Monterey Bay Air Resources District
Serving Monterey, San Benito, and Santa Cruz Counties

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NOTICE OF CANCELLATION OF TITLE V PERMIT FOR TRICAL, INC.

NOTICE is hereby given that the District intends to cancel the Title V permit for Trical, Inc. for their agricultural chemical and receiving, storage and packaging facility located in Hollister, San Benito County. Trical formulates mixtures of methyl bromide, chloropicrin, and telone (1,3-dichloropropene) for use in the agricultural, structural and commodity pest control markets.

The facility has been subject to the requirements of Title V of the federal Clean Air Act, Part 70 of Volume 40 of the Code of Federal Regulations (CFR), and to the District's Rule 218, Title V: Federal Operating Permits due to the potential to emit (PTE) methyl bromide. Pursuant to District Rule 218, Section 2.18, a major source is any source that directly emits, or has the PTE 10 tons per year or more of any one hazardous air pollutant (HAP), or 25 tons per year or more of any combination of HAPs (including any fugitive emissions of such pollutant). Methyl bromide and telone are listed in EPA's list of HAPs.

The District received an application from Trical requesting the cancellation of Title V Permit TV69-02 on December 19, 2014. In the initial Title V permit, which was issued on August 20, 1997, the facility was deemed to be subject to Title V requirements because it reported methyl bromide emissions of 10.5 tons for calendar year 1995. Trical reported its 1995 emissions as part of the AB 2588 toxic emissions inventory reporting program. Since the issuance of the initial Title V permit the facility has installed both a 1) closed loop piping system for the receiving operations for methyl bromide & chloropicrin, and for the packaging operations for methyl bromide and a 2) carbon adsorption system for the cylinder filling (packaging operations) for telone & chloropicrin after the 1995 toxic emissions report. The modifications to the facility have reduced the fumigant receiving, storage & packaging operations below Rule 218 Title V thresholds.

Since the facility's PTE emissions are below the major source thresholds of District Rule 218, the District is proposing to cancel the existing Title V permit. The District intends to cancel the Title V permit after 30-days of this notice, on November 9, 2020.

The application package and District engineering evaluation are available for public inspection at the District office at 24580 Silver Cloud Court, Monterey, CA and website at www.mbard.org. A copy of the engineering evaluation is attached.

If you have questions regarding this matter, please contact Armando Jimenez by e-mail at ajimenez@mbard.org or at (831) 718-8034.

Dated at Monterey CA, the _9_ day of October, 2020.

Sincerely,

Armando Jimenez
Air Quality Engineer
Monterey Bay Air Resources District

MONTEREY BAY AIR RESOURCES DISTRICT
TITLE V CANCELLATION REQUEST
EVALUATION REPORT

24580 Silver Cloud Court
Monterey, CA 93940
Telephone: (831) 647-9411

Date: October 2020

APPLICATION RECEIVED FROM:

Trical, Inc.
PO Box 1327
Hollister, CA 95024-1327

PLANT SITE LOCATION:

8770 Highway 25
Hollister, California

SIC No: 2879 – Pesticides and Agricultural Chemicals

FACILITY CONTACT:

Name: Ms. Amy Thompson
Title: Safety Manager
Phone: (559) 805-3467

APPLICATION PROCESSED BY:

Armando Jimenez, Air Quality Engineer

AUTHORIZED FOR RELEASE ON: October 9, 2020

APPROVED FOR RELEASE BY:

Mary Giraudo
Mary Giraudo
Supervising Air Quality Engineer

Oct 9, 2020
Date

BACKGROUND:

Trical, Inc. (Trical) operates an agricultural chemical and receiving, storage and packaging facility. The facility is located at 8770 Highway 25, Hollister, in San Benito County. Trical formulates mixtures of methyl bromide, chloropicrin, and telone (1,3-dichloropropene) for use in the agricultural, structural and commodity pest control markets. The facility has been subject to the requirements of Title V of the federal Clean Air Act, Part 70 of Volume 40 of the Code of Federal Regulations (CFR), and to the District's Rule 218, Title V: Federal Operating Permits due to the potential to emit (PTE) methyl bromide. Pursuant to District Rule 218, Section 2.18, a major source is any source that directly emits, or has the PTE 10 tons per year or more of any one hazardous air pollutant (HAP), or 25 tons per year or more of any combination of HAPs (including any fugitive emissions of such pollutant). Methyl bromide and telone are listed in EPA's list of HAPs.

