



**California Environmental Protection Agency  
Department of Toxic Substances Control**

**STANDARDIZED HAZARDOUS WASTE  
FACILITY PERMIT, SERIES A**

Facility Name: Xstrata Recycling, Inc.  
1695 Monterey Highway  
San Jose, California 95112

Owner Name: Xstrata Copper Canada  
First Canadian Place  
100 King Street West, Suite 2700  
P.O. Box 405  
Toronto, ON, Canada M5X1E3

Operator Name: Xstrata Recycling, Inc.  
1695 Monterey Highway  
San Jose, California 95112

EPA ID Number: CAD 069124717

Effective Date: May 6, 2012

Expiration Date: May 6, 2022

Pursuant to sections 25200 and 25201.6 of the California Health and Safety Code, this Standardized Hazardous Waste Facility Permit, Series A, is hereby issued to Xstrata Recycling, Inc. The Permit consists of 51 pages including this cover page and Attachment "A".

*//Original signed by//*

\_\_\_\_\_  
Edward Nieto, P.E.  
Supervising Hazardous Substances Engineer I  
Used Oil and Tanks Team  
Office of Permitting

Date: April 6, 2012

**Xstrata Recycling, Inc.  
1695 Monterey Highway  
San Jose, California 95112**

**STANDARDIZED HAZARDOUS WASTE FACILITY PERMIT**

**ATTACHMENT "A"**

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## **Part I. DEFINITIONS**

All terms used in this Permit shall have the same meaning as those terms have in the California Health and Safety Code, Division 20, Chapter 6.5, and California Code of Regulations, title 22, division 4.5, unless expressly provided otherwise by this Permit.

1. **“DTSC”** as used in this Permit means the California Department of Toxic Substances Control.
2. **“Facility”** as used in this Permit means all contiguous land and structures, other appurtenances, and improvements on the land used for the treatment, transfer, storage, resource recovery, and disposal or recycling of hazardous waste. A hazardous waste facility may consist of one or more treatment, transfer, storage, resource recovery, disposal or recycling operational units or combinations of these units.

For the purpose of implementing corrective action under California Code of Regulations, title 22, division 4.5, a hazardous waste facility includes all contiguous property under the control of the owner or operator required to implement corrective action.

3. **“Permittee”** as used in this Permit means the Owner and Operator.
4. **“RCRA”** as used in this Permit means the Resource Conservation and Recovery Act (42 U.S.C. §6901 et seq.)
5. **“RCRA hazardous waste”** as used in this Permit has the same definition as in Health and Safety Code section 25120.2.
6. **“Non-RCRA hazardous waste”** as used in this Permit has the same definition as in Health and Safety Code section 25117.9.
7. **“Destination Facility”** as used in this Permit is as defined in California Code of Regulations, title 22, section 66273.9.
8. **“Universal Waste Handler”** as used in this Permit is as defined in California Code of Regulations, title 22, section 66273.9.

## **Part II. DESCRIPTION OF THE FACILITY AND OWNERSHIP**

1. **Owner of Facility:**

Xstrata Copper Canada  
First Canadian Place  
100 King Street West, Suite 2700  
P.O. Box 405  
Toronto, ON, Canada M5X1E3

2. **Owner of Real Property:**

Peninsula Developers  
c/o Levin Enterprises, Inc.  
112 Washington Ave, Suite 250  
Richmond, California 94801

3. **Operator:**

Xstrata Recycling, Inc.  
1695 Monterey Highway  
San Jose, California 95112

4. **Location:**

The Xstrata Recycling Inc. facility (Facility) is located at 1695 Monterey Highway, on the corner of Barnard Avenue and Monterey Highway, in San Jose, California (Figure 1). The site is bordered by Barnard Avenue to the southeast and Monterey Highway to the northeast. The Facility is located in Santa Clara County at latitude 37 degree, 19 minutes, 15 seconds and longitude 121 degrees, 52 minutes, 10 seconds. The Facility is located on approximately 2.2 acres of land zoned Heavy Industrial (HI) by the City of San Jose (Figure 2). The Assessor's Parcel Number for this site is 455-02-042-00.

5. **Description of Facility Operations:**

Operations at the Facility entail the processing of different type of materials for metals recovery including the following: electronic scrap, components, manufacturing byproducts, wastes, concentrates, and residues. Tray furnaces are used to bake materials into a dry friable ash prior to physical processing and sampling. Physical processing consists of shredding, screening, and blending the waste in order to prepare a representative sample of incoming solid materials. The solid materials are subsequently prepared, packaged, and transported off-site for recovery at a primary smelter. Processing of solutions includes chemical stripping, refining, precipitation, and neutralization. Melting is

conducted in gas-fired crucible furnaces and used to partition recoverable metals and slag.

6. Facility History

The site was used for heavy manufacturing operations beginning in the 1930s. In the mid 1960s, several members of the Levin family acquired the property and operated a used equipment sales business affiliated with their nearby ferrous scrap yard. A metal recycling operation was established at this location under the name Micro Metallics Corporation in the early 1970's. The owner sold the business to Noranda Inc., a publicly traded company, in 1984. The underlying property is still held by a private company associated with the Levin family. In 2003, Noranda re-organized its US recycling operations under the name Noranda Recycling Inc. Noranda changed names to Falconbridge and then to Xstrata Copper Canada following a series of mergers and acquisitions. The Facility and business names were changed to Xstrata Recycling Inc. in August 2007 to conform to the new parent company. On November 1, 1994, DTSC issued a Hazardous Waste Facility Permit to the owner/operator with an expiration date of October 30, 2005. However, the Permittee filed an application for new permit in a timely manner and operates under the 1994 permit in accordance with the California Code of Regulations, title 22, section 66270.51 until this permit is issued.

7. Facility Size and Type for Fee Purposes:

This Permit is categorized as a "Series A" Standardized Permit pursuant to Health and Safety Code section 25201.6 and for purposes of Health and Safety Code sections 25205.2 and 25205.19.

8. Closure Cost Estimate

The closure cost estimate (in 2009 dollars) is \$410,007.21.

### **Part III. GENERAL CONDITIONS**

#### **1. Permit Application Documents**

The Standardized Permit Application dated September 2010 titled "Xstrata Recycling Inc., Operations Plan" and submitted to DTSC by the Permittee is hereinafter referred to as the "Standardized Permit Application" and is hereby made a part of this Permit by reference.

#### **2. EFFECT OF PERMIT**

- (a) The Permittee shall comply with the terms and conditions of this Permit and the provisions of the Health and Safety Code and California Code of Regulations (Cal. Code Regs.), title 22, division 4.5. The issuance of this Permit by DTSC does not release the Permittee from any liability or duty imposed by federal or state statutes or regulations or local ordinances, except the obligation to obtain this Permit. The Permittee shall obtain the permits required by other governmental agencies, including but not limited to, those required by the applicable land use planning, zoning, hazardous waste, air quality, water quality, and solid waste management laws for the construction and/or operation of the Facility.
- (b) The Permittee is permitted to store and treat hazardous wastes in accordance with the terms and conditions of this Permit. Any management of hazardous wastes not specifically authorized in this Permit is strictly prohibited.
- (c) Compliance with the terms and conditions of this Permit does not constitute a defense to any action brought under any other law governing protection of public health or the environment, including, but not limited to, one brought for any imminent and substantial endangerment to human health or the environment.
- (d) DTSC's issuance of this Permit does not prevent DTSC from adopting or amending regulations that impose additional or more stringent requirements than those in existence at the time this Permit is issued and does not prevent the enforcement of these requirements against the Permittee.
- (e) Failure to comply with any term or condition set forth in this Permit in the time or manner specified herein is grounds for revocation of this Permit (Cal. Code Regs., tit. 22, §66270.43), and will subject the Permittee to enforcement action and penalties pursuant to Health and Safety Code sections 25187 and 25189.2(b).

- (f) Failure to submit any information or document required in connection with the Permit, or falsification or misrepresentation of any submitted information or document is grounds for revocation of this Permit (Cal. Code Regs., tit. 22, §66270.43), and will subject the Permittee to enforcement action and penalties pursuant to Health and Safety Code sections 25187 and 25189.2(a).
- (g) In case of conflicts between the Operation Plan and the Permit, the Permit conditions take precedence.
- (h) This Permit includes and incorporates by reference any conditions of waste discharge requirements issued to the Facility by the State Water Resources Control Board or any of the California Regional Water Quality Control Boards and any conditions imposed pursuant to section 13227 of the Water Code.

3. Compliance with California Environmental Quality Act (CEQA)

An Initial Study and Negative Declaration have been prepared in accordance with the requirements of Public Resources Code section 21000 et seq. and the CEQA Guidelines, California Code of Regulations, title 14, section 15061(b)(3).

4. Access

- (a) DTSC, its contractors, employees, agents, and/or any United States Environmental Protection Agency representatives are authorized to enter and freely move about the Facility for the purposes of interviewing Facility personnel and contractors; inspecting records, operating logs, and contracts relating to the Facility; reviewing progress of the Permittee in carrying out the terms of Part VI of the Permit; conducting such testing, sampling, or monitoring as DTSC deems necessary; using a camera, sound recording, or other documentary-type equipment; verifying the reports and data submitted to DTSC by the Permittee; or confirming any other aspect of compliance with this Permit, Health and Safety Code, division 20, chapter 6.5, and California Code of Regulations, title 22, division 4.5. The Permittee shall provide DTSC and its representatives access at all reasonable times to the Facility and any other property to which access is required for implementation of any provision of this Permit, Health and Safety Code, division 20 chapter 6.5, and California Code of Regulations, title 22, division 4.5, and shall allow such persons to inspect and copy all records, files, photographs, documents, including all sampling and monitoring data, that pertain to work undertaken pursuant to the entire Permit or undertake any other activity necessary to determine compliance with applicable requirements.

- (b) Nothing in this Permit shall limit or otherwise affect DTSC's right to access and entry pursuant to any applicable State or Federal laws and regulations.

## **PART IV. PERMITTED UNITS AND ACTIVITIES**

This Permit authorizes operation only of the units and activities listed below. The Permittee shall not treat, store or otherwise manage hazardous waste in any unit other than those specified in this Part IV. Any modifications to a unit or activity authorized by this Permit require the written approval of DTSC in accordance with the permit modification procedures set forth in California Code of Regulations, title 22, division 4.5.

### **Unit #1**

#### **Unit Name**

SU-1 Cyanide/Caustic Container Storage

#### **Location**

This Unit is located within the Cyanide Stripping Room, Area 1 (Figure 3).

#### **Activity Type**

Container Storage (S01)

#### **Activity Description**

Cyanide and caustic wastes (Table 1) solutions are stored in containers varying from less than 1-gallon sample bottles to 5 gallon pails to 55 gallon drums. Intermediate bulk containers (up to 600 gallons) are also used. The containers are placed on pallets to prevent contact with the floor. After the chemical treatment process, the supernatant liquid is pumped into clean drums and stored in this Unit.

#### **Physical Description**

This Unit is located within Area 1. Area 1 is a 67 ft x 30 ft rectangular area with a 3 inch berm and is constructed of concrete that is covered with an epoxy coating. The Floor of Area 1 is sloped towards a sump at the north-center wall. Unit 1 is defined as the part of Area 1 not occupied by Unit 6 of this Permit. See Figure 4.

#### **Maximum Capacity**

The maximum permitted storage capacity for this Unit is 1760 gallons.

