



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

**DRAFT STANDARDIZED HAZARDOUS WASTE
FACILITY PERMIT, SERIES B**

Facility Name: J&B Refining
dba J&B Enterprises
1650 Russell Avenue
Santa Clara, California 95054

Owner Name: J&B Refining
1650 Russell Avenue
Santa Clara, California 95054

Operator Name: J&B Refining
1650 Russell Avenue
Santa Clara, California 95054

EPA ID Number: CAD982052797

Effective Date:

DRAFT

Expiration Date:

Pursuant to California Health and Safety Code section 25200 and 25201.6, this Standardized Hazardous Waste Facility Permit, Series B (Permit) is hereby issued to the J&B Enterprises facility located at 1650 Russell Avenue in Santa Clara, Santa Clara County, California.

The Issuance of this Permit is subject to the terms and conditions set forth in Attachment A. The Permit consists of 48 pages, including this cover page and Attachment A.

Lori Koch, P.E.

Supervising Hazardous Substances Engineer I
Office of Permitting

Date: _____

**J&B ENTERPRISES
1650 RUSSELL AVENUE
SANTA CLARA, CALIFORNIA 95054**

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, and includes non-RCRA wastewater.

*****END PART I*****

PART II. DESCRIPTION OF THE FACILITY AND OWNERSHIP

1. OWNER OF FACILITY

J&B Refining dba J&B Enterprises
1650 Russell Avenue
Santa Clara, CA 95054

2. OWNER OF REAL PROPERTY

Challenger LLC
1650 Russell Avenue
Santa Clara, CA 95054

3. OPERATOR OF FACILITY

J&B Refining dba J&B Enterprises
1650 Russell Avenue
Santa Clara, CA 95054

4. LOCATION

The Permittee's facility (Facility) is located at 1650 Russell Avenue, Santa Clara, CA 95054, in Santa Clara County. The facility occupies an approximately 62,000 sq. feet parcel zoned for heavy industrial use at latitude 37° 23' 13"N and longitude 121° 57' 20"W, as shown in Figure 1- Location of J&B Refining and Figure 2 – Spatial Layout of Regulated Areas. The assessor's parcel number is 104-14-156.

5. DESCRIPTION OF FACILITY OPERATIONS

The Facility is involved in the reclamation of precious and semiprecious metals from hazardous wastes generated from manufacturing operations such as the electronics industry, including wastes from printed circuit board manufacturers, plating shops, and other like manufacturers. Hazardous wastes are transported to the Facility by trained and licensed company personnel in company vehicles or by other registered waste haulers. The activities at the Facility are appropriately regulated by a Standardized Permit based on California hazardous waste law because the activities are exempt from permitting requirements under the federal Resource Conservation and Recovery Act (RCRA) regulations (40 C.F.R. Part 260 et seq.), but are not exempt from California hazardous waste facility permitting requirements.

The Permittee recovers precious and semiprecious metals such as gold, silver, and tin/lead solder through chemical and physical stripping and processing including concentrating, electrowinning, precipitation, evaporation and melting. The recovered precious and semi-precious metals are further refined. Hazardous wastes generated at the Facility are shipped offsite to an authorized hazardous waste management facility. Wastes are stored on site for processing or consolidated for offsite disposal.

6. FACILITY HISTORY

J&B has been involved in precious metals recovery from electronics waste since 1974. Before moving to its current location (Russell Avenue), J&B operated precious metals recovery operation at 342 Laurelwood Road in Santa Clara under a Standardized Hazardous Waste Facility Permit issued on December 23, 1997. J& B moved to its new location and in 2001, DTSC issued J&B a new Standardized Permit with an effective date of January 6, 2002 and an expiration date of January 6, 2012. There were no changes to the facility operations. This Standardized Permit authorized the Facility to operate hazardous waste storage and treatment facility at its current location to reclaim precious metals from offsite generated wastes including new and used scrap metals, plating baths and other solution generated primarily by the electronics industry. This permit was modified on May 11, 2009 to resolve discrepancies between the Waste Analysis Plan and the Permit. On July 1, 2011 the Permittee submitted an application for renewal of the Standardized Permit. DTSC determined the application to be administratively complete on November 14, 2011. The Standardized Permit expired on January 6, 2012. In accordance with California Code of Regulations, title 22, section 66270.51, J&B is allowed to continue operating under the terms of the expired permit until DTSC makes a final permit determination on J&B's renewal application.

7. FACILITY SIZE AND TYPE FOR FEE PURPOSES

This Permit is categorized as a "Series B" Standardized Permit pursuant to Health and Safety section 25201.6, and for purposes of Health and Safety Code sections 25205.2 and 25205.4(e).

8. CLOSURE COST ESTIMATE:

The closure cost estimate (in 2015 dollars) is \$109,530.

*****END PART II*****

PART III. GENERAL CONDITIONS

1. PERMIT APPLICATION DOCUMENTS

The Standardized Permit Application, dated July 1, 2011 (including all certification and submittal documents, and all responses to the Notice of Deficiency dated November 28, 2013, is hereafter 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 waste 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 those requirements against the Permittee.
- (e) Failure to comply with any term or condition set forth in the Permit in the time or manner specified herein will subject the Permittee to possible enforcement action including but not limited to penalties pursuant to Health and Safety Code sections 25187.

- (f) Failure to submit any information required in connection with the Permit, or falsification and/or misrepresentation of any submitted information is grounds for revocation of this Permit (Cal. Code Regs., tit. 22, §66270.43).
- (g) In case of conflicts between the Standardized Permit Application and the Permit, the Permit conditions take precedence.
- (h) The 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)

DTSC prepared a “Negative Declaration December 7, 2001 for Permit Determination for the J&B enterprises, Inc. Standardized Permit” (**2001** Negative Declaration). In accordance with the requirements of Public Resources Code section 21000 et seq. and the CEQA Guidelines, California Code of Regulations, title 14, DTSC determined that the **2001** Negative Declaration provided an accurate description of proposed project activities and that the conditions requiring preparation of a subsequent environmental impact report are not present. Therefore, pursuant to Public Resources Code 21166 and California Code of Regulations, title 14, section 15162, no additional CEQA documentation is necessary to support this permit renewal.

4. ANNUAL HAZARDOUS WASTE REDUCTION AND MINIMIZATION CERTIFICATION

The Permittee shall certify annually that it has a hazardous waste reduction and minimization program and method in place and shall keep the annual certification as part of its Operating Record in accordance with California Code of Regulations, title 22, section 66264.73(b)(9).

5. 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.

*****END PART III*****

PART IV. PERMITTED UNITS AND ACTIVITIES

This Permit authorizes operation only of the facility 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.

LISTING OF UNITS REGULATED BY THIS PERMIT

The Waste Treatment System, defined as Unit #5 in the 2002 permit, has been re-designated as six units: #5 and #11 through #15 in this permit. This is a change for record-keeping purposes; there has been no actual physical change to the Waste Treatment System.

Unit Number	Description	Location	Unit Type	Activity
Unit #1	Hazardous Waste Container Storage Area	S002 Gold Recovery System (GRS)	Container	Container Storage
Unit #2	Concentrator Tanks	S002 GRS	Miscellaneous Unit	Thermal Treatment
Unit #3	Precipitation Containers	S002 GRS	Container	Treatment in Containers
Unit #4	Electrowinning Tanks	S002 GRS	Tank	Tank Treatment
Unit #5	Wastewater Treatment Tanks	S005	Tank	Tank Treatment
Unit #6	Evaporator	S002 GRS	Miscellaneous Unit	Thermal Treatment
Unit #7	Cyanide Storage Shed	S004	Container	Container Storage
Unit #8	Solder Dross Storage Area	S001	Container	Container Storage
Unit #9	Acid/Water Wash Unit	S002 GRS	Container	Treatment in Containers
Unit #10	Crucible Furnace	F-1	Miscellaneous Unit	Thermal Treatment
Unit #11	Filter Press	S005	Miscellaneous Unit	Physical/Chemical Treatment
Unit #12	Filter Cake Storage	S005	Container	Container Storage
Unit #13	Ion Exchange Columns and Resin Regeneration	S003	Miscellaneous Unit	Chemical Treatment
Unit #14	Spent Resin Storage	S003	Container	Container Storage
Unit #15	pH Neutralization Container	S003	Container	Treatment in Containers

LISTING OF SECONDARY CONTAINMENT SYSTEMS FOR CONTAINERS

S001 – SOLDER DROSS STORAGE AREA:

The waste in this area is a dry solid material with no free liquids; secondary containment is not required.

S002 – GOLD RECOVERY SYSTEM ROOM:

Containment system is poured concrete berm and Terra-III epoxy coating. Base has a thickness of 6 inches. Concrete berm is 8" high and 8" wide. The floor is designed as a secondary containment storage area for hazardous waste storage. Some of the containers are stored on pallets; others are directly stored on the ground. Secondary containment is not exposed to rainfall. There shall be a minimum of 3 feet aisle space between pallet loads (double rows) of stored container. The containment system has a storage volume of 5,500 gallons.