The District received an application from Trical requesting the cancellation of Title V Permit TV69-02 on December 19, 2014. As set forth below, the District recommends that the facility be exempt from the Title V requirements and for the cancellation of the facility's Title V permit.

SITE DESCRIPTION:

Methyl bromide, chloropicrin, and telone are received in bulk by rail tanker, tank truck and cylinders. Trical transfers the product from the railcar to appropriate storage facilities or directly to filling stations for packaging. A description of Trical's current receiving, storage and packaging operations is listed below:

Receiving & Storage Operations

- Telone is received via railcars & tanker-trucks and transferred into three 35,000 gallon telone storage tanks and/or one 10,000-gallon telone working tank via a closed loop piping system with balance-type vapor return lines, dry-break couplers and nitrogen gas blanket control.
    - Telone transferred between the three 35,000-gallon storage tanks and the one 10,000-gallon working tank is done via a closed loop piping system.
- Chloropicrin is received via railcars, tanker-trucks & cylinders and transferred via closed loop piping system into ten (10) 10,000-gallon chloropicrin storage tanks and/or formulated and loaded directly into cylinders. Note that the closed loop piping systems for methyl bromide and chloropicrin was installed in 1999 under Authority to Construct (ATC) 9714. A copy of the ATC is included in Attachment 1.
- Methyl bromide is received via railcar & Department of Transportation (DOT) cylinders and is formulated and packaged directly into DOT cylinders via a closed loop piping system. Vapors from packaging operations are displaced into a recovery tank system. The vapor is then liquefied and captured into a tank. Note that the closed loop piping systems for methyl bromide and chloropicrin was installed in 1999 under ATC 9714.

Packaging Operations

- Telone is loaded into tanker-trucks via closed loop piping system with dry disconnects from the 10,000-gallon working tank.
- Formulations of telone and chloropicrin are packaged into cylinders at four filling stations with displaced cylinder vapors routed through a carbon adsorption system.
    - Carbon adsorption system consisting of two carbon drums in series, each drum containing 180 pounds of activated carbon. Note that the carbon absorption system was installed in

1997 under ATC 8703. A copy of the ATC is included in Attachment 2.

- Formulations of methyl bromide and chloropicrin are packaged into cylinders at six filling stations, each equipped with hoses and attachments for filling fumigant cylinders with the displaced vapors routed to a 1,000-gallon liquid capture tank via a closed loop piping system. Liquid capture tank is equipped with a pressure relief valve.

Flow diagrams for the receiving, storage and packaging facilities are included in Attachment 3. In addition to the chemical receiving, storage & packaging operations, the facility operates cylinder paint scrubbing equipment, a paint spray booth and a laboratory fume hood.

Fumigant Supporting Operations
In addition to the methyl bromide, telone, and chloropicrin operations, Trical has the following operations:

- Laboratory operations;
  - Operations include three fume hoods servicing the packaging scales for methyl bromide, telone, and chloropicrin operations.
  - Hood 1 is used to analyze fumigants, hood 2 is used to analyze film permeability, and hood 3 is utilized for analyzing water, soil and plant samples. VOCs are used in hoods 1 and 2. Only acids are utilized in hood 3.
- Cylinder paint scrubbing operations; and,
  - Operations include blast and wash system used to remove paint from cylinders used to store fumigants. The equipment is vented to a baghouse to collect the dust and paint particles generated.
- Paint spray operations.
  - The paint spray booth is used for touch-up work on the steel cylinders that are used to store fumigants.

POTENTIAL TO EMIT:

Fumigant Receiving, Storage & Packaging Emissions
In the initial Title V permit, which was issued on August 20, 1997, the facility was deemed to be subject to Title V requirements because it reported methyl bromide emissions of 10.5 tons for calendar year 1995. Trical reported its 1995 emissions as part of the AB 2588 toxic emissions inventory reporting program. A copy of the 1995 AB 2588 toxic emissions inventory report is included in Attachment 4.

As noted above, the facility installed both a 1) closed loop piping system for the receiving operations for methyl bromide & chloropicrin, and for the packaging operations for methyl bromide and a 2) carbon adsorption system for the cylinder filling (packaging operations) for telone & chloropicrin after the 1995 toxic emissions report. The modifications to the facility have reduced the fumigant receiving, storage & packaging operations. The potential emissions from the fumigant receiving, storage & packaging emissions have been updated to reflect the installation and used of the emission reduction equipment. Table 1 shows the potential annual throughput for each of the fumigants.

Table 1. Fumigant emissions type and potential throughputs.