#### **Waste Types**

Cyanide and spent caustic solutions, listed and spent waste solids, and off-spec/ aged/ surplus chemicals as shown on Table 1

### **Hazardous Waste Codes**

See Table 1 of this Permit.

### **Unit-Specific Special Condition**

All spilled liquid collected from the sump shall be considered and managed as hazardous waste and shall be pumped into the treatment tanks (Unit 6) or storage containers.

### **Unit #2**

#### **Unit Name**

SU-2 Acid Waste Storage

#### **Location**

The location of the Acid Waste Storage is within Area 3 of the Facility (Figure 3).

#### **Activity Type**

Container Storage (S01)

#### **Activity Description**

This Unit is designated to store neutral and acid hazardous waste such as waste acid, potassium iodide and neutral solutions, and slag generated from the treatment of acid and cyanide bearing waste. The waste solutions may be stored in various containers in sizes ranging from less than 1-gallon sample bottles up through 5-gallon pails to 55-gallon drums. The slag may be stored in 5-gallon pails up to one cubic yard boxes.

#### **Physical Description**

This Unit is approximately a 50 ft x 16 ft, rectangular area located inside Area 3. The concrete floor of the acid storage room is coated with a compatible epoxy and a sump is provided in the center of the room. The floor is sloped towards the sump to facilitate the collection of spills. The containers holding acid solution are stored in secondary containment pallets and containers holding slag are placed on standard pallets. See Figure 5.

### **Maximum Capacity**

The maximum permitted storage capacity for this Unit is 1,540 gallons of liquid hazardous waste and 660 gallons of solid hazardous waste.

### **Waste Types**

Spent acid and neutral solutions, off-spec/ aged/ surplus chemicals, and slag, as shown on Table 1.

### **Hazardous Waste Codes**

See Table 1 of this Permit.

### **Unit-Specific Special Condition**

The Permittee shall place all containers holding liquid hazardous waste on secondary containment pallets.

### **Unit #3**

#### **Unit Name**

SU-3 Solid Waste Storage

#### **Location**

The SU-3 Solid Waste Storage unit is located within Area 4 of the Facility. (Figure 3)

#### **Activity Type**

Container Storage (S01)

#### **Activity Description**

This unit stores solid hazardous wastes such as sludge, filters, resins and wipes, bag house dusts, slag, solder dross, batteries, and Universal Waste Electronic Devices (UWED's). Hazardous waste may be stored in a variety of containers including 5 to 10 gallon pails, 20 to 55 gallon drums, and Intermediate Bulk Container (IBC) bags, boxes and bins of up to 5 cubic yards.

### **Physical Description**

The Unit is a 34 ft x 54 ft rectangular area covered by a roof structure. The base of the storage area is covered with concrete and sealed with a chemical resistant coating. The containers are placed on pallets to prevent contact with the run-off or run-on. The area is enclosed by a wall on the southern side and by a tarp on the western side. See Figure 6.

### **Maximum Capacity**

The maximum permitted storage capacity for this Unit is 200 cubic yards.

### **Waste Types**

Listed and spent waste solids and characteristic sludge and by-products, as shown in Table 1.

### **Hazardous Waste Codes**

See Table 1 of this Permit.

### **Unit-Specific Special Condition**

In this Unit, the Permittee is allowed to store only solid waste without free liquid as demonstrated by EPA Method 9095 (Paint Filter Liquids Test). The Permittee shall not store any other types of wastes in this Unit.

### **Unit #4**

#### **Unit Name**

SU-4 Spent Cyanide Treatment and Storage Tanks

#### **Location**

The SU-4 Spent Cyanide Treatment and Storage Tanks is Area 5 of the Facility. (Figure 3)

#### **Activity Type**

Tank Treatment (T01)

### **Activity Description**

The spent solution resulting from the precipitation and stripping operation from Unit #6 is transferred to this Unit, which is the designated storage area for cyanide and caustic wastes generated in the Cyanide Stripping Room. Four tanks (Z1, Z2, Z3, and Z4) are used for treating and storing spent Cyanide and compatible caustic solutions. Once treatment is completed, the Facility ships the solution off-site in drums, IBCs, or bulk tanker trucks to another authorized treatment, storage and disposal (TSD) facility. When unloading waste from the tank to a tanker truck; the tanker truck is placed in the yard area adjacent to Unit #4. The Facility may also move the solution to Unit #8 in drums or IBCs.

### **Physical Description**

This Unit is a 21ft x 34 ft rectangular area with 4 storage and treatment tanks. The floor of this area is constructed of concrete that is coated with an epoxy sealer. The entire area is covered by a roof to prevent entry of rain. Tarps and a wall on two sides of the area minimize wind-blown rain from entering the Unit. The total floor area is approximately 714 sq. ft. (See Figure 7). Tanks Z1 and Z2 are used for treatment and Tanks Z3 and Z4 are used for storage. The Permittee also plans to install a rotary contactor in Tank Z2 to accelerate the rate of treatment. The rotary contactor will consist of a drum or set of discs on a slowly rotating shaft mounted within the confines of the tank. See Figure 8 and Table 2 for details of the tanks.

### **Maximum Capacity**

See Table 2 for maximum capacity of storage and treatment of each tank.

### **Waste Types**

Spent cyanide and caustic solutions, characteristic sludge and by-products as shown in Table 1.

### **Hazardous Waste Codes**

See Table 1 of this Permit.

### **Unit-Specific Special Condition**

No later than thirty (30) calendar days after the installation of the rotary contactor, the Permittee shall submit the following to DTSC: (1) a certification by an independent, qualified professional engineer, registered in the State of California, which must verify that the rotary contactor was installed in accordance with the approved Standardized Permit Application and shall be operated in accordance with the approved Standardized

Permit Application and this Permit ; (2) as-is drawings of the modified tank; and (3) photos showing the modified Tank Z2.

## **Unit #5**

### **Unit Name**

SU-5 Secondary Waste Storage

### **Location**

The SU-5 Secondary Waste Storage is Area 6 of the Facility. (Figure 3)

### **Activity Type**

Container Storage (S01)

### **Activity Description**

This Unit is used to store solid or liquid hazardous wastes, batteries, Universal Waste Electronic Devices (UWEDs), and other compatible material. The wastes are stored using various storage devices including 5 to 20 gallon pails, 5 to 55-gallon steel or plastic drums, bulk boxes and bags, and roll off-bins (up to 30 cubic yard). Liquid wastes in containers are placed on secondary containment pallets.

### **Physical Description**

This Unit is 19 ft x 21ft with a roof. The floor of this area is constructed of concrete that is coated with an epoxy sealer. Walls or tarps and berms are provided on three sides to minimize rain from entering the Unit. See Figure 9

### **Maximum Capacity**

The maximum permitted storage capacity of this Unit is 50 cubic yards.

### **Waste Types**

Listed and spent waste solids, characteristic sludge and by-products, and off-spec/ aged/ surplus chemicals, as shown in Table 1.

### **Hazardous Waste Codes**

See Table 1 of this Permit.

### **Unit-Specific Special Condition**

The Permittee shall place all containers holding liquid hazardous waste on secondary containment pallets.

### **Unit #6**

#### **Unit Name**

TU-1 Cyanide Treatment Tanks

#### **Location**

The Unit is located within the Cyanide Stripping Room, Area 1. (Figure 3)

#### **Activity Type**

Tank Treatment (T01)

#### **Activity Description**

Cyanide treatment is performed in different batches and when ready for processing, the waste solution is pumped into one of the eight (8) process tanks. The container that held the cyanide must be triple rinsed to meet empty container criteria in the California Code of Regulations, title 22, section 66261.7 and the rinsed water is introduced into the tank where the waste was pumped. The pH of the solution is checked prior to transfer to assure compatibility and it is adjusted to 12 or above by adding sodium hydroxide as the first treatment step. A portable electroplating unit may be placed in any of the tanks to recover metals. Alternatively or as polishing step, chemical precipitating agents may be added to recover them. Heat and compressed air or mechanical agitation may also be supplied to increase reaction rates.

After the reaction is complete, the solids are allowed to settle to the tank bottom. The supernatant liquid may be filtered, in order to recover solid particulates. The filter is used to prevent solids from transferring when pumping the supernatant liquid into empty containers for storage. The filter, when it has reached its filtering capacity, must be treated the same way as the sludge. The residual sludge and filter is transferred to a different container for further processing, at Unit #10, or for shipment to an authorized TSDF.

### **Physical Description**

The Unit is composed of eight (8) tanks ranging in capacity from 50 gallons to 449 gallons. The tanks are rectangular in shape and constructed of polypropylene, fiberglass, and/or fiberglass reinforced plastic. Secondary containment is provided by Unit 1, which has an epoxy covered concrete floor with berm as explained in the Physical Description for Unit 1. See Table 2 for exact dimension and capacity of each tank and Figure 4 for the exact location within Area 1.

### **Maximum Capacity**

See Table 2 for maximum capacity of storage and treatment of each tank.

### **Waste Types**

Cyanide and spent caustic solutions, listed and spent waste solids, and off-spec/ aged/ surplus chemicals, as shown in Table 1.

### **Hazardous Waste Codes**

See Table 1 of this Permit.

### **Unit #7**

#### **Unit Name**

TU-2 Acid Processing Room

#### **Location**

TU-2 Acid processing Room is Area 2 of the Facility. (Figure 3)

#### **Activity Type**

Tank Treatment (T01)

#### **Activity Description**

The acid and neutral solutions are subject to neutralization and chemical precipitation processes to recover precious metals. The acid/neutral solutions are transferred into the acid processing tank or containers. A suitable reagent is added to adjust pH and/or precipitate metals. After the reaction is complete, the barren solution is pumped through a filter into containers; the settled sludge is removed and moved to another part of the Facility. In some cases when the solution contains more than one recoverable

metal, the precipitation may be conducted selectively to recover a particular precious metal.

### **Physical Description**

This Unit consists of one 115-gallon polypropylene treatment tank (Tank A1) and a covered area for treatment and storage of two 55-gallon containers in Area 2, the Acid Processing Room. The room measures 30 feet by 24 feet and has a concrete floor covered with a layer of epoxy and a 3 inch berm. A 3.4 cubic feet sump in the middle of the room is used for secondary containment. The room also has an acid scrubber system that removes acids from the air collected from the tank and containers and neutralizes it with a caustic solution. See Figure 10 and Figure 11.

### **Maximum Capacity**

The maximum storage capacity of Tank A1 is 90 gallons. The maximum storage capacity for the covered area is two (2) 55-gallon drums.

The maximum treatment capacity of this Unit is 665 gallons per month.

### **Waste Types**

Spent acid and neutral solutions, characteristic sludge and by-products, listed and spent waste solids, and off-spec/ aged/ surplus chemicals, as shown in Table 1.

### **Hazardous Waste Codes**

See Table 1 of this Permit.