S003 – RESIN REGENERATION SYSTEM (ION EXCHANGE)

Containment system is monolithic concrete pour, concrete slab with berms. Base has a thickness of 15 inches. Concrete berm is 1.25' high and 0.66" wide. The floor is designed as a secondary containment storage area for hazardous waste storage. The ion exchange columns are elevated off the ground on rubber bases; the pH neutralization container is not elevated. Spilled or leaked material shall be manually collected with a pump or other comparable method. Secondary containment is not exposed to rainfall. This area is used for treatment, not for general storage. However, this area will be used for any acid materials that are brought on site for use. Volume of containers is 463 gallons

S004 – OUTSIDE PORTABLE HAZARDOUS WASTE STORAGE

Containment system is prefabricated storage shed of heavy steel construction, with secondary containment sump, fiberglass grating, and an explosion venting roof. The shed is of open channel construction; and the sump and shell walls are welded. Berm is 6" high and 3/32" thick. An epoxy-phenol coating is used in this storage area with no compatibility problems or deterioration noted. The containers in this storage area are elevated approximately 6" above the secondary floor on a grating of fiberglass coated metal construction. The secondary containment system slopes to a drain plug. All of the hazardous waste authorized by this permit to be stored in this area is compatible with the epoxy coating. The containment system's volume is 495 gallons.

S005 – Wastewater Treatment System Area

Containment system is monolithic pour, steel reinforced concrete slab with berms. It is 20.5' long, 19' wide, and 1.25' high. Base thickness is 15". Berm is 1.25' high and 0.66" wide. Containment area drains to a clean out. The filter press is supported on legs, elevating it off the ground. The fiber bags shall also be elevated. The system has a 6-

gallons capacity cleanup sump. It can hold 450 gallons. The area provides secondary containment for the filter press and the filter cake storage units.

TREATMENT IN CONTAINERS

Filtration/Rinsing of Precipitate

Treatment is conducted in aspirated ceramic filter (2.5-gallon capacity), Pyrex container (5-gallon capacity), polyethylene containers, T-1 through T-7.

pH Neutralization of Purification Rinses

Treatment is conducted in polyethylene open-top container (15-gallon capacity, 30-gallon capacity).

UNIT #1:

UNIT NAME:

Hazardous Waste Container Storage Area

UNIT TYPE

Container

LOCATION:

This Unit is located in Room S002 in the southwest corner of the facility (See Figure 2 and Figure 3).

ACTIVITY TYPE:

Storage in Containers

ACTIVITY DESCRIPTION:

Liquid solutions containing precious metals are stored prior to their processing through the treatment systems. Photographic liquid waste, spent filters and filter cakes are stored into up to 55-gallon containers.

PHYSICAL DESCRIPTION:

This Unit consists of a poured concrete slab floor measuring 40 feet by 50 feet with concrete berms. Containers are stored elevated on pallets; others are stored directly on

the ground and are processed before removal. There is also a single dedicated loading/unloading area consisting of an epoxy coated steel tray measuring 14'4" x 5'4". The tray can hold up to eighteen 55-gallon drums of solution in isolation.

MAXIMUM CAPACITY:

The maximum permitted storage capacity is 5,500 gallons.

WASTE TYPES:

Waste Streams 1-5, 7-10, and 12 (See Table 1)

CALIFORNIA HAZARDOUS WASTE CODES:

Waste Streams 1-5, 7-10, and 12 (See Table 1)

UNIT-SPECIFIC SPECIAL CONDITIONS:

1. The Permittee shall not store corrosive waste in this Unit.
2. The unit shall consist of groupings of drums with the following maximum dimensions: no more than two (2) rows per grouping, no more than ten (10) drums per row, and the rows stacked to a maximum height of two drums.
3. The Permittee shall maintain a minimum 36 inch aisle space between pallet load (double rows) of stored containers. The volume of each container shall be no greater than 55 gallons. Smaller containers (less than 55 gallons) are also allowed as long as they are stored adjacent to the drum groupings.
4. Each drum and liner shall be disposed of when they are no longer of use. Each drum and liner shall be disposed of as hazardous waste or as empty containers.

UNIT #2:

UNIT NAME:

Concentrator Tanks

UNIT TYPE

Miscellaneous Unit

LOCATION:

This Unit is located in Room S002 in the southwest corner of the facility (See Figure 2 and Figure 3).

ACTIVITY TYPE:

Thermal Treatment

ACTIVITY DESCRIPTION:

These concentrators are filled manually using portable pumps at a feed rate of 10-20 gallons per minute and treatment is done up to 350 gallons per batch. Precious metal solutions are heated and concentrated to reduce their volume.

PHYSICAL DESCRIPTION:

This Unit consists of three concentrators [C-1, C-2, and C-3]. Only C-1 and C-3 are currently in place. C-2 is a placeholder in the permit that authorizes future use. The physical characteristics of the concentrators are as follows:

Equipment No.	Internal Dimension	External Dimensions	Design / Operational Capacity
C-1, C-2	4' x 3' x 3' (h)	4'4" x 3'2" x 3'4" (h)	256/190 gallons
C-3	5' x 3'8" x 3' (h)	5'4" x 4' x 3'2" (h)	398/320 gallons

The concentrators are double-walled stainless steel tanks. The concentrators are operated at atmospheric pressure. Each of these concentrators has manually operated thermostats. Temperature sensors are installed in stacks, which automatically shut off the burner if the temperature rises above a specified value. The ultraviolet sensors installed with this Unit automatically shut off the gas supply if the pilot light goes out. The concentrators can be entered for inspection or repair as necessary. However, all of the concentrators are small enough that they can be inspected from above.

The concentrators are double-walled stainless steel tanks, so the wastes treated in them are secondarily contained. The concentrators are located in S002.

MAXIMUM CAPACITY:

The maximum treatment capacity of this Unit is 700 gallons at any one time. Concentrators C-1, 2, and C-3 can treat up to 190, 190, and 320 gallons, respectively at any one time.

WASTE TYPES:

Waste Streams 1-5, 7-12 (See Table 1)

CALIFORNIA HAZARDOUS WASTE CODES:

Waste Streams 1-5, 7-12 (See Table 1)

UNIT #3:

UNIT NAME:

Precipitation Containers

UNIT TYPE

Container

LOCATION:

This Unit is located in Room S002 in the southwest corner of the facility (See Figure 2).

ACTIVITY TYPE:

Treatment in Containers

ACTIVITY DESCRIPTION:

These containers are used for precipitation, holding, and transfer of precious metal bearing solutions. Once treated, solutions are transferred to another treatment process, such as the acid wash/fume hood, electrowinning, concentration, or evaporation.

Gold precipitation is carried out in seven plastic containers. The solutions to be precipitated are transferred into the containers where precipitation and settling occur. A caustic solution is used to lower the pH and sodium hydrosulfite is used to stabilize it. Powder zinc is used to displace the gold and accelerate precipitation. The liquid waste stream is decanted and transferred to Unit #6 [Evaporator] for further treatment. The metal precipitant is transferred to the precious metal purification area.

The containers are fed manually using portable pumps. The containers are operated at atmospheric pressure and ambient temperature. As the containers are fed manually, there is no piping. The level of fill in the containers is visually monitored to prevent overflows.

PHYSICAL DESCRIPTION:

This Unit consists of seven containers [T-1 through T-7]. The containers are made of high density polyethylene. The walls of the containers are translucent and 1/4" thick. The physical characteristics of the containers are as follows:

Equipment No.	Internal Dimension	External Dimensions	Design Capacity
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T-1, T-2	31" (d) x 48" (h)	31.5" (d) x 50" (h) with plug lip	150 gallons
T-3, T-4	27" (d) x 42" (h)	27.5" (d) x 44" (h) with plug lip	100 gallons
T-5, T-6	32" (d) x 34" (h)	22.5" (d) x 36" (h) with plug lip	50 gallons
T-7	36" (d) x 48" (h)	36.5" (d) x 50" (h) with plug lip	200 gallons

The precipitation containers are located in S002 which provides secondary containment.

WASTE TYPES:

Waste Streams 1-4, 7-12 (See Table 1)

CALIFORNIA WASTE CODE:

Waste Streams 1-4, 7-12 (See Table 1)

MAXIMUM CAPACITY:

The total maximum treatment capacity is 800 gallons at any one time. The maximum treatment capacity at any one time of each individual container shall be the design capacity shown under the Physical Description section above.

UNIT #4

UNIT NAME:

Electrowinning Tanks

UNIT TYPE

Tank

LOCATION:

This Unit is located in Room S002 in the southwest corner of the facility (See Figure 2 and Figure 3).

ACTIVITY TYPE:

Treatment in Tanks

ACTIVITY DESCRIPTION:

The electrowinning tanks are used in the reclamation of precious metal solutions as a solid metal product (plated to the cathodes) which may be melted and poured into ingots for resale. This is a batch process that utilizes the electrolytic cathodic capture of precious

metals. The waste is pumped from the tanks into their corresponding treatment (electrowinning) unit at 10-20 gallons per minute. A current is passed from an inert anode through a metal containing solution so that the metal is extracted and is deposited onto the cathode. After treatment the disposable cathode is removed and the accumulated gold is melted and refined in a furnace and sold as a recycled material.

