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DEPARTMENT OF ENVIRONMENTAL QUALITY

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Attachment 1

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Baseline Report for Molex, Inc. Temporary Variance Case No. 1898
(to be submitted within 60 days of variance issuance date)

Combined Treatment System Information (West Bond Circle Facility)

1) Description of Wastewater Treatment Process: See attached document

2) Effluent Data for Most Recent 12 Months of Operation:

Parameter	Avg. Conc. (mg/1)	Avg. Mass ~~(lb/day)~~ Grams/day
Total Cadmium	.0007	.05
Total Chromium	~~ND~~ .007	.5
Total Copper	.83	57
Total Cyanide	~~ND~~ .017	1.17
Total Lead	.12	8.24
Total Nickel	1.48	102
Total Silver	.001	.1
Total Tin	Estimate 511	5886
Total Zinc	.25	17.2

Average Flow: 13,145 gal/day Minimum pH: 5.7 Maximum pH: 9.3

3) Estimate of Annual Capital and Operating Costs: 250,000 capital over 15 years = 16,667.00
Not definite operating costs.

4) Combined Sludge Analytical Data (if available): Non available: Estimated

Parameter	Total (mg/kg dry wt.)	TCLP (mg/1)
Arsenic	< .1 PPM	
Barium	5 PPM	
Cadmium	< 1 PPM	
Chromium (Total)	< 1 PPM	
Chromium (Hex)	< 1 PPM	
Copper	75,000 PPM	
Cyanide	< 1 PPM	
Lead	2000 PPM	
Gold	75 PPM	
Mercury	< .1 PPM	
Nickel	85,000 PPM	
Selenium	< 1 PPM	
Silver	2 PPM	
Tin	15,000 PPM	
Zinc	270 PPM	

Volume Generated (lb/yr.): 29,220 pH: 8.8 % Moisture Content: 25 *

* Processed in sludge dryer.

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5) Annual Reclamation Value of Combined Sludge:

6) Annual Storage, Transportation, and Reclamation Costs for Combined Sludge: Transportation $1750/year

Segregated Treatment System Information (700 Kingbird Facility)

1) Description of Wastewater Treatment Process: 5 Separate treatment systems.
1. Batch treatment of palladium rinses (stagnate rinses 300 gallons/year)
2. Batch treatment of gold rinses (stagnate rinses 1200 gallons/year)
3, 4, 5 Automated systems for copper, nickel and tin tin-lead rinses. 2 stage pH adjust, flocculation, clarification, filtration and a common final pH adjustment. 3 seperate filter presses

2) Capital Cost of Segregated Treatment System:
432,032.00

3) Anticipated Sludge Generation Rates (lb/yr.):
Copper Sludge: 13,376 Nickel Sludge: 45,089 Tin/Lead Sludge: 12,863
Moisture ~~25%~~ 25% 50% 50%

4) Estimated Annual Cost of Sludge Disposal as a Hazardous Waste:
600 @ 300/ton = Transportation - 50% included (15-20 cents/lb)
71.3 x 300 = 21,390.00 min 42,780.00 max

5) Copper Sludge Analysis:

Parameter	Total (mg/kg dry wt.)	TCLP (mg/1)
Arsenic	6	ND(0.02)
Barium	10	0.1
Cadmium	15	0.39
Chromium (Total)	ND(2.50)	ND(0.05)
Chromium (Hex)	ND	ND(0.05)
Copper	239,000	2.4
Cyanide	0.03	—
Lead	160	0.9
Gold	ND(50)	ND(1)
Mercury	ND(0.25)	ND(0.005)
Nickel	3500	82.55
Selenium	0.5	ND(0.005)
Silver	5.5	ND(0.01)
Tin	382	ND(5)
Zinc	900	1.7

% Moisture Content: 54% pH: 7.5

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6) Nickel Sludge Analysis:

Parameter	Total (mg/kg dry wt.)	TCLP (mg/1)
Arsenic	ND (1)	ND (0.02)
Barium	12	0.8
Cadmium	ND (0.50)	ND (0.01)
Chromium (Total)	ND (2.50)	ND (0.05)
Chromium (Hex)	ND	"
Copper	56	0.28
Cyanide	0.2	—
Lead	ND (0.5)	ND (0.1)
Gold	ND (50)	ND (1)
Mercury	.17	ND (0.005)
Nickel	165,000	1200
Selenium	ND (0.25)	ND (0.005)
Silver	0.8	ND (0.01)
Tin	ND (250)	ND (5)
Zinc	3.2	0.08

% Moisture Content: 72 % pH: 9.4

7) Tin/Lead Sludge Analysis:

Parameter	Total (mg/kg dry wt.)	TCLP (mg/1)
Arsenic	ND (1)	ND (0.02)
Barium	ND (5.0)	ND (0.1)
Cadmium	0.7	0.01
Chromium (Total)	ND (2.50)	ND (0.05)
Chromium (Hex)	ND	"
Copper	921	0.56
Cyanide	0.08	—
Gold	ND (50)	ND (1)
Mercury	ND (0.025)	ND (0.005)
Nickel	332	6.62
Selenium	ND (0.25)	ND (0.005)
Silver	ND (0.50)	ND (0.01)
Tin	130,000	ND (5)
Zinc	920	11
Lead	6100	