### **Unit #8**

#### **Unit Name**

TU-3 Tray Furnaces

#### **Location**

Unit TU-3 Tray Furnaces is Area 8 of the Facility. (Figure 3)

#### **Activity Type**

Thermal Unit (X03)

### **Activity Description**

Metal-bearing materials mixed with combustible or high moisture content is treated in two indirect-fired natural gas tray furnaces. This process results in a dry friable residue, suitable for either smelting or milling and sampling. Baking/roasting of solids containing combustible organics, evaporation of moisture from sludge and/or evaporation of water from neutral and alkaline solutions are conducted in order to produce a dry solid amenable to further recovery operations. Tray furnaces are operated in roasting mode to roast materials with combustible organics such as wipes, adhesives, resin, filter media, etc. Material in tray is placed inside the primary chamber and heated to over 500 degrees Fahrenheit. The secondary chamber is operated at a higher temperature of 1600 degrees Fahrenheit to destroy organic emissions. Tray furnaces are operated in a drying mode to evaporate moisture from inorganic sludge. These furnaces are also operated in evaporation mode to concentrate alkaline, neutral and/or cyanide solutions.

### **Physical Description**

This Unit consists of two (2) tray furnaces (See Figure 12). Each tray furnace consists of a primary chamber, a secondary or afterburner chamber, and a dropout chamber. The primary chamber is heated by a set of burners that bake, roast or dry materials held in trays. The secondary chamber, also referred to as the afterburner, serves as an abatement device destroying organic vapors and gases that are formed in the primary chamber from roasting combustible materials such as filter media, resins, adhesives, electronic scrap, etc. The gases from the secondary chamber pass through a drop out chamber, which allows any large embers to drop out of the gas stream without passing on to the bag house. The bag house collects particulates before releasing the cleaned gas stream to the atmosphere. Each furnace currently has a single primary chamber with two burners and two side by side racks. The Permittee plans to install a center partition and modify the burners, doors, and controls so that each side of Tray Furnace 2 can operate as an independent chamber. As a separate or concurrent alteration, the Permittee plans to modify the doors and racking to allow stacking of trays for a maximum of ten (10) trays per primary chamber.

### **Maximum Capacity**

See Table 3 for maximum treatment capacity.

### **Waste Types**

Cyanide and spent caustic solutions, spent acid and neutral solutions, listed and spent waste solids, characteristic sludge and by-products, and off-spec/ aged/ surplus chemicals, as shown in Table 1.

### **Hazardous Waste Codes**

See Table 1 of this Permit.

### **Unit-Specific Special Condition**

No later than sixty (60) calendar days after the modification to Tray Furnace 2, the Permittee shall submit the following to DTSC: (1) certification by an independent, qualified professional engineer, registered in the State of California, which must verify that the tray furnace was modified in accordance with the approved Standardized Permit Application and shall be operated in accordance with the approved Standardized Permit Application and this Permit; (2) as-is drawings of the modified Tray Furnace; and (3) photos showing the modified Tray Furnace.

### **Unit #9**

#### **Unit Name**

TU-4 Crucible Furnaces

#### **Location**

TU-4 Crucible Furnaces unit is Area 9 of the Facility. (Figure 3)

#### **Activity Type**

Thermal Unit (X03)

#### **Activity Description**

This Unit processes scrap metal, other exempt material, and hazardous wastes in crucible furnaces. These furnaces use an indirect gas flame to melt into a molten bath for sampling and refining. Fluxes may be added to facilitate separation of desired metals from byproduct metal oxide slag. Copper may be added to form a homogeneous melt. A sample may be drawn for assay and value settlement with the generator. The melt is cast into ingots.

#### **Physical Description**

This Unit consists of four (4) indirect-fired natural gas crucible furnaces where sludges, dusts, pellets, and other solids are melted into ingots of different alloys. All furnaces share a common ventilation system. See Figure 13.

### **Maximum Capacity**

See Table 3 for maximum treatment capacity.

### **Waste Types**

Listed and spent waste solids, characteristic sludge and by-products, and off-spec/ aged/ surplus chemicals, as shown in Table 1.

### **Hazardous Waste Codes**

See Table 1 of this Permit.

### **Unit-Specific Special Condition**

The Permittee may manage the slags derived from processing scrap metal or characteristic wastes in this Unit as exempt by-product when shipped off-site for use as an ingredient in other industrial processes. Otherwise, the Permittee shall manage the slags as a hazardous waste and shall ship the slags to an authorized TSD facility.

### **Unit #10**

#### **Unit Name**

TU-5 Refinery Furnace

#### **Location**

The TU-5 Refinery Furnace unit is Area 10 of the Facility. (Figure 3).

#### **Activity Type**

Thermal Unit (X03)

#### **Activity Description**

The refinery furnaces are used to melt metals and sludge batches that are too small or high grade for the large crucibles. Materials for this process are typically sludge obtained by precipitation, stripping of cyanide, caustic, neutral, and/or acidic solutions. Precious metal bars, cones, or pellets are the primary product of the operation. The ingots are sold, or further process using an aqua regia process in Unit #7.

### **Physical Description**

This Unit consists of two (2) refinery furnaces. The furnaces share a common ventilation system and use an indirect natural gas flame to melt metals into a molten bath for sampling and refining. See Figure 14.

### **Maximum Capacity**

See Table 3 for maximum treatment capacity.

### **Waste Types**

Listed and spent waste solids, characteristic sludge and by-products, and off-spec/ aged/ surplus chemicals, as shown in Table 1.

### **Hazardous Waste Codes**

See Table 1 of this Permit.

### **Unit Specific Special Condition**

The Permittee may manage the slags derived from processing scrap metal or characteristic wastes in this Unit as exempt by-product when shipped off-site for use as an ingredient in other industrial processes. Otherwise, the Permittee shall manage the slags as a hazardous waste and shall ship the slags to an authorized disposal facility.

### **Unit #11**

#### **Unit Name**

TU-6 Ball Mills, Screen and Sampler 1

#### **Location**

Unit TU-6 Ball Mills unit within Area 11 of the Facility. (Figure 3)

#### **Activity Type**

Mechanical Processing (X02)

#### **Activity Description**

Material is loaded into the mill and tumbled to reduce the particle size for subsequent screening and sampling. The ball mill feed area, discharge area and conveyors are

equipped with a ventilation system and bag house to collect dust generated during material feed, grinding and conveying activities. Additional information is provided in the milling, screening, and sampling diagram, Figure 15, incorporated herein by reference.

### **Physical Description**

This Unit consists of two ball mills inside an enclosure. Each ball mill is a cylindrical steel chamber containing steel or ceramic balls that is used for grinding brittle material. A conveyor belt attached to the ball mills is used to convey materials to a screen used to segregate fines from coarse materials. In addition a rotary sampler may take a full cut of a falling stream of material. Each cut is directed into a sample chute. After the entire lot has passed through the rotary divider, the collected sample may be fed in an iterative process to further reduce the sweep sample size. See Figure 16 and Figure 17.

### **Maximum Capacity**

See Table 3 for maximum treatment capacity.

### **Waste Types**

Listed and spent waste solids and characteristic sludge and by-products, as shown in Table 1.

### **Hazardous Waste Codes**

See Table 1 of this Permit.

### **Unit #12**

#### **Unit Name**

TU-7 Mechanical and Miscellaneous Processes

#### **Location**

Unit TU-7 Mechanical and Miscellaneous Processes unit is within Area 11 of the Facility. (Figure 3)

#### **Activity Type**

Mechanical Processing (X02)

### **Activity Description**

This Unit processes a variety of material including sweeps/dust, slag, dross and other solid hazardous wastes, UWEDs, Scrap Metal and other exempt material. Material is loaded into the muller or mills to reduce the particle size for subsequent screening and sampling. The blenders may also be used for dust control. In this process, a wetting agent/binder and the dusty material will be combined in a drum or blender. The drum is then tumbled to mix material to generate a less dispersible damp material.

### **Physical Description**

This Unit currently consists of one pan muller, two screens, two blenders, and one small rotary sampler. The Permittee plans to add 2 ball mills (designated as BM-3 and BM-4) to this Unit.

The pan muller performs a similar function as that of the ball mills and uses two rotating grinding wheels to crush materials in a pan. Screens (large and small) are used to separate materials into coarse and fine fractions and the blenders are used to mix and homogenize materials prior to sampling. See Figure 16 and Figure 17

### **Maximum Capacity**

See Table 3 for maximum treatment capacity.

### **Waste Types**

Listed and spent waste solids and characteristic sludge and by-products, as shown in Table 1.

### **Hazardous Waste Codes**

See Table 1 of this Permit.

### **Unit-Specific Special Condition**

No later than sixty (60) calendar days after installation of the ball mills, the Permittee shall submit the following to DTSC: (1) a certification by an independent, qualified professional engineer, registered in the State of California, which must verify that the ball mills were installed in accordance with the approved Standardized Permit Application and shall be operated in accordance with the approved Standardized Permit Application and this Permit; (2) as-is drawings of the modified Unit showing the configuration and location of each piece of equipment; and (3) photos showing the modified Unit.

## **PART V. SPECIAL CONDITIONS**

1. The Permittee is prohibited from conducting any hazardous waste transfer, storage, treatment, or other management activity unless it is specifically described in this Permit or otherwise authorized by DTSC.
2. Containers holding hazardous waste shall be stored only in the authorized areas designated in Part IV of this Standardized Permit. Any non-hazardous waste or universal waste that is stored in a designated hazardous waste storage area as provided by this Permit shall be subject to the conditions of this Permit, including volume calculations, compatibility and inspections.
3. In the event any cracks, gaps, or tears are detected in any hazardous waste management unit, repairs shall be initiated as soon as possible and completed within one (1) week of discovery of the problem. The Permittee shall notify DTSC within twenty-four (24) hours whenever containment problems are found. Within seven (7) days of discovery of the problem, the Permittee shall notify DTSC in writing of corrective measures that have been taken.
4. In the event of any cracks, leaking, or visible damage to a containment pallet, the containment pallet shall be immediately removed from service. The Permittee shall either repair or replace the containment pallet.
5. The Permittee shall not conduct any hazardous waste management activities that would require a permit to be issued under RCRA or a RCRA-equivalent Hazardous Waste Facility Permit issued by DTSC.
6. For the purpose of compliance with the permitted maximum capacity limitations, all containers in the permitted Units are assumed to be full, and all hazardous waste that is stored or located in an authorized unit shall be included in the calculation for that unit, including any hazardous waste that is covered by the transfer facility exemption under California Code of Regulations, title 22, section 66263.18.
7. When generators choose to ship universal waste (i.e. batteries, sodium lamps, mercury containing lamps, electronic devices, and Cathode Ray Tubes (CRTs) under a uniform hazardous waste manifest, the Permittee may accept the manifested universal waste if it is accompanied by a generator's certification stating that the waste is hazardous only due to normal battery, lamp, or CRT contents as defined in California Code of Regulations, title 22, sections 66273.2, 66273.5, and 66273.6, and not due to the presence of other hazardous waste or waste constituents. The generator's certification shall be prepared in accordance with California Code of Regulations, title 22, section 66270.11(d).

