

VII. Flow Measurements

The Permit Holder shall use appropriate flow measurement devices and methods when required by the District. Flow measurement devices and methods are subject to approval by the District.

VIII. Tampering with Equipment

The Permit Holder shall not tamper with monitoring equipment or treatment units.

IX. Access to Facilities

The Permit Holder shall provide access to facilities by District staff in order to ascertain compliance with the Ordinance and Permit.

SECTION D. ENFORCEMENT AND PENALTIES

I. Public Notification of Permit Holders in Significant Non-Compliance

At an interval of not less than once per year, the District will publish the identities of any Permit Holder(s) which is (are) found to be in significant non-compliance of any national pretreatment standard, discharge limitation or prohibition, Permit terms and conditions, or any other requirement of these regulations. The definition of significant non-compliance shall be as specified in Section E. The publication shall occur in the newspaper having the largest daily circulation within the service area of the District.

II. Violations of Permit Terms and Conditions

The Permit Holder shall be subject to District actions for failure to comply with the Permit terms and conditions. The actions may include violation follow-up inspections and fees, issuance of Cease and Desist Orders, Administrative Civil Liability penalties, and other actions as authorized by EBMUD Ordinance No. 311A-03, Title VI.

III. Schedule of Remedial or Preventive Measures (Compliance Schedule)

When the District finds that a discharge of wastewater is taking place or threatening to take place that violates or will violate prohibitions or limits prescribed by Ordinance 311A-03, or wastewater source control requirements or the provisions of a wastewater discharge permit, the District may require the Permit Holder to submit for approval, a detailed time schedule of specific actions the Permit Holder shall take in order to correct or prevent a violation of requirements. Such schedule shall not extend the compliance date beyond applicable federal deadlines.

IV. Criminal Penalties.

a. A Permit Holder who intentionally discharges wastewater in any manner, in violation of any order issued by the Director, which results in contamination, pollution, or a nuisance, as defined in Ordinance 311A-03, is guilty of a misdemeanor and may be subject to criminal penalties of not more than $1,000 per day for each such violation, including, but not limited to, any violation of pretreatment standards or requirements.
b. A Permit Holder who knowingly makes any false statement or representation in any record, report, plan, or other document filed with the District, or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required by the District, shall be punished by a fine of not more than twenty-five thousand dollars ($25,000) or by imprisonment in the county jail for not more than six months, or by both.

V. Civil Enforcement Penalties.

a. A Permit Holder who fails to comply with any order issued by the District, including orders related to pretreatment standards or requirements, shall be subject to a civil penalty not to exceed ten thousand dollars ($10,000) for each day in which the discharge, violation, or refusal occurs.
b. A Permit Holder who intentionally or negligently violates any order issued by the District for violation of rules regulating or prohibiting discharge of wastewater which causes or

threatens to cause a condition of contamination, pollution or nuisance, as defined in this article, may be liable civilly in a sum not to exceed twenty-five thousand dollars ($25,000) for each day in which the violation occurs. The attorney of the District, upon request of the Board of Directors of the District, shall petition the Superior Court to impose, assess, and recover such sums.

VI. Payment of Fines and Violation Fees

The Permit Holder shall pay the District any fines and violation fees that are assessed.

SECTION E. DEFINITIONS

BMPs - Best Management Practices are guidelines and procedures that reduce the generation of pollutants or hazardous wastes, and prevent them from being released to the environment.

Bypass - The intentional diversion of wastestreams from any portion of a treatment facility.

Chain of Custody - A Chain-of-Custody is a legal record of each person who had possession of a sample. It is included with an analytical report.

Combined Wastestream Formula - Formula defined in 40 CFR 403.6(e)

Director - Director of the Wastewater Department of the East Bay Municipal Utility District, or his/her designated representative.

Discharge Minimization Permit - Mandatory permit that includes monitoring and reporting requirements.

District - East Bay Municipal Utility District.

Hazardous Waste - Listed and characterized wastes under Section 3001 of the Resource Conservation and Recovery Act, as described in the Code of Federal Regulations (40 CFR Part 261) or as defined in California Health and Safety Code Section 25117. VII.