PHYSICAL DESCRIPTION:

The electrowinning tanks are custom designed and specially built. The Electrowinning unit is mounted on top of a sump. The solution is run through the unit and returned to the sump. The tanks are constructed of ½-inch thick polypropylene with triple welded seams.

The tanks are fed manually using portable pumps. The process is a batch process. The tanks are operated at atmospheric pressure and ambient temperature. The tanks are shaped like cubes. Further the tanks are enclosed in a cage that is bolted to the concrete slab which will prevent the tanks from sliding. The tanks are supported by a concrete slab-on-grade. These tanks are used for electrowinning metals from solutions.

The tanks are identical with dimensions as follows: 48 inches wide, 48 inches long by 54 inches high with a maximum working capacity of 530 gallons per tank with 1-foot of freeboard. The tanks are also equipped with content recirculating pumps.

The permit is for three electrowinning tanks. Only EW-1 and EW-2 are currently in place. EW-3 is a placeholder in the permit for future use.

The EW tanks are located in S002, which provides secondary containment.

WASTE TYPES:

Waste Streams 1-4, 7-12 (See Table 1)

CALIFORNIA WASTE CODE:

Waste Streams 1-4, 7-12 (See Table 1)

MAXIMUM CAPACITY:

The maximum treatment capacity of each tank is 530 gallons at any one time.

UNIT #5:

UNIT NAME:

Wastewater Treatment System

UNIT TYPE

Tank

LOCATION:

This Unit is located in Room S005 (See Figure 2).

ACTIVITY TYPE:

Treatment in Tanks

ACTIVITY DESCRIPTION:

Wastewater is treated in batches in the settling tanks through pH adjustment, chlorine induced oxidation, neutralization, and ion exchange treatment as needed, prior to disposal into the sanitary sewer. The batches can be up to 1250 gallons each with 2 batches being treated simultaneously. The chemical reagents used in the treatment process are calcium hydrochlorite, ferrous sulfate, sodium hydroxide, hydrochloric acid, and polymer. After adjusting the pH, the flocculent is added and allowed to settle out. This system is not used on a regular basis, but serves as an optional treatment should it be needed. These tanks serve as emergency and temporary holding tanks for solutions. No routine or long-term storage is done in these tanks.

PHYSICAL DESCRIPTION:

This Unit consists of two upright polyethylene cone tanks secured in welded stands that have been seismically anchored in place to a steel reinforced pad. The Unit also consists of a filter pad, a filter press, and ion exchange columns. The tanks are fabricated from heavy weight A36 steel and are coated with polyester powder. The external dimension of the tanks measures 92 inches in diameter and 24.25 inches in height with a 146 inch cone bottom. The design capacity of the tanks is 1,477 gallons.

These translucent tanks are operated at atmospheric pressure and ambient temperature. Since the tanks are fed manually, there is no piping. Liquid levels are visually monitored and controlled.

Room S005 (where the unit is located) has a concrete floor with a 1.25-foot curb coated with a Tera-Gem III Troweled Chemical Resistance Flooring Systems as manufactured by Tera Lite Inc. The wastewater tanks are bolted down.

WASTE TYPES:

Waste Streams 1-5, 7-15, 18-19 (See Table 1)

CALIFORNIA WASTE CODES:

Waste Streams 1-5, 7-15, 18-19 (See Table 1)

MAXIMUM CAPACITY:

2500 gallons per batch

UNIT #6:

UNIT NAME:

Evaporator

UNIT TYPE

Miscellaneous Unit

LOCATION:

This Unit is located in Gold Recovery System Room S002 in the southwest corner of the facility (See Figure 2 and Figure 3).

ACTIVITY TYPE:

Thermal Treatment

ACTIVITY DESCRIPTION

The evaporator is used to volumetrically reduce and solidify the treated precious metal bearing solutions to a thick sludge or a solid cake. The evaporator solids are then sent for further reclamation at an offsite facility.

PHYSICAL DESCRIPTION:

The evaporator consists of a cone shaped vessel enclosed within a rectangular support structure. This unit consists of a heated chamber within which there is a semi-conical process tank. The tank is positioned vertically. A gas burner provides the heat and instruments, probes and vents control the heat within. The evaporator is custom designed and specially built.

The evaporator is bolted down.

External dimensions of Unit = 4' x 4' x 80" (h)

Internal design capacity: 243 gallons design capacity, with 195 gallons operational capacity

Operational temperature: ambient up to 200 – 400 °F

This unit is small enough that it can be inspected from above. The heated evaporator has manually operated thermostats and high temperature sensors that automatically shut-off the burner if the temperature gets too high. There are ultraviolet sensors that automatically shut-off the gas supply in the event that the pilot light goes out. The evaporator is open and well vented.

The evaporator E-1 is located in Room S002, which provides secondary containment.

WASTE TYPES:

Waste Streams 1-5, 7-12 (See Table 1)

CALIFORNIA WASTE CODES

Waste Streams 1-5, 7-12 (See Table 1)

TREATMENT CAPACITY:

195 gallons per batch

UNIT #7:

UNIT NAME:

Hazardous Waste Storage Shed

UNIT TYPE:

Container

ACTIVITY TYPE:

Container Storage

ACTIVITY DESCRIPTION:

Containers of hazardous waste are stored in a specially designed walk-in storage shed. Small containers can be stored either stacked or placed on the shelves built onto the walls.

LOCATION:

This Unit is located in Room S004 in the southwest corner of the facility (See Figure 2).

PHYSICAL DESCRIPTION:

This unit is a prefabricated storage shed made of heavy steel, with a secondary containment sump. It is 9 $\frac{3}{4}$ ' x 5 $\frac{1}{2}$ ' x 7 $\frac{1}{2}$ ' in size

WASTE TYPES:

Waste Streams 1 and 8 (See Table 1)

CALIFORNIA WASTE CODES

Waste Streams 1 and 8 (See Table 1)

MAXIMUM CAPACITY:

495 gallons

UNIT #8:

UNIT-NAME:

Solder Dross Storage Area

UNIT TYPE:

Container

LOCATION:

This unit is located in Room S001 in the western side of the building (See Figure 2). Room S001 is 20 feet x 20 feet in size.

ACTIVITY TYPE:

Storage in Containers

ACTIVITY DESCRIPTION:

The unit is used to accumulate, process, consolidate and ship out solder dross waste that J&B collects from the same generators that provide the liquid wastes which constitute most of J&B's incoming feed stock. Only solid hazardous wastes (solder dross) with no free liquids are stored in this area. The loading /unloading area consists of a concrete floor that will provide adequate, separate secondary containment from other hazardous materials and wastes.

PHYSICAL DESCRIPTION:

The solder dross is stored in 55-gallon, steel drums and other steel containers placed on wooden pallets. The floor is concrete and the drums are stored inside the building.

The waste in this area is a dry solid material with no free liquids; secondary containment is not required.

WASTE TYPES:

Waste Stream 6 (See Table 1)

CALIFORNIA WASTE CODES

Waste Stream 6 (See Table 1)

MAXIMUM CAPACITY:

Forty eight (48) 55 gallon drums (2640 gallons total storage capacity)

UNIT #9:

UNIT NAME:

Acid/Water Wash Unit

UNIT TYPE:

Container

LOCATION:

This Unit is located in Room S002 in the southwest corner of the facility (See Figure 2 and Figure 3).

ACTIVITY TYPE:

Treatment in Containers

ACTIVITY DESCRIPTION:

Filtration and Rinsing of Precipitate:

Aspirated filters are used to achieve filtration. Rinsing is done manually with water and a diluted acidic solution. The filtration system is set up adjacent to the fume hood. The precious metal containing "mud" in the filter apparatus is then washed with water to remove contaminants. The resultant liquid effluent is drained to the same container, and is

processed further at the site. Additional contaminants are removed from the precious metal precipitate with acidic solution. Acid residues are washed with water. The resultant effluents are collected for pH neutralization purposes. All primary containers are placed in trays while acid purification is conducted inside the fume hood. The precious metal precipitate is then transferred to a crucible for processing in Unit #10. The purification process employs both nitric acid and hydrochloric acids. Overall, it takes around 4-8 hours to process a typical batch of 1.5 gallons of precious metal precipitate. Liquid separation is performed with filtration with aspiration.

pH Neutralization of Purification Rinses:

The acid solution generated in the rinsing operation is neutralized using solid caustic soda. The pH neutralization operation proceeds until visual monitoring and pH testing have indicated that a pH of between 7 and 11 has been produced. The solution is then manually transferred to the Wastewater Treatment System, or to a storage area. Neutralization is conducted in containers of varying size up to 30 gallons.

Chemical treatment processes:

Neutralization of limited volumes of a nitric acid and/or hydrochloric acid using caustic soda is conducted in 10 gallons batch size. It takes around 30 minutes to complete this process.