8. Only employees of the Permittee who are fully trained in the Facility's operations and procedures may perform the treatment and storage operations at the Facility.
9. Loading and Unloading Areas
  - (a) Prior to conducting transfer activities in any loading and unloading area, the Permittee shall ensure that the loading and unloading area has a containment system with sufficient volume to contain 10% of the largest transport vehicle (i.e., vacuum truck, tanker trailer, etc.) or container to be used.
  - (b) If, the Permittee wants to modify an existing loading and unloading area or construct a new loading and unloading area, the Permittee shall proceed in accordance with Special Conditions 9(c) through (g) in order to satisfy Special Condition 9(a).
  - (c) No later than sixty (60) calendar days prior to commencing the construction of any loading and unloading area, the Permittee shall submit to DTSC, for written approval, construction plans and a schedule detailing the dates and length of time required for the planned construction.
  - (d) The Permittee shall obtain written approval from DTSC regarding any significant deviations from the approved construction plans at least fourteen (14) calendar days prior to any construction activities.
  - (e) No later than sixty (60) calendar days after completing construction of any loading and unloading area and at least fourteen (14) calendar days before the Permittee commences any loading and unloading activities in the loading and unloading area, the Permittee shall submit to DTSC a Professional Engineer's certification stating that the loading and unloading area unit has been constructed in accordance with the approved construction plans.
  - (f) No later than one hundred and twenty (120) calendar days after completing construction of the loading and unloading area, the Permittee shall submit to DTSC as-built drawings of the loading and unloading area.
  - (g) The Permittee shall notify DTSC, in writing, at least fourteen (14) calendar days before the Permittee commences any loading and unloading activities in the newly constructed area to allow DTSC the opportunity to inspect the loading and unloading area. If DTSC declines to inspect or does not respond to the Permittee's written notification, the Permittee may commence the loading and unloading activities in accordance with California Health and Safety Code, section 25200.19 in the newly constructed area at the end of the 14-day period.

10. The Permittee shall not accept or manage any hazardous waste streams other than those shown in Table 1.
11. The Permittee shall not manage specific waste streams at any locations other than those shown in Table 1.

## **Part VI. CORRECTIVE ACTION**

1. In the event the Permittee identifies an immediate or potential threat to human health and/or the environment, discovers new releases of hazardous waste and/or hazardous constituents, or discovers new Solid Waste Management Units (SWMUs) not previously identified, the Permittee shall notify DTSC orally within 24 hours of discovery and notify DTSC in writing within ten (10) days of such discovery summarizing the findings including the immediacy and magnitude of any potential threat to human health and/or the environment.
2. DTSC may require the Permittee to investigate, mitigate and/or take other applicable action to address any immediate or potential threats to human health and/or the environment and newly identified SWMUs or releases of hazardous waste and/or hazardous constituents. If and when corrective action is required at the Facility, the Permittee shall conduct corrective action under either a Corrective Action Consent Agreement or an Enforcement Order for Corrective Action issued by DTSC pursuant to Health and Safety Code sections 25187 and 25200.10.
3. To the extent that work being performed pursuant to Part VI of the Permit must be done on property not owned or controlled by the Permittee, the Permittee shall use its best efforts to obtain access agreements necessary to complete work required by this Part of the Permit from the present owner(s) of such property within 30 days of approval of any workplan for which access is required. "Best efforts" as used in this paragraph shall include, at a minimum, a certified letter from the Permittee to the present owner(s) of such property requesting access agreement(s) to allow the Permittee and DTSC and its authorized representatives access to such property and the payment of reasonable sums of money in consideration of granting access. The Permittee shall provide DTSC with a copy of any access agreement(s). In the event that agreements for the access are not obtained within 30 days of approval of any work plan for which access is required, or of the date that the need for access becomes known to the Permittee, the Permittee shall notify DTSC in writing within 14 days thereafter regarding both efforts undertaken to obtain access and its failure to obtain such agreements. In the event DTSC obtains access, the Permittee shall undertake approved work on such property. If there is any conflict between this permit condition on access and the access requirements in any agreement entered into between DTSC and the Permittee, this permit condition on access shall govern.
4. Nothing in Part VI of the Permit shall be construed to limit or otherwise affect the Permittee's liability and obligation to perform corrective action including corrective action beyond the facility boundary, notwithstanding the lack of access. DTSC may determine that additional on-site measures must be taken to address releases beyond the Facility boundary if access to off-site areas cannot be obtained.

## **TABLES**

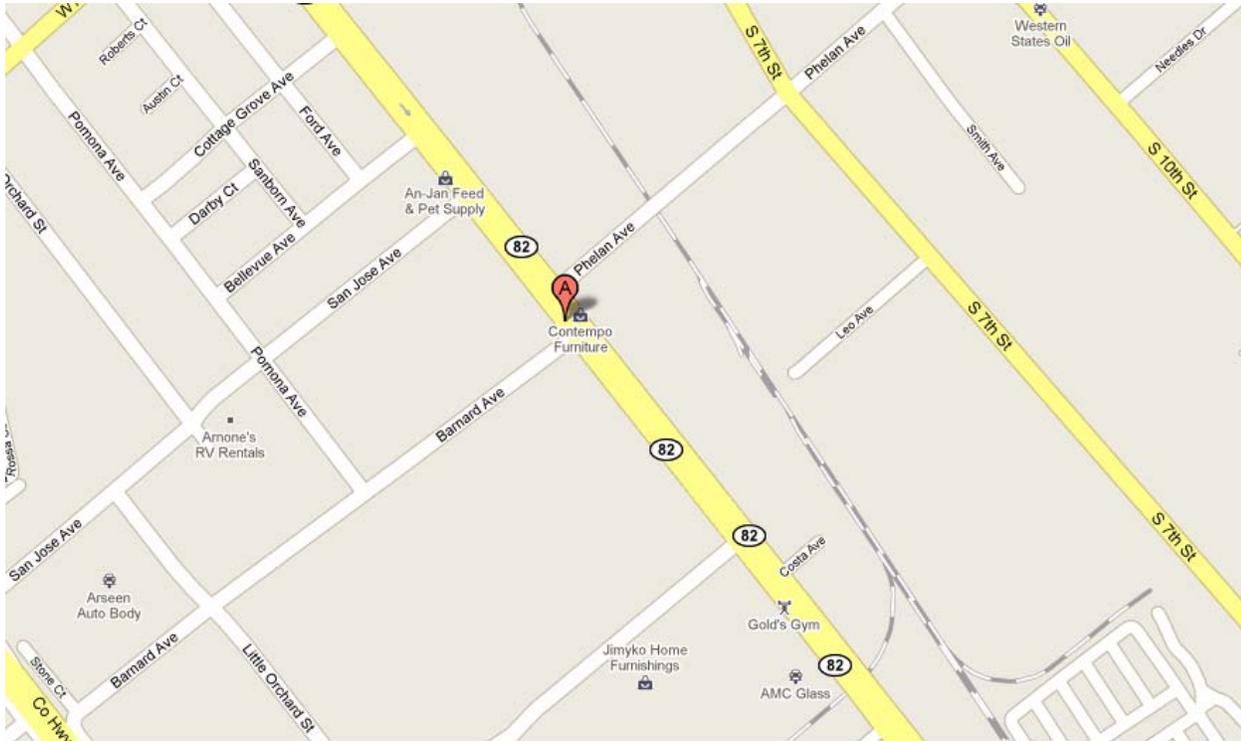
<b>Table 1</b>					
<b>Hazardous Waste Stream Descriptions and Locations</b>					
<b>Waste Stream</b>	<b>EPA Waste Code</b>	<b>California Waste Code</b>	<b>Specific Gravity</b>	<b>pH Range</b>	<b>Unit No.</b>
<i>Cyanide and Spent Caustic Solutions</i>	D002, D003, D004, D005, D006, D007, D008, D010, D011, F007, F009	121, 122, 123, 131, 132, 135, 541, 551, 711, 721, 722, 723, 724, 726, 727, 728	1.0 - 1.2	pH > 10 Soluton with free cyanide. pH > 4 Solutions with no free cyanide.	Unit 1, Unit 4, Unit 6, and Unit 8
<i>Spent Acid and Neutral Solutions</i>	D001, D002, D004, D005, D006, D007, D008, D010, D011	131, 132, 135, 541, 551, 721, 722, 723, 724, 726, 727, 728, 791, 792	1.0 - 1.2	pH < 10	Unit 2, Unit 7, and Unit 8
<i>Listed and Spent Waste Solids</i>	D001, D002, D003, D004, D005, D006, D007, D008, D009, D010, D011, F002, F003, F005, F006, F007, F008, F009, K069	162, 171, 172, 181, 272, 281, 342, 352, 411, 421, 431, 441, 491, 571, 581, 591	N/A	N/A	Unit 1, Unit 2, Unit 3, Unit 5, Unit 6, Unit 7, Unit 8, Unit 9, Unit 10, Unit 11, and Unit 12
<i>Characteristic Sludge and By-Products</i>	N/A due to recycling exemptions	171, 172, 181, 342, 411, 421, 431, 441, 491, 541, 551, 571, 581, 591	N/A	N/A	Unit 3, Unit 4, Unit 5, Unit 7, Unit 8, Unit 9, Unit 10, Unit 11, and Unit 12
<i>Off-Spec/ Aged/ Surplus Chemicals</i>	N/A due to recycling exemptions	121, 123, 131, 132, 135, 141, 181, 281, 331, 342, 352, 551, 711, 721, 722, 723, 724, 726, 727, 728	N/A	N/A	Unit 1, Unit 2, Unit 5, Unit 6, Unit 7, Unit 8, Unit 9, Unit 10

**Table 2**  
**Treatment and Storage Tanks**

Unit No.	Tank No.	Service Date	Material of Construction	Inside Dimensions (in.)	Design Capacity (gal.)	Maximum Storage Capacity (gal.)	Maximum Treatment Rate (gal./month)	Wall Thickness (in.)
Unit 4	Z1	1985	Stainless Steel	144x48x54	1616	1436	14,810	3/16
	Z2	1985	Stainless Steel	144x54x52	1750	1548		3/16
	Z3	1985	Steel	78x71x83	1990	1846		1/4
	Z4	1985	Steel	78x71x82	1966	1822		1/4
Unit 6	T1	2011	Polypropylene	80x36x36	449	374	2083	3/4
	T2	1977	Polypropylene and FRP	42x30x30	164	131		3/8
	T3	1977	Polypropylene Only	42x30x30	164	131		3/8
	T4	1977	Polypropylene and FRP	48x36x36	269	225		3/8
	T5	1977	Polypropylene and FRP	48x36x36	269	225		3/8
	T6	1977	Polypropylene and FRP	48x36x36	269	225		3/8
	T7	1974	Polypropylene and FRP	80x36x36	449	374		3/8
	T8	1977	Polypropylene Only	28x23x18	50	30		1/2
Unit 7	A1	1990	Polypropylene	21x45x28	115	90	665	1/2