% Moisture Content: 61 % pH: 7.0

Completed by: Paul G Eckerson Title: Chemist

Signature: Paul G Eckerson Date: 11/11/98

Baseline Report for Molex, Inc. Temporary Variance Case No. 1898

Sludge Recycling Facility Information: Copper Sludge
(additional copies may be made if more than one recycler is being used for each type of sludge)

Facility Name: Phibro Tech

Facility Address: ERS Division
10 Industry Avenue, Joliet IL, 60435

Contract Name and Title: Phil Edelstein - Director of Environmental Recovery Services

Telephone Number: 201-944-6000 ex 329

Description of Processing Copper Sludge Receives: See Attached document

Anticipated Value of Copper Sludge: With copper prices under COMEX $.30/lb the value will be nearly 0. We had been expecting to received 2 to 3 per pound with the recyler providing the shipping and cost

Copper Content, Purity, and other Factors Required by the Recycling Facility for Acceptance of the Sludge:
Acceptance of the sludge is based on previous representative sample analysis. Content, purity, and other factors are expected to be similar to the sample material.
Containers cannot exceed 4300# in weight. In super sacks. 1 yd^3

Baseline Report for Molex, Inc. Temporary Variance Case No. 1898

Sludge Recycling Facility Information: Nickel Sludge
(additional copies may be made if more than one recycler is being used for each type of sludge)

Facility Name: Phibro Tech
ERS Division

Facility Address: 10 Industry Avenue, Joliet IL, 60435

Contact Name and Title: Phil Edelstein - Director of Environmental Recovery Services

Telephone Number: 201-944-6000 ext 329

Description of Processing Nickel Sludge Receives: See Attached Document

Anticipated Value of Nickel Sludge: $.05 per pound (nickel must be 14% by weight)
Recycler provides transportation. Bags cost $26.00 each and hold about 1600 lbs each. $80-26 = $54/1600 lbs = $.03375/lb

Nickel Content, Purity, and other Factors Required by the Recycling Facility for Acceptance of the Sludge:
Acceptance of the sludge is based on previous representative sample analysis. Price has been set assuming 14% nickel by weight. Containers must not exceed 4300# in weight. 1 yd³ supersacks. Content, purity and other factors are expected to be similar to samples.

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Sludge Recycling Facility Information: Tin/Lead Sludge
(additional copies may be made if more than one recycler is being used for each type of sludge)

Facility Name: ECS Texas

Facility Address: 105 Tejas Drive, Terrell TX 75160

Contact Name and Title: Steve Burns - Sales manager

Telephone Number: 972-524-1075

Description of Processing Tin/Lead Sludge Receives: See attached document

Anticipated Value of Tin/Lead Sludge: Most recent sample was 25.13% Tin 56.62% water. Proposed settlement LME price @ $2.45

LME Tin 2.48 - .45 = 2.03

25.13% @ 95% recovery = 23.87% tin recoverable

23.87% x $2.03 = $.485/lb Tin value less processing @ .35/lb = $.135/lb credit. average shipping cost $.075/lb = .06/lb. Sludge bags $26 per 1700 #s = $.153 .06 - .0153 = 4.47 cent/lb

Tin/Lead Content, Purity, and other Factors Required by the Recycling Facility for Acceptance of the Sludge:

Acceptance of the sludge is based on previous representative sample analysis. Content, purity, and other factors are expected to be similar to samples. To be in 1 yd³ superseacks not to exceed 4300 pounds.

PHIBRO-TECH, INC.

Filtercake Recycling-Reuse Process Description - Molex Inc.

1. Nickel Filtercake

- Based on the Material Characterization submitted by Molex, the Nickel Filtercake meets the purity specification for Technical Grade Nickel Carbonate. The Molex material will be slurried, so that it can be spray-dried to a uniform particle size. It will then be packaged and sold to an existing market.

- Based on Phibro-Tech's market requirements, the Molex material will also be dissolved in a Nickel Nitrate intermediate. The Molex material will then be a substitute for nickel metal and sodium carbonate. The dissolved material will be precipitated as Nickel Carbonate, washed, slurried, and spray-dried to a uniform particle size. It will then be packaged and sold to an existing market.

2. Copper Filtercake

- The Copper Filtercake will be dissolved in sulfuric acid and other acidic copper materials. The mixed solution will be purified to remove unwanted metals, such as iron, nickel, and lead. These unwanted metals are generally found in scrap copper metal, for which the Molex material will be a substitute. This process produces Copper Sulfate solution. The product Copper Sulfate Solution is sold to an existing market, usually shipped via bulk tank truck.

3. Tin/Lead Filtercake

- The Tin/Lead Filtercake will be ~~consolidated at Phibro-Tech and then transferred~~ shipped to ECS Refining, located in Terrell, TX. ECS Refining will process the Molex material through a rotary furnace converting the Tin/Lead Filtercake to metal. The molten Tin/Lead metal is further refined to remove unwanted metals, such as iron and copper. The refined metal alloy, called solder, is cast as ingots and sold to an existing market.