PHYSICAL DESCRIPTION:

This treatment area has a fume hood and the worktable which has a plastic containment lip. In addition, all liquid effluents generated by this process are secondarily contained inside of plastic tubes to prevent run-off.

Acid waste is generated in very small volumes of less than 5-gallons per batch. After treatment, this waste is then transferred either to Unit #5 [WTS] or to one of the compatible hazardous waste storage areas.

The Acid/Water Wash Unit is located in S002, which provides secondary containment.

WASTE TYPES:

Waste Streams 4, 9, 10, 12 (See Table 1)

CALIFORNIA WASTE CODES

Waste Streams 4, 9, 10, 12 (See Table 1)

TREATMENT CAPACITY

50 gallons per batch

UNT-SPECIFIC SPECIAL CONDITIONS:

If a container holding hazardous waste is not in good visual condition (e.g., severe rusting, apparent structural defects) or if it begins to leak, the Permittee shall transfer the hazardous waste from this container to a nonleaking container that is in good visual condition or otherwise manage the waste in compliance with the requirements of Chapter 14 of Division 4.5 of title 22 of the California Code of Regulations.

UNIT #10:

Crucible Furnace

UNIT TYPE:

Miscellaneous Unit

LOCATION:

The crucible furnace is located in the Furnace Room located in the easterly corner of the building. (See Figure 2)

ACTIVITY TYPE:

Thermal Unit

ACTIVITY DESCRIPTION:

The unit is used to melt and purify the final refinement process of the gold recovery system. This is a batch process. The waste, a precipitate from other precious metal processes at the facility, is brought in as a dry sludge (mud) placed in the crucible, heated up to a temperature of 3,000 degrees Fahrenheit and melted thoroughly. Once melted, the material is poured into brick shaped molds.

Secondary containment is not required for this unit, as the wastes treated are solid materials.

PHYSICAL DESCRIPTION:

The unit consists of a crucible inside of a furnace. The furnace has exterior dimensions of 23.5 inch diameter by 17 inches high. Its walls are 5 inches thick and consist of firebrick, concrete and an exterior steel shell. The crucible is 6" (d) x 10" (h).

There are ultraviolet sensors that automatically shut-off the gas supply in the event that the pilot light goes out. The crucible is designed to treat 1.2 gallons.

WASTE TYPES:

Waste Stream 9 (See Table 1)

CALIFORNIA WASTE CODES

Waste Stream 9 (See Table 1)

MAXIMUM CAPACITY:

Batches no larger than 15 pounds

UNIT #11

UNIT NAME:

Filter Press

UNIT TYPE:

Miscellaneous Unit

LOCATION:

This Unit is located in Room S005 in the southwest corner of the facility (See Figure 2).

ACTIVITY TYPE:

Physical Treatment

ACTIVITY DESCRIPTION:

Wastewater from the Wastewater Treatment Tanks is sent to the filter press that removes heavy metal sludge. The filter press is filled and activated manually. Once the treatment operation has been started, the unit automatically moves its pressing cycle, using increasingly higher levels of air pressure to remove as much of the water content as possible.

PHYSICAL DESCRIPTION:

Filter press plates are made of a heavy duty polypropylene and have plate clearance of 40 inches. Filter cake (see description for Unit # 10) is discharged into a 55 gallon drum via a hopper. The process is a batch process and therefore there are no automatic waste feed systems, cutoff or bypass systems.

The filter press (Model: JWI Filter Press, Mod. No. 630G32-21/36-6/10 DYLS, PSI 100) is supported on legs, elevating it off the ground. Filter cake is collected in storage container fiber bags that are also elevated. The filter press is irregularly shaped.

WASTE TYPES:

Waste Stream 13 (See Table 1)

CALIFORNIA WASTE CODES:

Waste Stream 13 (See Table 1)

TREATMENT CAPACITY:

15 gallons per min

UNIT # 12

UNIT NAME:

Filter Cake Storage

UNIT TYPE:

Container

LOCATION:

This Unit is located in Room S005 in the southwest corner of the facility (See Figure 2).

ACTIVITY TYPE:

Container Storage

ACTIVITY DESCRIPTION:

Filter cake is generated when filter press has completed its cycle of operation. Filter cake is unloaded into 55-gallon drums and moved to this unit for storage.

PHYSICAL DESCRIPTION:

This unit is located in Room S005, next to the filter press and waste storage tanks. As the hazardous waste is treated in Wastewater Treatment Tank, sediments collect at the bottom of the tank. This solution is passed through the filter press that retains solids as filter cake. This cake gets unloaded directly into a 55-gallon container via a hopper mounted at the bottom of the press. The filter cake is sent to a permitted facility for recycling.

A concrete floor provides secondary containment for the Unit. The concrete floor has a 1.25-foot curb coated with Tera-Gem III Troweled Chemical Resistance Flooring System (CRS) as manufactured by Tera Lite Inc. This coating is compatible with all of the items processed in this area. In addition, Room S005, in which the unit is located, provides secondary containment.

WASTE TYPE:

Waste Stream 14 (See Table 1)

CALIFORNIA WASTE CODES

Waste Stream 14 (See Table 1)

CAPACITY:

110 gallons

UNIT # 13

UNIT NAME:

Ion Exchange and Resin Regeneration

UNIT TYPE:

Miscellaneous Unit

LOCATION:

The unit is located in Room S003 in the southwest corner of the facility (See Figure 2).

ACTIVITY TYPE:

Physical/Chemical Treatment

ACTIVITY DESCRIPTION:

The wastewater effluent that is generated in the filter press is processed through an ion exchange system to remove heavy metals prior to discharge. While the wastewater that is influent to the ion exchange system is nonhazardous, the resin and the solution within the resin column becomes hazardous as they remove and concentrate trace amounts of metals prior to transfer to one of the two treatment tanks for chemical analysis. Ion exchange columns contain 60% Type I Strong Base Anion/40% Strong Acid Cation Resin. Further, once the efficiency of the ion exchange system slows down, the spent resin is regenerated by acids and bases. Hydrochloric, nitric, and/or sulfuric acid and caustic soda are used for resin regeneration. The ion exchange system is a flow-through type of a system in which liquid wastewater flows from the first column to the second, third, and then the fourth and final container before being discharged to a treatment tank.

PHYSICAL DESCRIPTION:

Each of the four ion exchange columns has a capacity of 32 gallons. Column size is 14" (d) x 48" (h). Columns are made of fiberglass reinforced plastic. The ion exchange columns are elevated off the ground on rubber bases. Wastewater is pumped through these columns.

WASTE TYPE:

Waste Stream 15 (See Table 1)

CALIFORNIA WASTE CODES

Waste Stream 15 (See Table 1)

TREATMENT CAPACITY

15 gallons per min

UNIT #14

UNIT NAME:

Spent Resin Storage

UNIT TYPE:

Container

LOCATION:

This Unit is located in Room S003 in the southwest corner of the facility (See Figure 2).

ACTIVITY TYPE:

Container Storage

ACTIVITY DESCRIPTION:

The nonhazardous wastewater effluent that is generated in the filter press is further processed through an ion exchange system to remove heavy metals prior to discharge. While the wastewater that is influent to the ion exchange system is nonhazardous, the resin and the solution within the resin column becomes hazardous as they remove and concentrate trace amounts of metals prior to discharge. Once the efficiency of the ion exchange system slows down, the resins are regenerated on-site and spent resin is disposed as hazardous waste.

PHYSICAL DESCRIPTION:

This unit stores spent resin in drums. This unit is located in Room S003. This room is surrounded by a 1.25 feet high berm.

A concrete floor provides secondary containment for the Unit. The concrete floor has a 1.25-foot curb coated with Tera-Gem III Troweled Chemical Resistance Flooring System (CRS) as manufactured by Tera Lite Inc. This coating is compatible with all of the items processed in this area.

WASTE TYPE:

Waste Stream 18 (See Table 1)

CALIFORNIA WASTE CODES:

Waste Stream 18 (See Table 1)

CAPACITY:

110 gallons

UNIT # 15:

UNIT NAME:

pH Neutralization Container

UNIT TYPE:

Container

LOCATION:

This Unit is located in Room S003 in the southwest corner of the facility (See Figure 2).

ACTIVITY TYPE:

Treatment in Container

ACTIVITY DESCRIPTION:

Caustic soda regenerates part of the resin. The solution generated with caustic soda is slightly basic. Inorganic acids regenerate other part of the resin. The solution generated with inorganic acid is slightly acidic. Both of these solutions are collected in this container. These slightly acidic and basic solutions, when mixed, result in a neutral solution. These solutions are transferred to Wastewater Treatment Tanks for further handling prior to discharge to the sanitary sewer.

PHYSICAL DESCRIPTION:

The dimensions of the container are as follows: 27" (d) x 42" (h). The container is made of a 1/4" thick linear polyethylene.