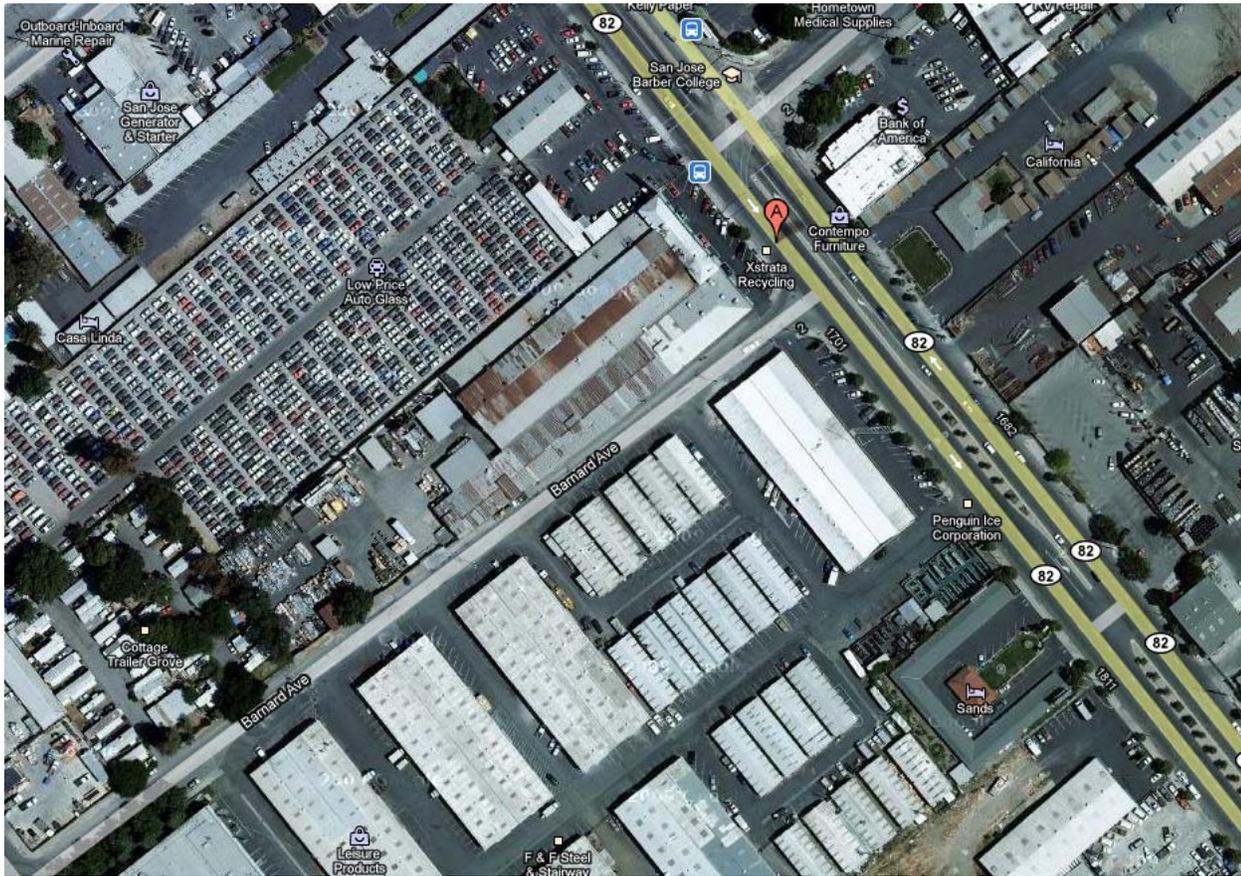
Table 3 Miscellaneous Processing Units				
Unit No.	Equipment Name	Equipment Number	Maximum Treatment (Pounds/Hour)	Dimensions
Unit No. 8	Tray Furnaces	TF-1	Mode 1 --- 250	80" W x 276" L x 108" H
			Mode 2 --- 500	
			Mode 3 --- 500	
		TF-2	Mode 1 --- 400	96" W x 336" L x 10' 6" H
			Mode 2 --- 800	
			Mode 3 --- 500	
Unit No. 9	Crucible Furnace	A	2,000	48" diameter x 60" high
		B	1,500	48" diameter x 48" high
		C	1,500	48" diameter x 48" high
		D	1,000	48" diameter x 48" high
Unit No. 10	Refinery Furnaces	RF-1	75	18" diameter x 24" high
		RF-2	300	32" diameter x 36" high
Unit No. 11	Ball Mill, Screen and Rotary Sampler	BM-1	2,000	48" diameter x 60" Long
		BM-2	2,000	48" diameter x 60" Long
		BM-Screen	6,000	60" diameter x 64" high
		Sampler 1	6,000	24" diameter x 48" high
Unit No. 12	Mechanical Processing Equipment	Muller	10,000	76" diameter
		Small Screen		31" diameter
		Large Screen		48" diameter
		Blender		82" diameter x 114" high
		Drum Blender		55 gallon drum
		Rotary Sampler 2		16" diameter x 36" high
		BM-3		30" diameter x 42" long
		BM-4		16" diameter x 24" long