Pollutant	Emissions Type	Potential annual throughput
Methyl bromide	Unload fugitive emissions	2,160,000 pounds
Chloropicrin	Unload fugitive, storage fugitive, vent & fill	9,300,000 pounds
Telone	Unload fugitive, storage fugitive, vent & fill	1,300,000 gallons

Emissions estimation methodologies

Unloading and storage fugitive emissions are quantified based on component counts using EPA's Protocol for Equipment Leak Emissions Estimate, Table 2.5 SCOMI Screening Ranges Emission Factors. Shows the SCOMI screening ranges emission factors for volatile organic compounds (VOCs).

Table 2. EPA's SOCMI Screening ranges emission factors.

Equipment type	Service	≥10,000 ppmv emission factor (kg/hr/source)[a]	<10,000 ppmv emission factor (kg/hr/source)[a]
Valves	Gas	0.0782	0.000131
	Light liquid	0.0892	0.000165
	Heavy liquid	0.00023	0.00023
Pump seals[b]	Light liquid	0.243	0.00187
	Heavy liquid	0.216	0.00210
Compressor seals	Gas	1.608	0.0894
Pressure relief valves	Gas	1.691	0.0447
Connectors	All	0.113	0.0000810
Open-ended lines	All	0.01195	0.00150

[a] These factors are for total organic compound emission rates.
[b] The light liquid pump seal factors can be applied to estimate the leak rate from agitator seals.

The facility has an inspection and maintenance plan (I&MP) to monitor for leaks. The facility has stated that it does not allow for leaking components. Thus, the emissions factors for leaks <10,000 ppmv will be used to estimate the emissions.

Disconnect losses from dry break connectors during the unloading operations will be calculated based on the number of connections and disconnections of the rail tank cars to the filling plant. The losses from dry break connectors are based on a dripping rate of 10 milliliters (ml) per disconnect, as shown below:

$$\frac{Lb}{yr} = \frac{No.\,of\ railcars}{yr} x\ \frac{2\ liquid\ disconnects}{railcar} x \frac{10\ ml}{disconnect} x\ \frac{0.002642\ gal}{ml}\ x\ liquid\ desnisty, \frac{lb}{gal}$$

Cylinder venting and filling emissions served by the carbon adsorption system are quantified based on cylinder volume, number of cylinders, molecular weight and vapor pressure of the substance, shown below:

$$Lb/yr\ (substance)\ =\ (Cv/7.48)\ *\ (VP/760)\ *\ (MW)\ *\ (1/385)\ *\ (N)\ *\ (1-E)$$

Where:

$$Cv = cylinder\ volume\ (gal)$$
$$VP = vapor\ pressure\ of\ substance\ (mmHg)$$
$$MW = molecular\ weight\ of\ substance\ (lb/lb-mole)$$

$$N = number\ of\ cylinders\ per\ year$$
$$E = control\ efficiency\ (tested\ by\ Trical)$$
$$1\ cu.ft = 7.48\ gal$$
$$1\ lb-mole\ gas = 385\ cu\ ft\ (standard\ volume\ @\ 1\ atm\ and\ 68ºF)$$

For the carbon adsorption system serving the venting and filling operations, the facility has conducted a study to determine when the carbon drum is saturated with chloropicrin and telone or breakthrough point. The study showed that chloropicrin vapors increased sharply after 800 cylinders were filled, indicating breakthrough potential at the first carbon canister at this point. There was no detection of telone or chloropicrin at the outlet of the second drum. Although there was a small spike at about the same time, telone concentrations did not increase as dramatically. This was to be expected, as the ratio of chloropicrin to telone in the product cylinders scrubbed through the system have a significantly higher chloropicrin content than telone content. The study is included in Attachment 5. Based on the results of the study a control efficiency of 98% will be used for the carbon adsorption system. The District will require that the carbon canister be changed after processing 800 cylinders.

Methyl bromide PTE emissions
As indicated in Table 1, only fugitive emissions are expected from methyl bromide operations. The facility has stated that dry break connectors have been replaced by unions, which have been counted in the component count below. The fugitive emissions from the methyl bromide operations are shown in Table 3.

Table 3. Methyl bromide operations' fugitive emissions.