CAPACITY:

104 gallons

WASTE TYPES:

Waste Streams 15, 16, 17, 18 (See Table 1)

CALIFORNIA WASTE CODES:

Waste Streams 15, 16, 17, 18 (See Table 1)

UNT-SPECIFIC SPECIAL CONDITIONS:

If a container holding hazardous waste is not in good visual condition (e.g., severe rusting, apparent structural defects) or if it begins to leak, the Permittee shall transfer the hazardous waste from this container to a nonleaking container that is in good visual condition or otherwise manage the waste in compliance with the requirements of Division 4.5 of title 22 of the California Code of Regulations.

*****END PART IV*****

PART V - SPECIAL CONDITIONS

1. The Permittee, J&B Enterprises, is prohibited from any hazardous waste treatment and storage activity not specifically described in Part IV of this Permit.
2. Hazardous waste shall not be land disposed at the Facility, whether temporarily or permanently.
3. The Permittee shall not store hazardous waste in excess of one calendar year from the time such waste was first stored.
4. In the event that any cracks, gaps or tears are detected in the dedicated secondary containment for the Hazardous Waste Container Storage Area, the Concentrator Tanks (C 1-3), the Precipitation Tanks (T1 through T6), the Evaporator Tank (E-1), the Electrowinning Tanks (EW-1 through EW-3), the Acid/Water Wash Unit, the Wastewater Treatment System, and the Hazardous Waste Storage Shed, repairs shall be initiated as soon as possible, and completed within one week of discovery of the containment problem. The Permittee shall notify DTSC within twenty-four (24) hours whenever containment problems are found and notify DTSC in writing within seven (7) days of discovery of the problem, delineating what was done to correct the problem.
5. The following plans required for the Permit and certified for use by the Permittee in accordance with California Health and Safety Code (H&SC) section 25201.6(c)(4) shall be maintained at the Facility at all times until Facility closure is completed:
 - (a) Contingency Plan and Emergency Preparedness.
 - (b) Facility Management Practices.
 - (c) Facility Siting Information.
 - (d) Inspection Plan.
 - (e) "Land Ban" Compliance.
 - (f) Manifesting.
 - (g) Personnel Training.
 - (h) Reporting.
 - (i) Security Plan.

The Permittee shall make the documents listed above available to local, state and federal agencies upon request. The Permittee shall recertify any of these documents if changes are made to the document. The Permittee shall submit the new certifications to DTSC within 30 days after any changes are made.

6. The Permittee shall comply with the secondary containment requirements for container transfer areas specified in 22, Cal. Code Regs, section 66264.175.

7. This Permit authorizes operation of the Facility units and activities listed in Part IV subject to the conditions specified herein. The Permittee shall not treat or store hazardous wastes in any unit other than those specified in Part IV. Any modifications to the designated units or permitted activities require the written request and written approval of DTSC in accordance with the permit modification procedures set forth in 22, Cal. Code Regs, sections 66270.41 and 66270.42.

8. This Permit is hereby granted subject to the condition that all the requirements of H&SC, Division 20, Chapter 6.5, all applicable permitting provisions of 22, Cal. Code Regs., Division 4.5, and all terms and conditions of this Permit are complied with. If the aforesaid conditions are not met, the Permit may be revoked and other authorized enforcement action may be taken at the discretion of DTSC.

*****END PART V*****

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 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 H&SC 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 workplan 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.

*****END PART VI*****

TABLE 1 - DESCRIPTION OF WASTE¹

#	Waste Streams	Federal Waste Codes	California Waste Codes
1	Aqueous Solution with Cyanide and Precious Metals	F007, F009, D002, D003, D004, D006, D007, D008, D011, F006, and F008	711, 722, 724, 726 and/or 728, 121, 122, 123, 131, 132, 141, 134, 135, 551
2	Non-Reactive Dragout Solutions with Precious Metals	F007, F008, F009	123, 131, 132, 135, and 121
3	Non-Cyanide Containing Precious Metals (non-acidic)	Non-RCRA or D002, D004, D006, D007, D008, D011, D009, and D010	721, 722, 724, 726, 728, 121, 122, 123, 131, 132, 135, 141, 171, 331, 342, 343, 491, 541, 551
4	Iodine etch solutions	Non-RCRA	726, 131, 132, 135, 141, 121, 122, 123, 133, 134, 331, 342, 343, 491,551
5	Residues Containing Precious Metals	F006, F007, F008, F009, D002, D003, D004, D006, D007, D008 D011, D009, and D010	141, 171, 181, 331, 342, 343, 491, 512, 513, 551
6	Solder Dross	D004, D006, D008 and/or D011	141, 171, 172, 181, 491
7	Photographic Solutions with Silver	D007, D011	123, 131, 133, 134, 135, 141, 331, 342, 343, 491, 512, 513, 541
8	Cyanide Strip Solution	D002, D003, D004, D006, D007, D008, D011, D009, D010, F009	711, 721, 722, 724, 726, 728, 121, 122, 123, 131, 132, 133, 134, 135, 331, 342, 343, 491
9	Precious Metal Precipitate	F007, F009, D004, D006, D007, D008, D011	121, 122, 131, 132, 133, 134, 171, 342, 343, 491
10	Precious Metal Precipitate Supernatant /water wash (lean liquor)	F007, F009, D002, D003, D004, D006, D007, D008 D011	711, 721, 722, 724, 726, 728, 121, 131, 132, 122, 133, 134, 342, 343, 491
11	Acid Purification Solution	F007, F009, D002, D004, D006, D007, D008, D011, D009, F008	721, 722, 724, 726, 728, 792, 131, 132, 135, 171, 181

#	Waste Streams	Federal Waste Codes	California Waste Codes
12	Neutralized Acid Solution	F007, F009 D004, D006, D007, D008, D011	721, 722, 724, 726, 728, 121, 132, 135, 171, 181
13	Wastewater-sludge without cyanide	F006, F007, F009, D004, D006, D007, D008, D011	721, 722, 724, 726, 728, 132
14	Filter cake	F006, F007, F009, D002, D004, D006, D007, D008, D010 and/or D011	171 and/or 181
15	Non-hazardous wastewater effluent	Non-RCRA	Nonhazardous
16	Resin regenerant solution, acidic	F007, F009, D002, D004, D006, D007, D008 and/or D011	721, 722, 724, 726, 728, 792, 132,
17	Resin regenerant solution, caustic	F007, F009, D002	122
18	Spent ion exchange resin	F007, F009, D002, D004, D006, D007, D008 and/or D011	181 and/or 722
19	Resin regenerant solution, neutralized	F007, F009, D004, D006, D007, D008 and/or D011	721, 722, 724, 726, 728, and 132
20	Evaporator Solids	F007, F009, D002, D003, D004, D006, D007, D008, D010, D011, F006, F008	728, 12, 171

¹ Standardized Permit Application, dated July 1, 2011, Section III -Waste Analysis Plan

*****END TABLE 1*****

TABLE 2 – PERMITTED UNITS AND ASSOCIATED WASTE STREAMS

#	Unit Description	Location	Permitted Waste Streams	Activities
1	Hazardous Waste Container Storage Area	S002	1-5, 7 and 8	Container Storage
2	Concentrator Tanks	S002	1-4, 8-12	Thermal Treatment
3	Precipitation Containers	S002	1-4, 7-12	Treatment in Containers
4	Electrowinning Tanks	S002	1-4, 7-12	Tank Treatment
5	Wastewater Treatment System Tanks	S003, and S005	1-4, 7-12	Tank Treatment
6	Evaporator	S002	1-5, 7-12	Thermal Treatment
7	Hazardous Waste Storage Shed	S004	1 and 8	Container Storage
8	Solder Dross Storage Area	S001	6	Container Storage
9	Acid/Water Wash Unit	S002	9, 11	Treatment in Containers
10	Crucible Furnace	F-1	9	Thermal Treatment
11	Filter Press	S005	13-15	Physical/Chemical Treatment
12	Filter Cake Storage	S005	14	Container Storage
13	Ion Exchange & Resin Regeneration	S003	15-18	Chemical Treatment
14	Spent Resin Storage	S003	18	Container Storage
15	pH Neutralization Container	S003	15-17	Treatment in Containers