## **FIGURES**



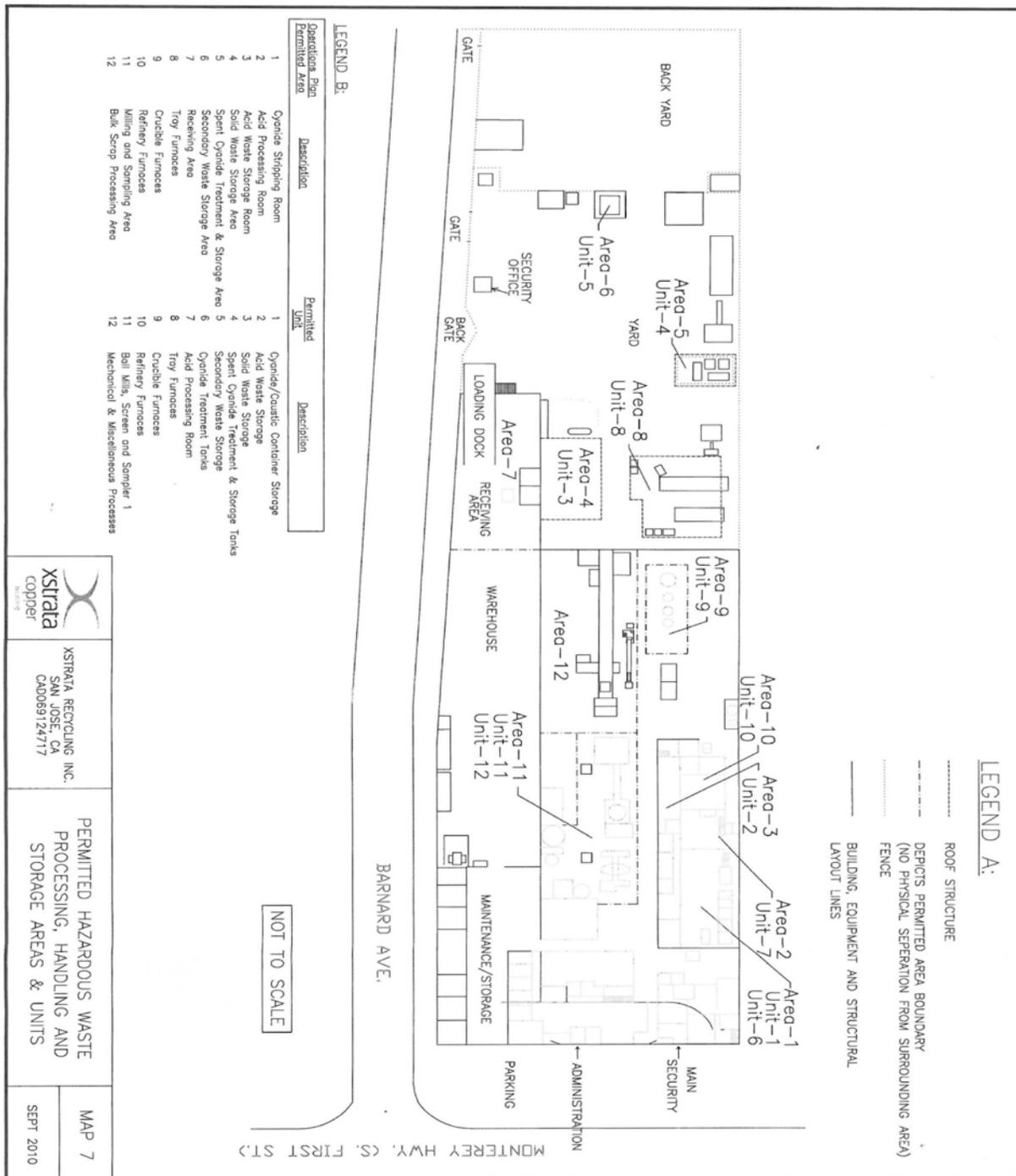
**Figure 1**

**Location of Xstrata Recycling Inc.  
1695 Monterey Highway  
San Jose, California 95112**



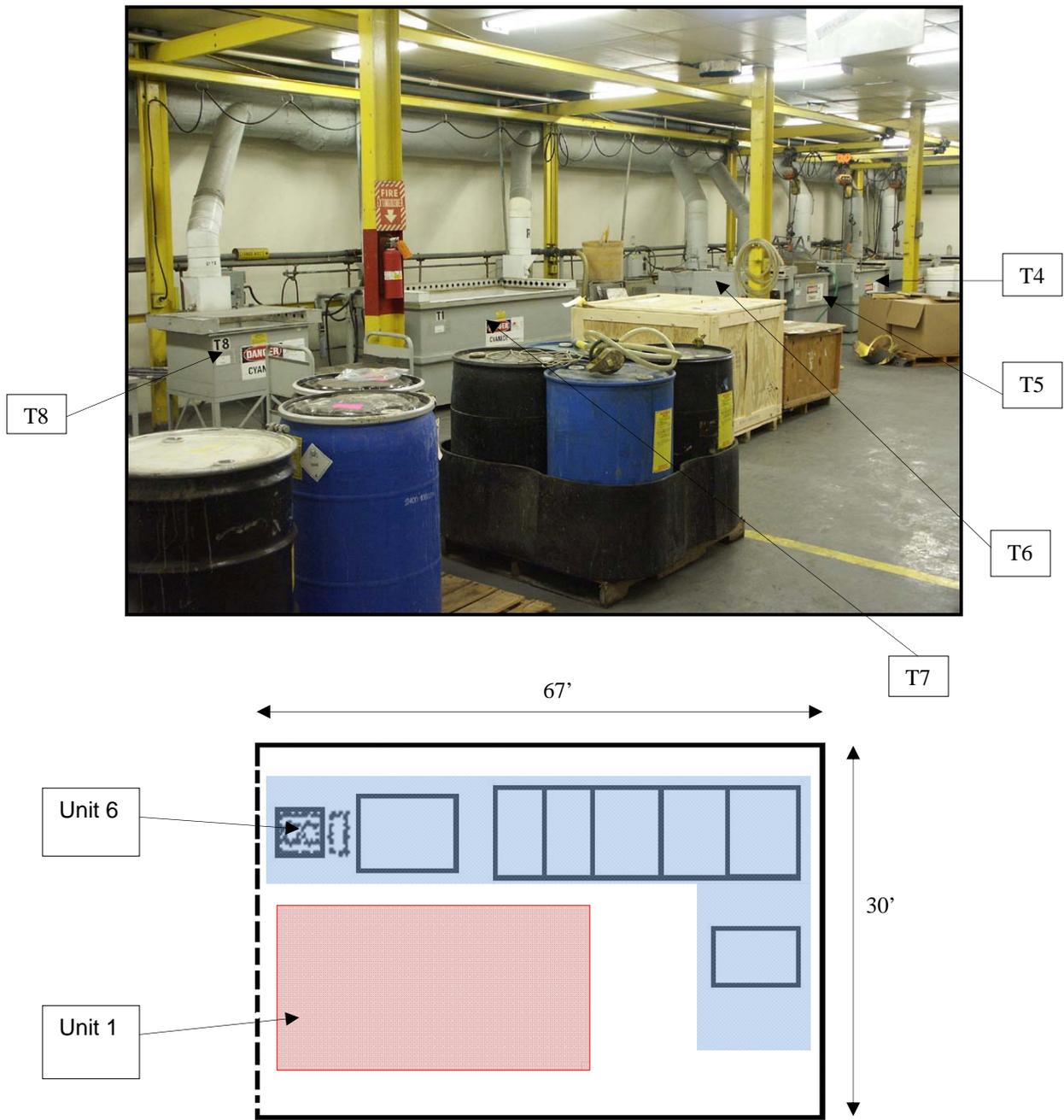
**Figure 2**

**Aerial Overview Photo of Xstrata Recycling Inc.  
1695 Monterey Highway  
San Jose, California 95112**



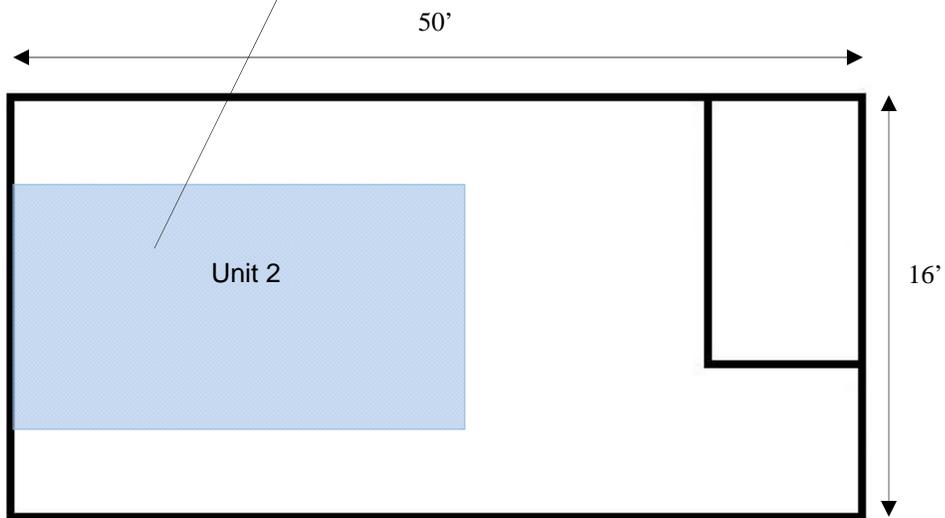
**Figure 3**

**Xstrata Recycling Inc. – Plot Plan**



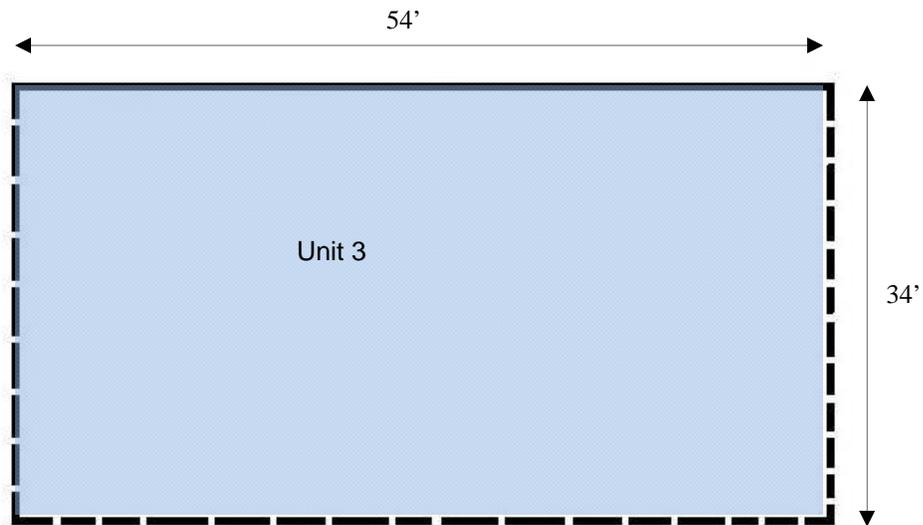
**Figure 4**

**Xstrata Recycling Inc. – Unit 1 and Unit 6**



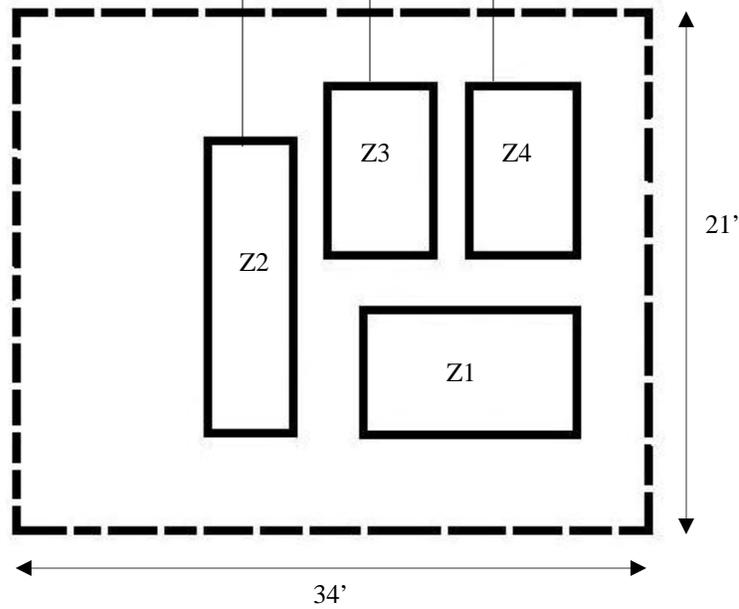