Equipment type	Service	Component count	<10,000 ppmv emission factor (kg/hr/source)[a]	VOC emissions (lb/day)	VOC emissions (ton/yr)
Valves	Gas	0	0.000131	--	--
	Light liquid	39	0.000165	0.340	0.06
	Heavy liquid	0	0.00023	--	--
Pump seals	Light liquid	0	0.00187	--	--
	Heavy liquid	0	0.00210	--	--
Compressor seals	Gas	0	0.0894	--	--
Connectors	All	241	0.0000810	1.033	0.19
Pressure relief valves	Gas	0	0.0447	--	--
Open-ended lines	All	0	0.00150	--	--
Total emissions =				1.373	0.25

Telone PTE emissions
As indicated in Table 1, the expected emissions from telone operations include fugitive, vent and fill, and unloading operations. The fugitive emissions from the receiving/unloading operations are shown in Table 4. The fugitive emissions from the telone storage tanks are shown in Table 5. As noted in the Site Description above, the storage tanks are equipped with a nitrogen blanket to reduce fugitive emissions.

Table 4. Telone receiving/unloading operations' fugitive emissions.

Equipment type	Service	Component count	<10,000 ppmv emission factor (kg/hr/source)[a]	VOC emissions (lb/day)	VOC emissions (ton/yr)
Valves	Gas	0	0.000131	--	--
	Light liquid	51	0.000165	0.445	0.08
	Heavy liquid	0	0.00023	--	--
Pump seals	Light liquid	4	0.00187	0.396	0.07
	Heavy liquid	0	0.00210	--	--
Compressor seals	Gas	0	0.0894	--	--
Connectors	All	384	0.0000810	1.646	0.3
Pressure relief valves	Gas	4	0.0447	9.46	1.73
Open-ended lines	All	0	0.00150	--	--
Total emissions =				11.947	2.18

Table 5. Telone storage tanks' fugitive emissions.

Equipment type	Service	Component count	<10,000 ppmv emission factor (kg/hr/source)[a]	VOC emissions (lb/day)	VOC emissions (ton/yr)
Valves	Gas	5	0.000131	0.035	0.0064
	Light liquid	7	0.000165	0.061	0.0111
	Heavy liquid	0	0.00023	--	--
Pump seals	Light liquid	0	0.00187	--	--
	Heavy liquid	0	0.00210	--	--
Compressor seals	Gas	0	0.0894	--	--
Connectors	All	32	0.0000810	0.137	0.0250
Pressure relief valves[1]	Gas	2	0.0447	0.473	0.0863
Open-ended lines	All	0	0.00150	--	--
Total emissions per telone storage tank =				0.706	0.129
Total emissions for all three (3) telone storage tanks =				2.118	0.387

[1] Storage tanks are equipped with a nitrogen blanket system. Fugitive emissions from pressure relief (PV) valves are conservatively estimated assuming the gas escaping the PV valves contains 10% telone.

The telone disconnect losses from the dry break connectors during the unloading operation are based on 74 railcars deliveries per year (with a total annual throughput of 1,300,000 gallons). The specific gravity of liquid telone is 1.22. The disconnect losses are as follows as follows:

$$\frac{Lb}{yr} = \frac{74}{yr} x \frac{2\ liquid\ disconnects}{railcar} x \frac{10\ ml}{disconnect} x \frac{0.002642\ gal}{ml}\ x\ liquid\ density, \frac{1.22 \text{ x } 8.37\ lb}{gal} = \frac{39.79\ lb\ telone}{yr}$$

The telone emission from the cylinder vent and fill operations are based on cylinder capacity of 57 gallons for 22,807 cylinders filled for the year [(1,300,000 gallon/yr) (cylinder/57 gallon) = 22,807 cylinder/yr]. The vent and fill operation emissions are as follows:

$$Lb/yr\ (substance)\ =\ (Cv/7.48)\ *\ (VP/760)\ *\ (MW)\ *\ (1/385)\ *\ (N)\ *\ (1-E)$$

Where:

$$Cv = 57\ (gal)$$
$$VP = 23\ (mmHg)$$
$$MW = 110.97\ (lb/lb-mole)$$
$$N = 22{,}807\ cylinder/yr$$
$$E = 98\%\ (tested\ by\ Trical)$$
$$1\ cu.ft = 7.48\ gal$$
$$1\ lb-mole\ gas = 385\ cu\ ft\ (standard\ volume\ @\ 1\ atm\ and\ 68ºF)$$

$$\frac{Lb}{yr}(telone) = \left(\frac{57}{7.48}\right) * \left(\frac{23}{760}\right) * (110.97) * \left(\frac{1}{385}\right) * (22{,}807) * (1 - 0.98) = \frac{30.32\ lb\ telone}{yr}$$

The total telone PTE emissions at the facility are shown on Table 6.