*****END TABLE 2*****

TABLE 3 – WASTE GENERATION INFORMATION²

#	Waste Streams	Waste Source	Maximum Concentration
1	Aqueous solution with cyanide & precious metals	Off-site	Cyanide <0.1-2%, metals <0.1-0.5%
2	Non-reactive Dragout solutions with precious metals	Off-site	Cyanide <0.02%, metals <0.1%
3	Non-cyanide containing precious metals, non-acid	Off-site	metals <0.5%
4	Iodine etch solutions	Off-site	metals <0.1-0.5%
5	Residues containing precious metals	Off-site	Cyanide <0.1-0.8%, metals <0.1-0.5%
6	Solder dross	Off-site	Metals 15-35%
7	Photographic solutions with silver	Off-site	metals <0.1-0.7%
8	Cyanide strip solution	On-site	Cyanide <0.1-1%, metals <0.1-0.8%
9	Precious metal precipitate (mud)	From Gold Precipitation Treatment Tank T1 through T6, Water Wash / Filtration Containers, and Acid Wash / Filtration Containers. (On-site)	metals <0.5-1.5%
10	Precious metal precipitate supernatant & water wash (referred to as "Lean Liquor")	From Gold Precipitation Treatment Tank T1 through T6 or Electrowinning Tanks EW-1 through EW-4 (On-site)	Cyanide <0.2-1%, metals <0.1-0.5%
11	Acid purification solution	From Acid Wash / Filtration Containers (On-site)	metals <0.5-9%, pH <1
12	Neutralized acid solution	From Neutralization Containers (On-site)	metals <0.2-9%
13	Wastewater-sludge without cyanide	From Cyanide Destruction and Metal Precipitation WTS-1 and WTS-2 (On-site)	
14	Filter cake	From Filter Press Containers (On-site)	metals <0.5-10%

15	Non-hazardous wastewater effluent	From Filter Press Container, Ion-Exchange System Container, Holding Tank WTS-1 and WTS-2 (On-site).	
16	Resin regenerant solution, acidic	From Ion Exchange System Container (On-site)	metals 0.1-10%
17	Resin regenerant solution, caustic	From Ion exchange System Container (On-site)	Metals <0.1%
18	Spent ion exchange resin	From Ion Exchange System Container (On-site)	Metals 0.1-10%
19	Resin regenerant solution, neutralized	From pH Neutralization Container (On-site)	Metals 0.1-25%
20	Evaporator Solids	From Evaporator (E-1) (On-site).	cyanide 0.1-8%, metals 0.5-5%

² Standardized Permit Application dated July 1, 2011, Section III - Waste Analysis Plan

*****END TABLE 3*****

TABLE 4 – CONTAINER TYPES³

Container Type	Waste Streams
Polyethylene Drums, 55–Gallon	1, 2, 3, 4, 7, 8, 10, 12, 13, 19
Polyethylene Drums, 30–Gallon	1, 2, 3, 4, 7, 12
Polyethylene Drums, 15–Gallon	1, 2, 3, 4, 7, 12
Plastic Jerry Cans, 5-Gallons	1, 2, 4, 7, 12
Metal Drums with Removal Heads and Linear, 55-gallons	5, 6, 14, 20
Polyethylene Drums with Removable Heads, 55-Gallon	5
Polyethylene Drums with Removable Heads, 30-Gallon	5
Metal Drums with Removable Head, 55-Gallon	6, 14
Metal Drums with Removable Head, 30-Gallon	6, 14
Metal Drums with Removable Head, 15-Gallon	6, 14
Pyrex Jugs, 5-Gallon	10, 11
Plastic Buckets, 5-Gallon	9
Polyethylene Containers, 100-Gallon, open-top	1, 2, 3, 4, 8, 16, 17, 19
Polyethylene Containers, 50-Gallon, open-top	1, 2, 3, 4, 8
Polyethylene Containers, 30-Gallon, open-top	11, 12
Polyethylene Containers, 15-Gallon, open-top	11, 12
Fiberboard Box with Liner, IBC, 1 Cubic Yard	14
IBC Polyethylene Containers	1, 2, 3, 4, 7, 8, 10, 12, 13, 19

3 Standardized Permit Application, dated July 1, 2011, Section IV – Facility Design

*****END TABLE 4*****

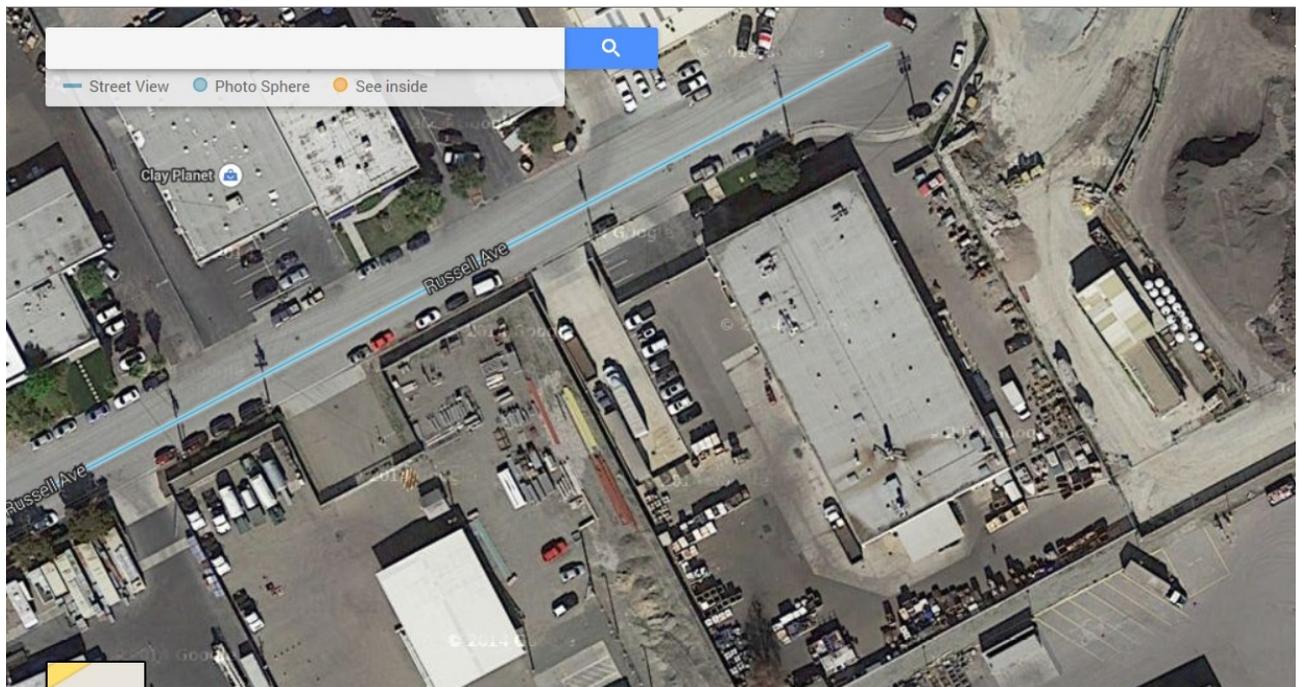
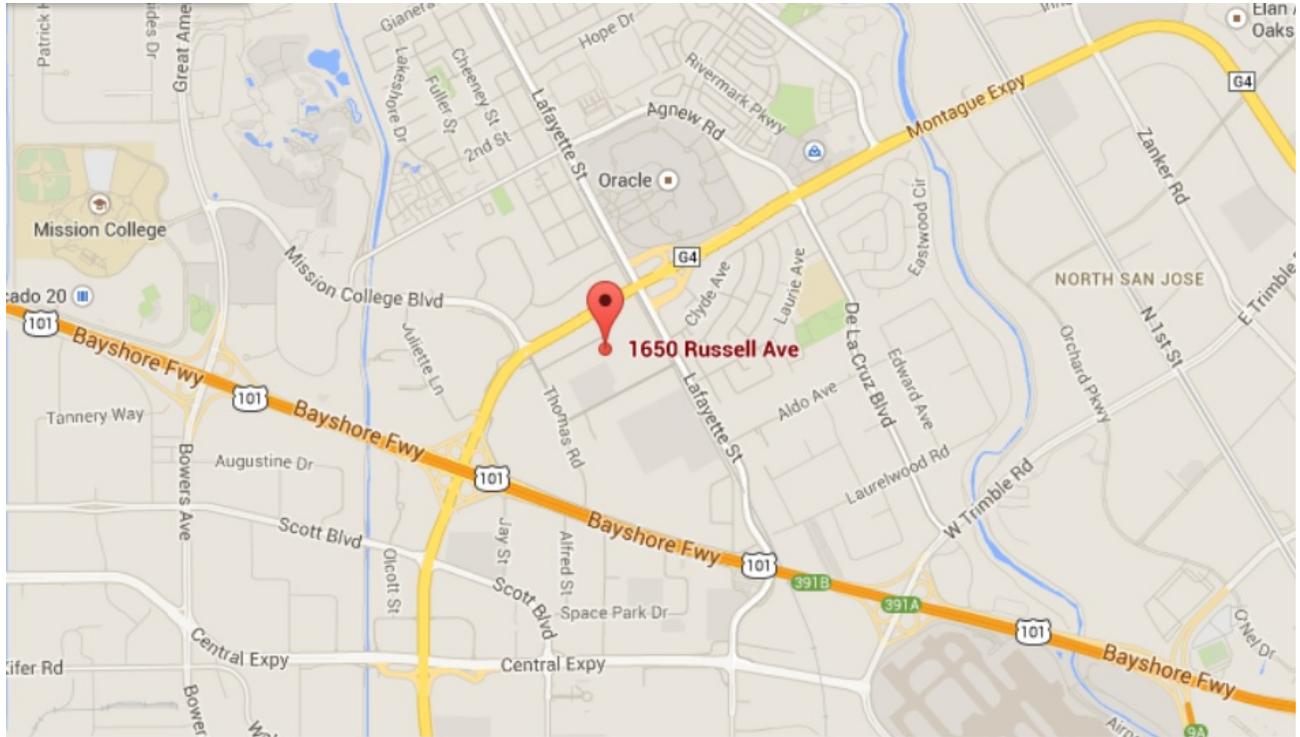