**Figure 5**

**Xstrata Recycling Inc. – Unit 2**



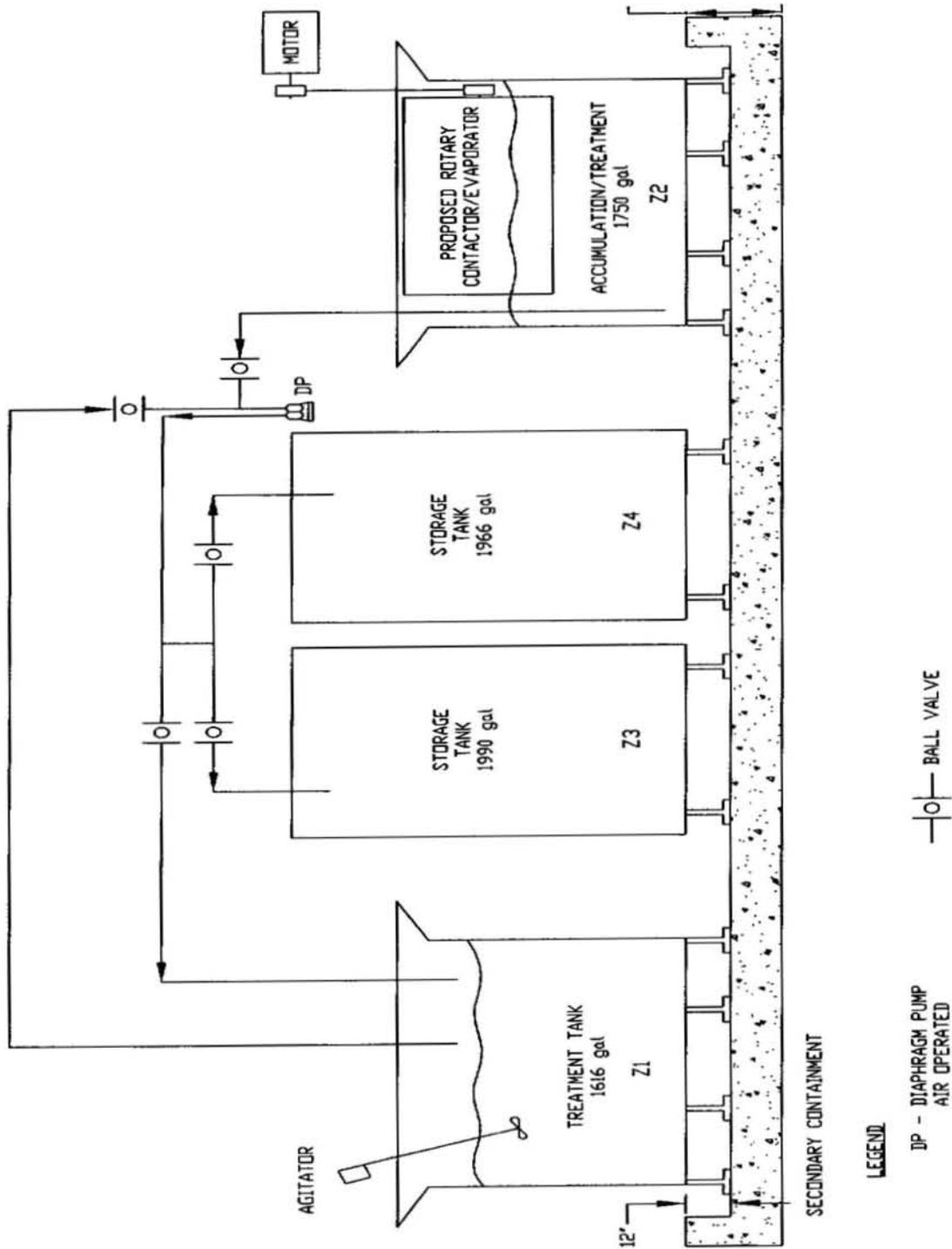
**Figure 6**

**Xstrata Recycling Inc. – Unit 3**



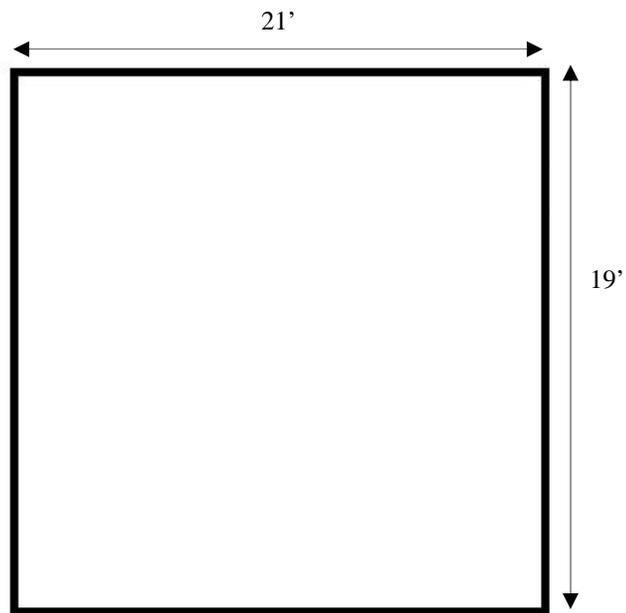
**Figure 7**

**Xstrata Recycling Inc. – Unit 4**



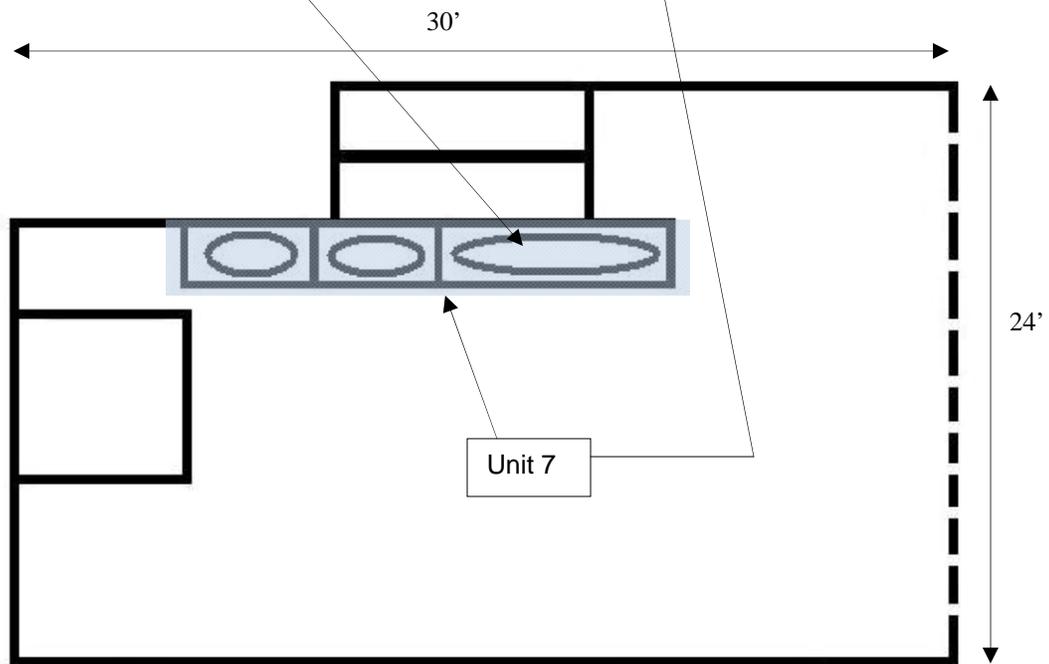
**Figure 8**

**Xstrata Recycling Inc. – Unit 4 Tank Setup**



**Figure 9**

**Xstrata Recycling Inc. – Unit 5**



**Figure 10**

**Xstrata Recycling Inc. – Unit 7**

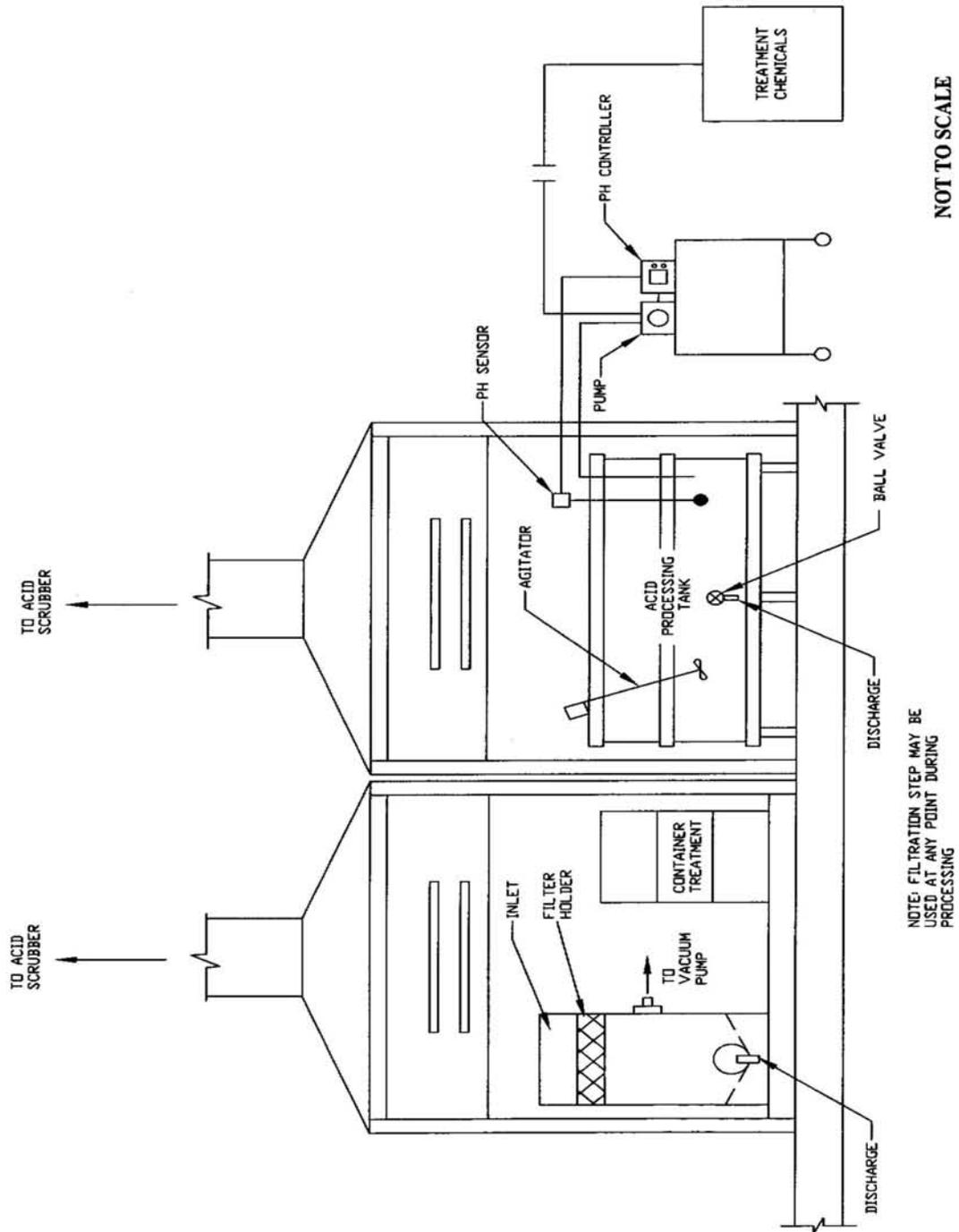
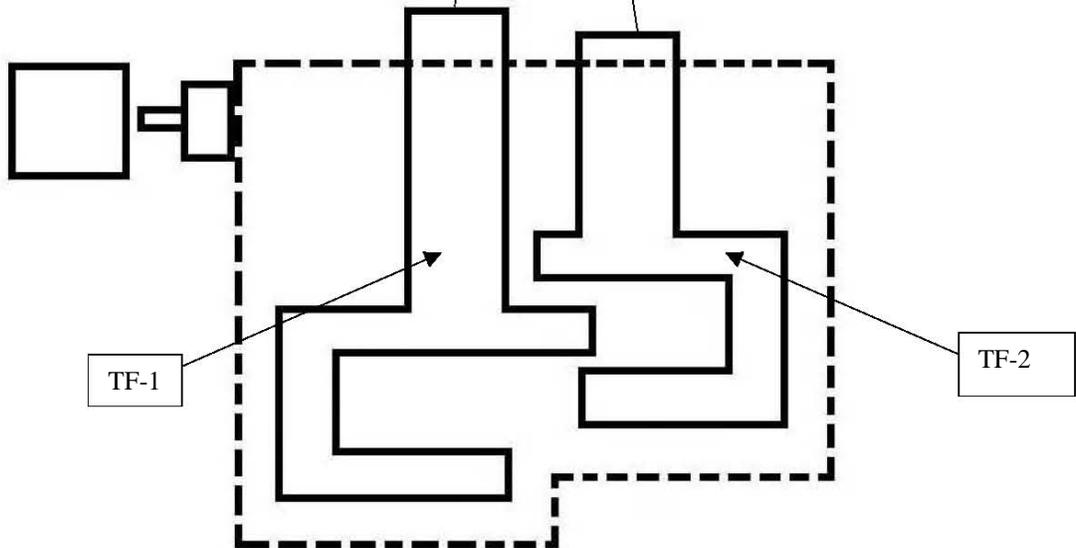