Table 6. Total telone PTE emissions.

Operations type:	Emissions (lb/yr)	Emissions (ton/yr)
Unloading fugitive	4,360.66	2.18
Storage fugitive	812.86	0.41
Vent and fill	30.32	0.02
Total emissions =	5,203.84	2.61

Chloropicrin PTE emissions:
As indicated in Table 1, the expected emissions from chloropicrin operations include fugitive, vent and fill, and unloading operations. The fugitive emissions from the receiving/unloading operations are shown in Table 7. The fugitive emissions from the chloropicrin storage tanks are shown in Table 8. The facility has stated that dry break connectors have been replaced by unions, which have been counted in the component count below. As noted in the Site Description above, the storage tanks are equipped with a nitrogen blanket to reduce fugitive emissions.

Table 7. Chloropicrin receiving/unloading operations' fugitive emissions.

Equipment type	Service	Component count	<10,000 ppmv emission factor (kg/hr/source)[a]	VOC emissions (lb/day)	VOC emissions (ton/yr)
Valves	Gas	0	0.000131	--	--
	Light liquid	75	0.000165	0.655	0.12
	Heavy liquid	0	0.00023	--	--
Pump seals	Light liquid	1	0.00187	0.099	0.02
	Heavy liquid	0	0.00210	--	--
Compressor seals	Gas	1	0.0894	--	--
Connectors	All	429	0.0000810	1.839	0.34
Pressure relief valves	Gas	11	0.0447	26.016	4.75
Open-ended lines	All	0	0.00150	--	--
Total emissions =				28.609	5.23

Table 8. Chloropicrin storage tanks' fugitive emissions.

Equipment type	Service	Component count	<10,000 ppmv emission factor (kg/hr/source)[a]	VOC emissions (lb/day)	VOC emissions (ton/yr)
Valves	Gas	5	0.000131	0.035	0.0064
	Light liquid	7	0.000165	0.061	0.0111
	Heavy liquid	0	0.00023	--	--
Pump seals	Light liquid	0	0.00187	--	--
	Heavy liquid	0	0.00210	--	--
Compressor seals	Gas	0	0.0894	--	--
Connectors	All	32	0.0000810	0.137	0.0250
Pressure relief valves	Gas	2	0.0447	0.473	0.0863
Open-ended lines	All	0	0.00150	--	--
Total emissions per chloropicrin storage tank =				0.706	0.129
Total emissions for all ten (10) chloropicrin storage tanks =				7.06	1.29

[1] Storage tanks are equipped with a nitrogen blanket system. Fugitive emissions from pressure relief (PV) valves are conservatively estimated assuming the gas escaping the PV valves contains 10% chloropicrin.

The chloropicrin emission from the cylinder vent and fill operations are based on cylinder capacity of 57 gallons for 22,807 cylinders filled for the year [(9,300,000 lbs/yr) (gal chloropicrin/13.7 lb chloropicrin) (cylinder/57 gallon) = 11,909 cylinder/yr]. The vent and fill operation emissions are as follows:

$$Lb/yr\ (substance) = (Cv/7.48) * (VP/760) * (MW) * (1/385) * (N) * (1 - E)$$

Where:

$$Cv = 57\ (gal)$$
$$VP = 18.3\ (mmHg)$$
$$MW = 164.38\ (lb/lb - mole)$$
$$N = 11{,}909\ cylinder/yr$$
$$E = 98\%\ (tested\ by\ Trical)$$
$$1\ cu.ft = 7.48\ gal$$
$$1\ lb - mole\ gas = 385\ cu\ ft\ (standard\ volume\ @\ 1\ atm\ and\ 68ºF)$$

$$\frac{Lb}{yr}(telone) = \left(\frac{57}{7.48}\right) * \left(\frac{18.3}{760}\right) * (164.38) * \left(\frac{1}{385}\right) * (11{,}909) * (1 - 0.98) = \frac{18.66\ lb\ telone}{yr}$$

The total chloropicrin PTE emissions at the facility are shown on Table 9.

Table 9. Total chloropicrin PTE emissions.

Operations type:	Emissions (lb/yr)	Emissions (ton/yr)
Unloading fugitive	10,442.29	5.22
Storage fugitive	2,576.90	1.29
Vent and fill	18.66	0.01
PTE VOC emissions =	13,037.85	6.52

Table 10 shows the total fumigant receiving, storage & packaging PTE VOC emissions.