Permit Holder - Any individual, partnership, firm, association, corporation, or public agency issued a Wastewater Discharge Permit.

Pollution Prevention Permits - Mandatory permits that contain best management practices to reduce or eliminate pollutants discharged to the sanitary sewer.

POTW - Publicly Owned Treatment Works, e.g., EBMUD SD-1. A treatment works owned by a state or municipality. This includes any devices, and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature. [Ref. 40 Code of Federal Regulations, 403.3(o)]

Pretreatment Program - A program administered by a POTW that meets the criteria established in EPA 40 CFR Part 403.8, 403.9 and 403.11.

Prohibition - Prohibited wastewater discharges as defined in EPA 40 CFR Part 403.5 or EBMUD Ordinance No. 311A-03, Title I, Section 5, and Title II, Section 2.

Regional Water Quality Control Board - The California Regional Water Quality Control Board, San Francisco Bay Region, is the approval authority for the District's Pretreatment Program.

Sample - A portion of wastewater that is representative of a larger volume of wastewater being discharged. The two types of samples are:

a. Grab - an individual sample collected in a short period of time not exceeding fifteen minutes.
b. Composite - a sample consisting of a number of discrete aliquots combined into a single sample, representative of a period of time.

SD-1 - EBMUD Special District No. 1, a district established to provide treatment of wastewater from the following East Bay Communities: Alameda, Albany, Berkeley, Emeryville, Oakland, Piedmont, and the Stege Sanitary District that includes the City of El Cerrito, the Richmond Annex, and the Kensington area. [Ref. MUD Act, Division 6, Chapter 8, Section 13451].

Significant Noncompliance - A Permit Holder is in significant noncompliance with applicable pretreatment requirements if any violation meets one or more of the following criteria:

a. Chronic violations of wastewater discharge limits, defined as those in which sixty-six percent or more of all of the measurements taken during a six-month period exceed (by any magnitude) the daily maximum limit or the average limit for the same pollutant parameter.
b. Technical Review Criteria (TRC) violations, defined as those in which thirty-three percent or more of all of the measurements for each pollutant parameter taken during a six-month period are equal to or exceed the product of the daily maximum limit or the average limit multiplied by the applicable TRC.
   (1) TRC = 1.4 for BOD, TSS, fats, oil and grease
   (2) TRC = 1.2 for all other pollutants (except pH)
c. Any other violations of a pretreatment effluent limit (daily maximum or longer term average) that the District determines has caused, alone or in combination with other discharges, interference or pass through (including endangering the health of POTW personnel or the general public).
d. Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment or has resulted in the POTW's exercise of emergency authority to halt or prevent such a discharge.
e. Failure to meet, within 90 days after the due date, a compliance schedule milestone contained in this Permit or Manager's order for starting construction, completing construction, or attaining final compliance.
f. Failure to provide, within 30 days after the due date, required reports such as baseline monitoring reports, 90-day compliance reports, self-monitoring reports, and reports on compliance with compliance schedules.
g. Failure to accurately report noncompliance.
h. Any other violation or group of violations, which the District determines, will adversely affect the operation or implementation of the local pretreatment program.

Slug Discharge - Any discharge of a non-routine, episodic nature, including but not limited to an accidental spill or non-customary batch discharge.

Spill - An accidental discharge of a substance that may pose an environmental, public health, or wastewater quality concern.

Total Identifiable Chlorinated Hydrocarbons (TICH) - The sum of the concentrations of all quantifiable values equal to or greater than the detection limit for all chlorinated hydrocarbons identified by EPA Method 624.

Total Metals - The sum of the concentrations of copper, chromium, nickel, and zinc (40 CFR 413.02,e)

Total Toxic Organics (TTO) - The sum of the concentrations of specific toxic organic compounds found in the wastewater discharge at a concentration greater than 10 ug/L. Each categorical standard (40 CFR 405 - 471) lists the specific toxic organic compounds that are to be included in the summation.

Wastewater Discharge Limits - A wastewater discharge limit is the maximum concentration of a pollutant allowed to be discharged during a specific period of time. Wastewater discharge limits may be of three types: Monthly Average, 4-day Average, and Maximum.