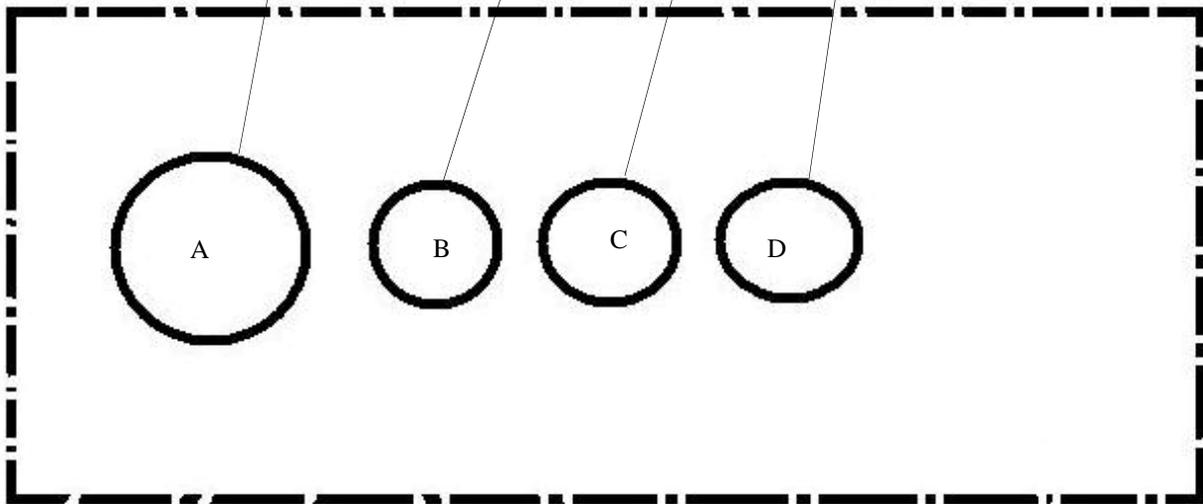
Figure 11

Xstrata Recycling Inc. – Unit 7 Treatment Tank and Containers



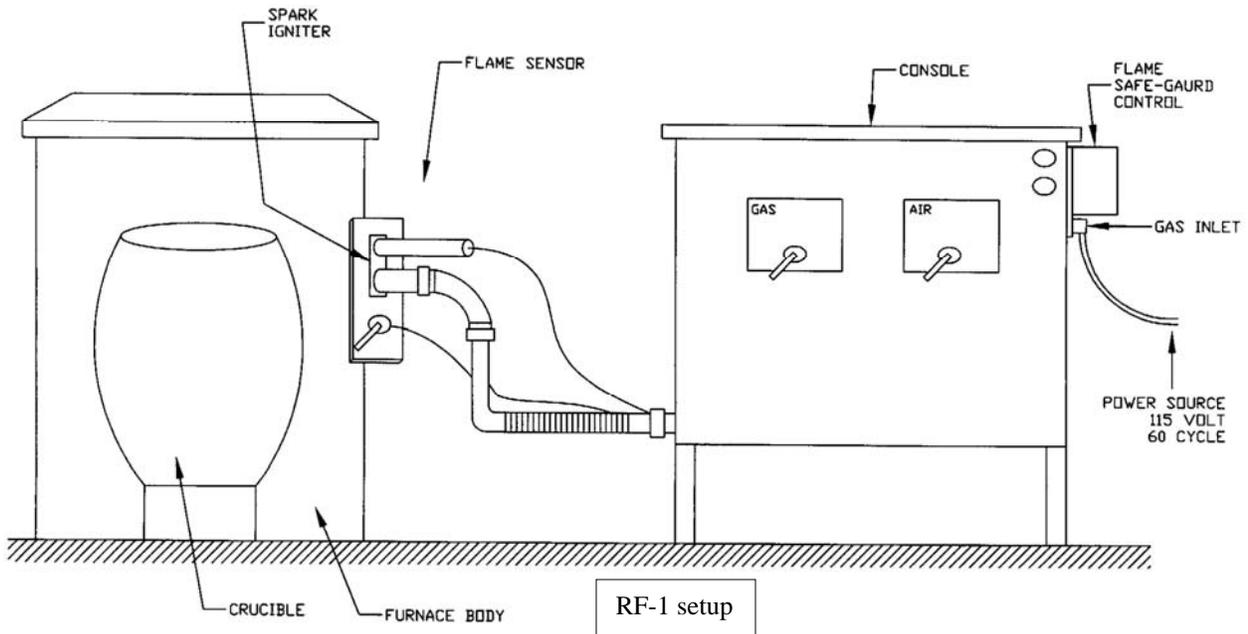
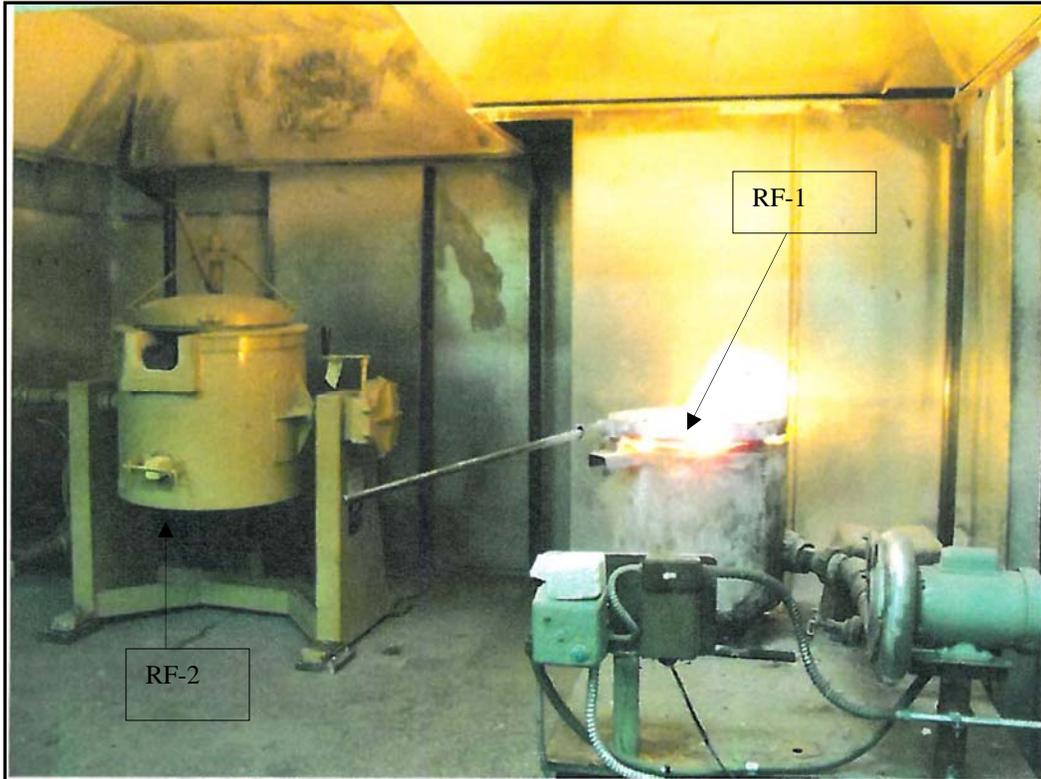
**Figure 12**

**Xstrata Recycling Inc. – Unit 8**



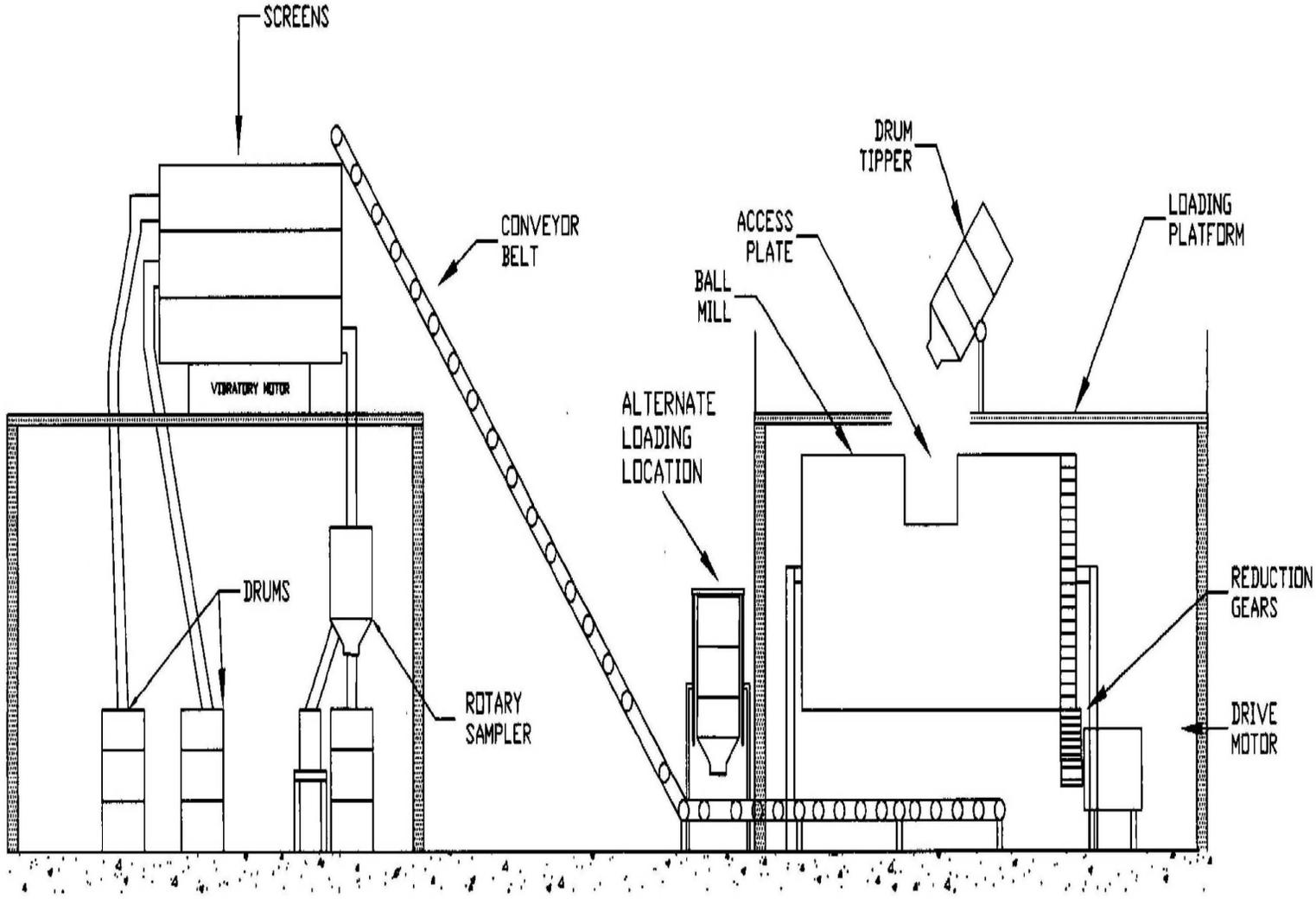
**Figure 13**

**Xstrata Recycling Inc. – Unit 9**



**Figure 14**

**Xstrata Recycling Inc. – Unit 10**



**Figure 15**  
Milling, Screening, and Sampling Diagram



Ball Mill Screen, Unit #11



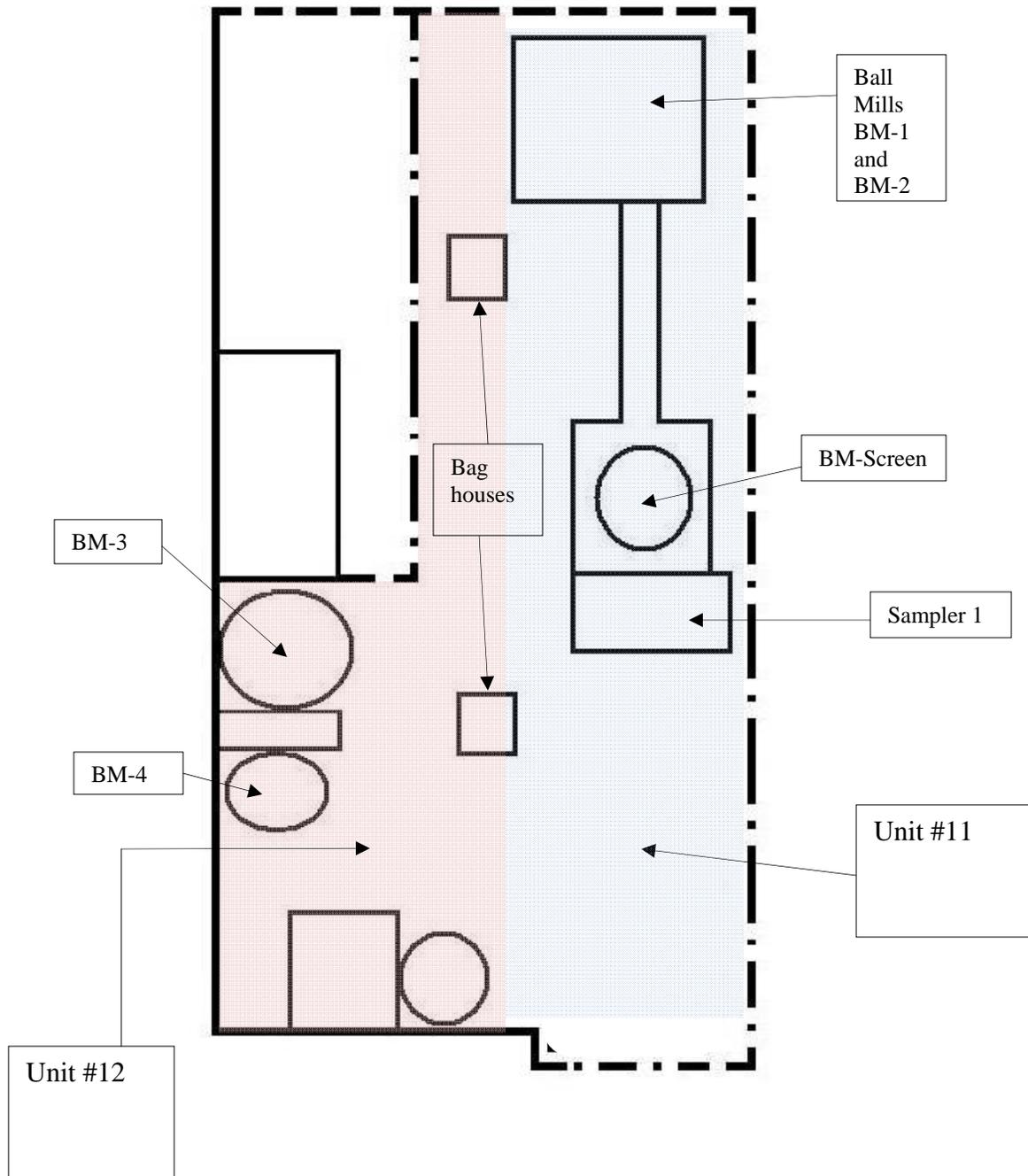
Screen, Unit #12



Muller and Screen, Unit #12

## Figure 16

Xstrata Recycling Inc. – Unit 11 and Unit 12 Pictures



**Figure 17**

**Xstrata Recycling Inc. – Unit 11 and Unit 12**