FIGURE 1 – LOCATION OF J&B REFINING, 1650 RUSSELL AVENUE, SANTA CLARA

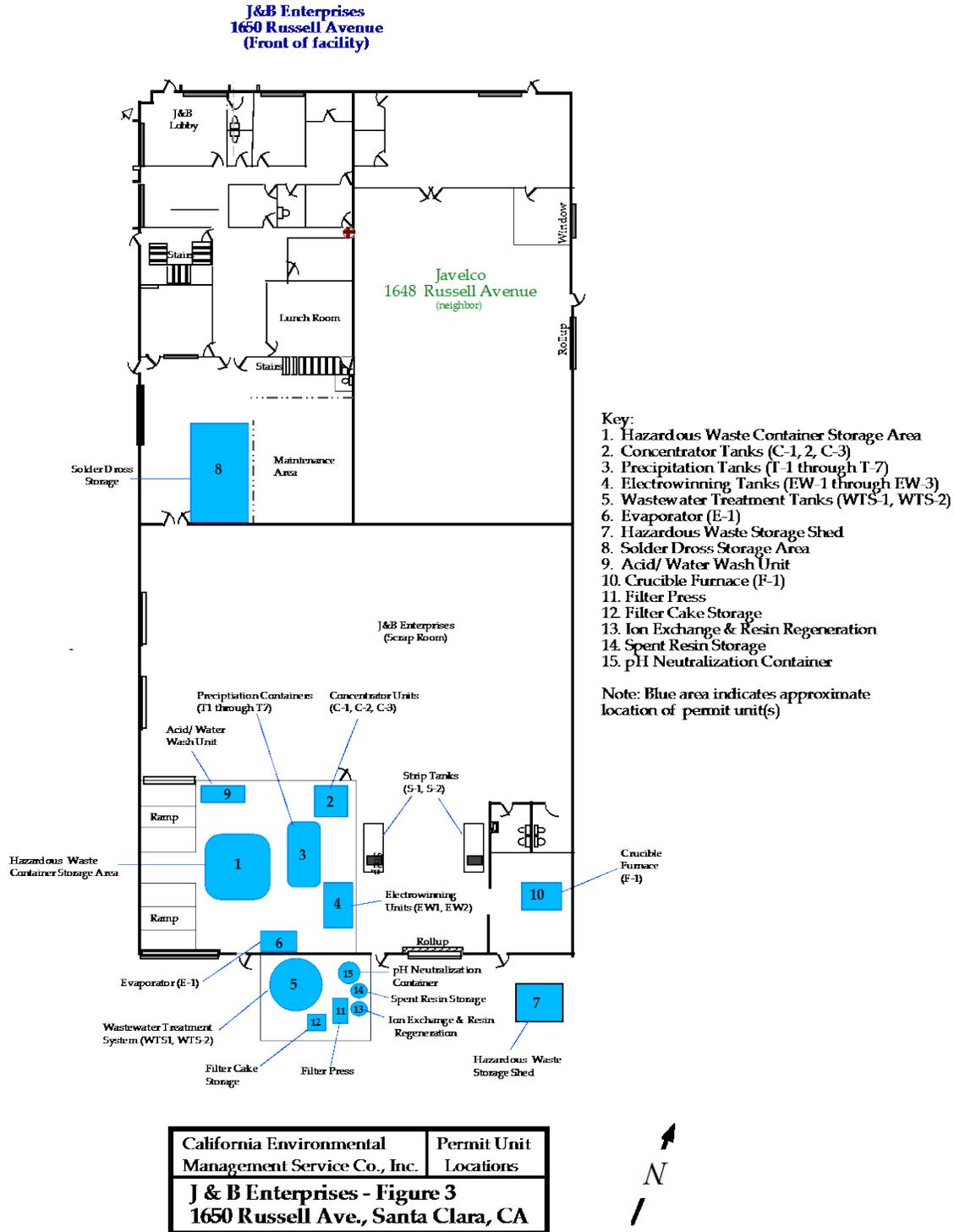


FIGURE 2 – SPATIAL LAYOUT OF REGULATED AREAS.