Table 10. Fumigant receiving, storage & packaging PTE VOC emissions.

Fumigant	Emissions (ton/yr)
Methyl bromide	0.25
Telone	2.61
Chloropicrin	6.52
Total VOC emissions:	9.38

PTE HAP emissions from the fumigant operations at the facility are shown in Table 11.

Table 11. PTE HAP emissions from fumigant receiving, storage & packaging.

Fumigant	Emissions (ton/yr)
Methyl bromide	0.25
Telone	2.61
PTE HAP emissions:	2.86

PTE Emissions from Fumigant Supporting Operations
Fumigant supporting operations include: laboratory, cylinder scrubbing and paint spray operations.

Laboratory operations PTE emissions
Historical records show that the chemicals used in the laboratory operations include: ethyl acetate, isopropyl alcohol (IPA), methyl alcohol, methyl bromide, telone, dimethyl disulfide (DMDS), chloropicrin, ethyl alcohol, and acetone. The combine chemical usage has been historically less than 50 pounds per year (<0.137 pounds per day). Ethyl acetate accounts for most of the chemical use with about 75.4% of total use. For the HAP chemicals, methyl bromide accounted for 5% of the total use, telone accounted for 4.6% of the total use, methanol was used inconsistently and when it was used accounted for about 1.4% of the total chemical use.

For purposes of estimating the VOC PTE emissions from laboratory operations, a conservative usage of 1 pound per day (0.18 tons/year) will be assumed. Table 12 shows the estimated HAP emissions based on the conservative chemical usage of 1 pound per day and historical usage rates.

Table 12. Laboratory operation HAP PTE emissions.

Chemical	VOC PTE emissions (ton/yr)	Chemical usage (% of VOC PTE emissions)	Emissions (ton/yr)
Methyl bromide	0.18	5.0	0.009
Telone	0.18	4.6	0.008
Methanol	0.18	1.4	0.003
		Total HAP emissions:	0.02

Cylinder scrubbing PTE emissions
Emissions from the cylinder cleaning (blasting) operation will be quantified based on estimated particulate emissions, which will be speciated according to an analysis of spent shot blast. Hourly particulate emissions will be based on the uncontrolled emission factor from STAPPA/ALAPCO (Vol.1) – Table 3-2, 5/30/91 edition. Since the emissions are exhausted to a baghouse, a control efficiency of 99% is assumed (per San Joaquin Valley APCD policy). Annual particulate emissions will be based on the hourly emission limit, conservatively applying a 6-hour workday.

For steel shot as abrasive blasting material, the emission factor (EF) is:

$$PM(uncontrolled) = \frac{0.004\ lb\ PM}{lb\ abrasive}$$

$$PM(controlled) = \frac{0.004\ lb\ PM}{lb\ abrasive} x(1 - 0.99) = \frac{0.00004\ lb\ PM}{lb\ abrasive}$$

Historical records show that the facility uses about 1 ton of abrasive blasting material to blast up to 2,000 cylinders per year. The PTE emissions will be estimated assuming all of the fumigant cylinders or 37,342 cylinders (2,626 cylinders for methyl bromide, 22,807 cylinder for telone and 11,909 cylinders for chloropicrin). The estimated amount of abrasive blasting material needed to blast the cylinders is 37,342 pounds per year [(37,342 cylinder/yr) (2,000 lb abrasive/2,000 cylinder) = 37,342 lb abrasive/yr].

The PTE emissions are as follows:

$$PM(controlled) = \frac{0.00004\ lb\ PM}{lb\ abrasive} x \frac{37{,}342\ lb\ abrasive}{yr} = \frac{1.49\ lb\ PM}{yr} = \frac{7.45E-04\ ton\ PM}{yr}$$

Paint Spray PTE VOC emissions
For the paint spray operations, the historical records show that the facility has used less than 100 gallons of coatings and solvents per year. The permit to operate for the paint spray facility limits VOC emissions to 40 pounds per day. The PTE emissions based on the daily limit of 40 pounds per day are 7.3 tons per year [(40 lb/day) (365 day/yr) (ton 2,000 lb) = 7.3 ton/yr].