> ***Monthly Average*** - The maximum arithmetic average value of all samples taken in a calendar month.
>
> ***4-day Average*** - The maximum arithmetic average value of four consecutive samples taken on different days.
>
> ***Maximum*** - The maximum concentration of a pollutant allowed to be discharged at any time, as determined from the analysis of a grab or composite sample.

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APPENDIX -- EBMUD Table of Approved Test Methods

The District has approved the following test methods for wastewater analysis. These methods are generally used for District and self-monitoring. Other methods not listed in this table may be required. Refer to the self-monitoring section of your wastewater discharge permit for required specific test methods. Alternative EPA methods for water and wastewater may also be acceptable.

Parameter	Preservative	Maximum Hold Time	EPA Method	STD Methods* 18th Ed.
Arsenic (Total)	HNO_3 to pH<2 Cool to 4°C	6 months	206.3 200.7	3114 B 3120 B
Cadmium (Total)	HNO_3 to pH<2 Cool to 4°C	6 months	213.2 200.7	3113 B 3120 B
CODF, using a Whatman 934AH Glass Microfiber filter, or equivalent	Preserve with H_2SO_4 to pH <2 Cool to 4°C	28 days		5220 D
Chromium (Total)	HNO_3 to pH<2 Cool to 4°C	6 months	218.2 200.7	3113 B 3120 B
Copper (Total)	HNO_3 to pH<2 Cool to 4°C	6 months	220.2 200.7	3113 B 3120 B
Cyanide (Amenable)	NaOH to pH>12 Ascorbic acid if Cl_2 present Cool to 4°C	14 days	335.1	4500-CN G
Cyanide (Total)	NaOH to pH>12, ascorbic acid if Cl_2 present Cool to 4°C	14 days	335.2	4500-CN B-E
Iron (Total)	HNO_3 to pH<2 Cool to 4°C	6 months	200.7	3113 B 3120 B
Lead (Total)	HNO_3 to pH<2 Cool to 4°C	6 months	239.2 200.7	3113 B 3120 B
Mercury (Total)	HNO_3 to pH<2 Cool to 4°C	28 days	245.1 245.2	3112 B
Nickel (Total)	HNO_3 to pH<2 Cool to 4°C	6 months	249.2 200.7	3113 B 3120 B
Oil & Grease (Total) Oil & Grease (HC)	HCl or $H2SO_4$ to pH<2 Cool to 4°C	28 days	1664 HEM 1664 HEM-SGT	
Phenolic Compounds	H_2SO_4 to pH<2 Cool to 4°C	28 days	420.1	5530-D
pH, Hydrogen Ion	None	Analyze Immediately	150.1	4500-H+ B
Silver (Total)	HNO_3 to pH<2 Cool to 4°C	6 months	272.2 200.7	3113 B 3120 B

Parameter	Preservative	Maximum Hold Time	EPA Method	STD Methods* 18th Ed.
Temperature (°C)	None	Analyze immediately	170.1	2550 B
Total Suspended Solids TSS, filtered with Whatman 934 AH Glass Microfiber filter, or equivalent	Cool to 4°C	7 days	160.2	
Zinc (Total)	HNO_3 to pH<2 Cool to 4°C	6 months	289.2 200.7	
Organochlorine Pesticides & Poly Chlorinated Biphenyls (PCBs)	Cool to 4°C	7 days until extraction; 40 days after extraction	608	6630B & C
Purgeable Organics (BTEX)	HCI to pH <2, add ascorbic acid if Cl_2 is present. VOA vials, No headspace. Cool to 4°C	14 days	624[1] 8021 B 8260 B	
Semi-Volatile Organics (BNA's)	Cool to 4°C	7 days until extraction; 40 days after extraction	625	
Total Identifiable Chlorinated Hydrocarbon (Volatile Organics)	HCl to pH<2, add ascorbic acid if Cl_2 is present. VOA vials, no headspace. Cool to 4°C	14 days	624 8260 B	

[1] EPA Method 624 table in 40CFR Part 136 does not list xylenes; however, EBMUD may accept xylenes detected by this method.

* Standard Methods for the Examination of Water and Wastewater

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