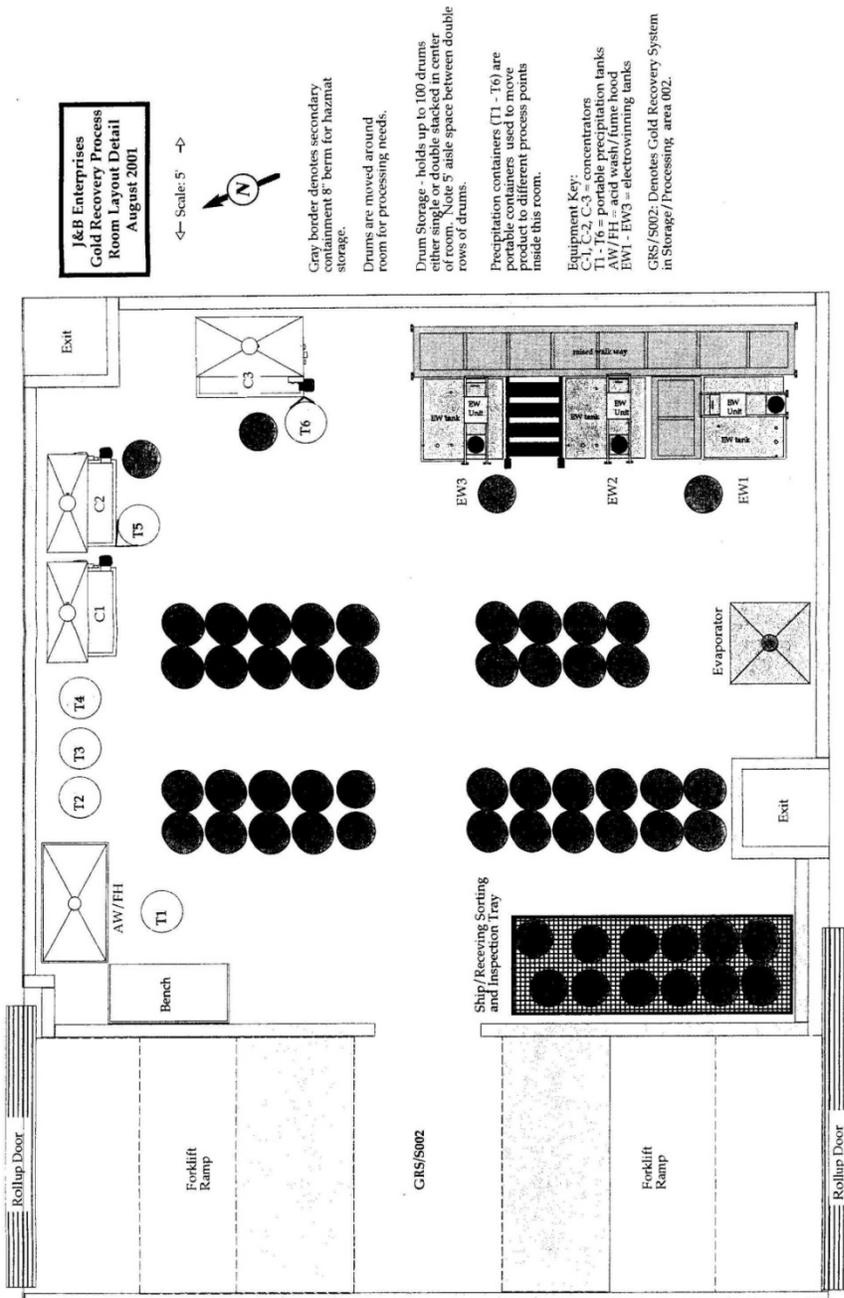


FIGURE 3 – PLAN VIEW OF GOLD RECOVERY SYSTEM

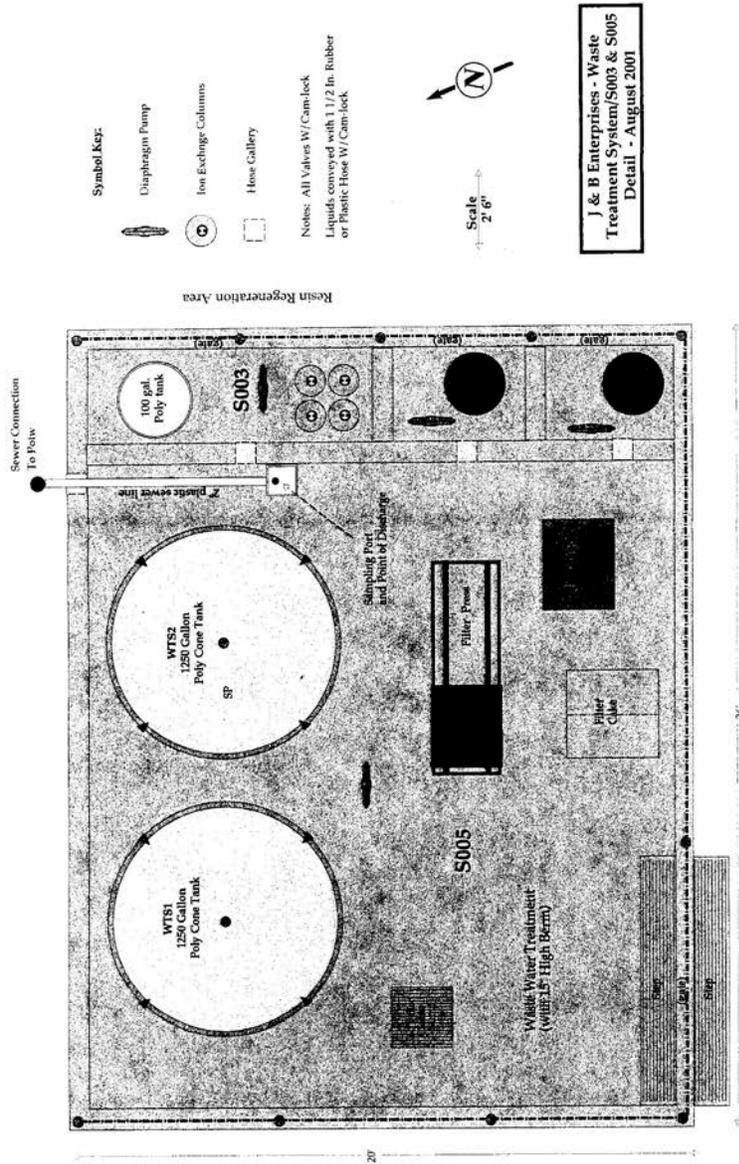


FIGURE 4 – PLAN VIEW OF WASTEWATER TREATMENT SYSTEM

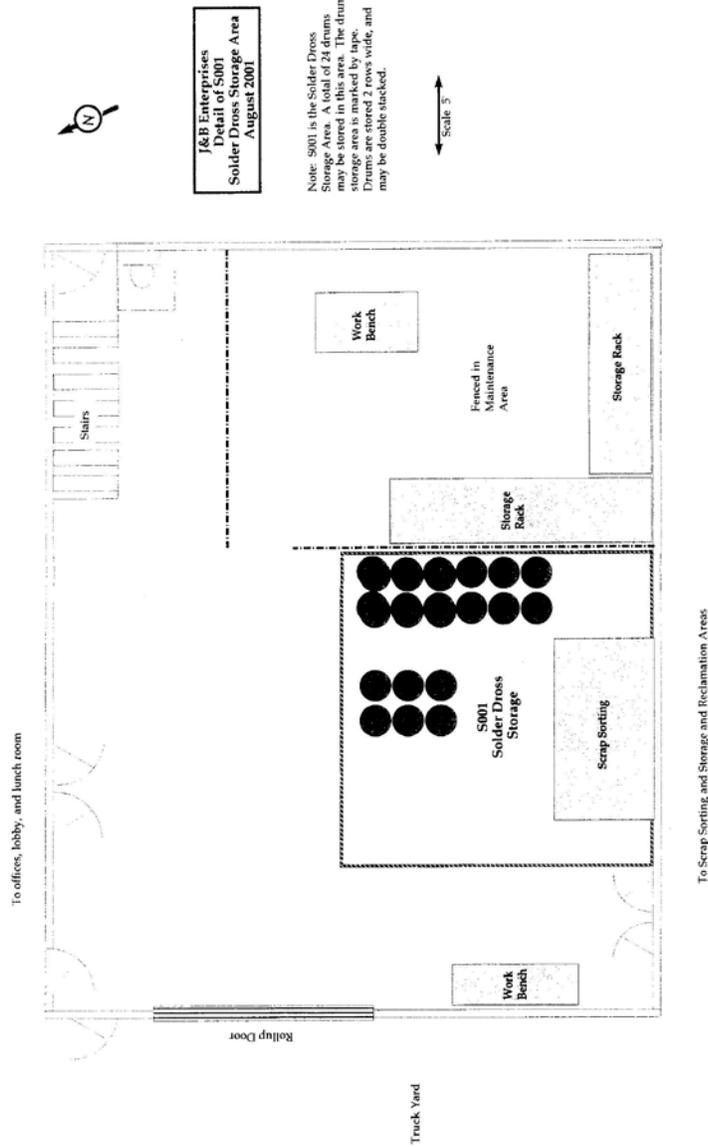
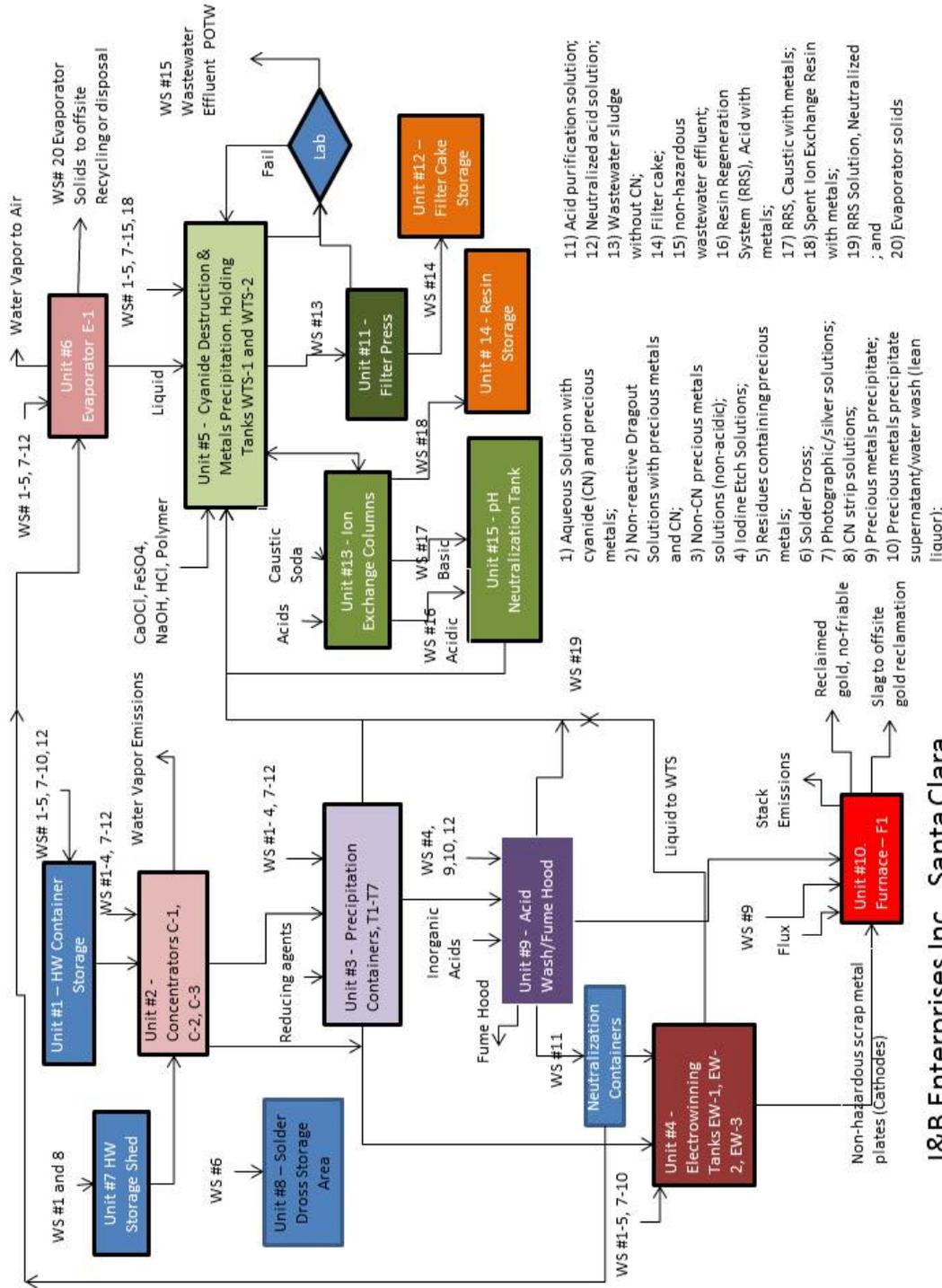


FIGURE 5 – PLAN VIEW OF SOLDER DROSS STORAGE AREA



J&B Enterprises Inc., Santa Clara

FIGURE 6. PROCESS FLOW DIAGRAM OF J&B ENTERPRISES, 1650 RUSSELL AVE, SANTA CLARA



FIGURE 7. PERMITTED UNITS AT J&B ENTERPRISES, 1650 RUSSELL AVENUE, SANTA CLARA