Paint Spray PTE HAP emissions
For calendar year 2018, Trical submitted a list of coatings with safety data sheets (SDSs) used in the paint spray operations. The total coating used was 9.5 gallons. Trical reported using 6.75 gallons of the Valspar LIC50 general purpose enamel and 2.75 gallons of the Lusid TNEK epoxy primer (two-part coating). The Valspar SDS shows that it coating contains up to 0.3% by weight of ethyl benzene. The Lusid TNEK epoxy primer is two-part coating with mixing ratio of one-part epoxy base and one-part epoxy catalyst. The epoxy base contains up to 2.5% by weight of xylene and 2.5% by weight of ethyl benzene. The epoxy catalyst contains up to 50% by weight of xylenes. The PTE HAP emissions will be estimated assuming the facility uses 29% [(6.75 gallons of Valspar/9.75 gallons coating) = 29%] by weight of the Valspar coating and 71% of the Lusid TNEK epoxy two-part coating. Table 13 shows the PTE HAP emissions.

Table 13. Paint spray PTE HAP emissions.

Coating	Chemical	Weight %	Annual coating use (ton/yr)[1]	Annual emission (ton/yr)
Valspar	Ethyl benzene	0.3	2.12	0.006
Lusid epoxy base	Ethyl benzene	2.5	2.59	0.065
	Xylenes	2.5		0.065
Lusid epoxy catalyst	Xylenes	50	2.59	1.295
		Totals:	7.3	1.431

[1] Annual coating use is estimated using the coating permit VOC limit of 7.3 ton/yr (based on daily limit of 41 lb/day) and the extrapolation of the reported coating use for 2018. For example, Valspar annual use = (7.3 tons/yr) (29%) = 2.12 ton/yr.

Facility-wide PTE Emissions
Table 14 shows the facility-wide criteria PTE emissions from the fumigant receiving, storage & packaging,

laboratory, cylinder scrubbing, and paint spray operations.

Table 14. Facility-wide criteria pollutant PTE emissions.

Process:	NO_x (ton/yr)	VOC (ton/yr)	CO (ton/yr)	SO_x (ton/yr)	PM (ton/yr)
Fumigant receiving, storage & packaging	--	9.38	--	--	--
Laboratory operations	--	0.18	--	--	--
Cylinder scrubbing PTE emissions	--	--	--	--	7.45E-04
Paint Spray PTE VOC emissions	--	7.30	--	--	--
Total:	--	16.86	--	--	7.45E-04

Table 15 shows the facility-wide individual HAP PTE emissions from the fumigant receiving, storage & packaging, laboratory, cylinder scrubbing, and paint spray operations.

Table 15. Facility-wide individual HAP PTE emissions.

Process:	Methyl bromide (ton/yr)	Telone (ton/yr)	Methanol (ton/yr)	Ethyl benzene (ton/yr)	Xylenes (ton/yr)
Fumigant receiving, storage & packaging	0.25	2.61	--	--	--
Laboratory operations	0.009	0.008	0.003	--	--
Paint Spray PTE VOC emissions	--	--	--	0.071	1.36
Total:	0.259	2.618	0.003	0.071	1.36

Table 16 shows the facility-wide total HAP PTE emissions from the fumigant receiving, storage & packaging, laboratory, cylinder scrubbing, and paint spray operations.

Table 16. Facility-wide total HAP PTE emissions.

Process:	Emissions (ton/yr)
Methyl bromide	0.259
Telone	2.618
Methanol	0.003
Ethyl benzene	0.071
Xylenes	1.360
Total:	4.311

Table 14 shows that the facility is well below the major source thresholds of 100 tons per year of criteria pollutants. Table 15 shows that the facility is well below the major source threshold of 10 tons per year for any one hazardous air pollutant. Table 16 shows that the facility is well below the major source threshold of 25 tons per year or more of any combination of hazardous air pollutants.

RECOMMENDATIONS:

The facility has demonstrated that the facility-wide PTE emissions are well below the major source thresholds of District Rule 218, Section 2.18. Since the facility's PTE is below the major source thresholds, the District's recommendation is to cancel the existing Title V Permit. The District will notify the California Air Resources Board and US EPA Region 9 of the District's recommendation to cancel the Title V Permit. A 30-day public notice of cancellation will be posted on the District website with the District's preliminary decision to cancel Trical, Inc.'s Title V permit

Attachment 1
Trical, Inc. Authority to Construct 9714

MONTEREY BAY
Unified Air Pollution Control District
serving Monterey, San Benito, and Santa Cruz counties

AIR POLLUTION CONTROL OFFICER
Douglas Quetin

24580 Silver Cloud Court • Monterey, California 93940 • 831/647-9411 • FAX 831/647-8501

MAR - 1 1999

Mr. Hank Maze
Chief Financial Officer
Trical, Inc.
P.O. Box 1327
Hollister, CA 95024

Subject: Authority to Construct 9714 - Modification To The Methyl Bromide & Chloropicrin Receiving, Storage And Packaging Operation

Dear Mr. Maze:

The District has completed its evaluation of your application for the installation of a closed loop piping (recovery) system for the methyl bromide & chloropicrin receiving, storage and packaging operation at your Bolsa facility. It was found that the equipment has the capability to comply with all applicable District rules.

Accordingly, I have enclosed Authority to Construct (ATC) 9714 authorizing the installation and temporary operation of this equipment. **This ATC must be posted or kept readily available at the operating premises.**

Please review this ATC and note the operational and reporting requirements. In particular, note Condition 1 which requires District notification upon the installation of the equipment to schedule an inspection to verify compliance with District requirements.

The data supplied with the application and information supplied by the Florida Department of Environmental Protection regarding a similar type closed loop piping ("control") system at the Hendrix and Dail facility were insufficient to calculate emission reductions from this proposed installation. Upon installation of the system, the District and Trical will need to agree on the emission reductions attributed to the installation of this system based upon the "as-built" design (e.g. - number of flanges, valves, connectors and compressors) and based upon the operational constraints of the system including pressure releases and manual bypasses of the system. The established emission factor for this operation will then be utilized to determine if the facility is below the major source thresholds and therefore exempt from the Title V permitting requirements.

Permit renewal fees will be assessed annually on the anniversary date of the permit and will be based on reported equipment usage.

If you should have any questions, please feel free to contact me at the District office.

Sincerely,

Mike Sewell

Mike Sewell
Air Quality Engineer

encl: Authority to Construct 9714

MONTEREY BAY UNIFIED AIR POLLUTION CONTROL DISTRICT

AUTHORITY TO CONSTRUCT

MONTEREY, CALIFORNIA 93940 — TELEPHONE: (408) 647-9411

APPLICATION NUMBER

9714

AN **AUTHORITY TO CONSTRUCT** IS GRANTED AS OF MAR - 1 1999

LEGAL OWNER OR OPERATOR: TRICAL, INC.

EQUIPMENT LOCATED AT: 8770 Highway 25
Hollister, California

EQUIPMENT DESCRIPTION AND CONDITIONS: THIS AUTHORITY TO CONSTRUCT IS ISSUED AND IS VALID FOR THIS EQUIPMENT ONLY WHILE IT IS IN THE CONFIGURATION SET FORTH IN THE FOLLOWING DESCRIPTION:

MODIFICATION OF THE METHYL BROMIDE & CHLOROPICRIN RECEIVING, STORAGE AND PACKAGING OPERATION, CONSISTING OF:

1. The Addition Of Two (2) 2,500 Gallon Liquid Capture Tanks, A Liquefied Gas Transfer Compressor, And The Associated Closed Loop Piping Systems To Transfer Methyl Bromide & Chloropicrin From Railcars To The Existing Stationary Storage Tanks And/Or Directly To Filling Operations.

2. Installation Of Pressure Relief Valves And The Closed Loop Piping System On The Existing Nine 10,000 Gallon Methyl Bromide And Two 10,000 Gallon Chloropicrin Storage Tanks.

3. Installation Of The Closed Loop Piping System At The Existing Four Tank Filling Stations.

THIS AUTHORITY TO CONSTRUCT IS NOT A PERMIT TO OPERATE!

APPROVAL OR DENIAL OF THE APPLICATION FOR PERMIT TO OPERATE THE ABOVE EQUIPMENT WILL BE MADE AFTER AN INSPECTION TO DETERMINE IF THE EQUIPMENT HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS, AND IF THE EQUIPMENT CAN BE OPERATED IN COMPLIANCE WITH ALL RULES AND REGULATIONS OF THE AIR POLLUTION CONTROL DISTRICT.

PLEASE NOTIFY Mike Sewell AT (408) 647-9411 WHEN CONSTRUCTION OF EQUIPMENT IS COMPLETED.

IT IS THE APPLICANT'S RESPONSIBILITY TO COMPLY WITH ALL LAWS, ORDINANCES, AND REGULATIONS OF OTHER GOVERNMENTAL AGENCIES WHICH ARE APPLICABLE TO THE EQUIPMENT TO BE CONSTRUCTED.

THIS AUTHORITY TO CONSTRUCT WILL EXPIRE TWO YEARS FROM DATE SHOWN, OR EARLIER, IF ANY CHANGE OF OWNERSHIP OR LOCATION, OR MODIFICATION OCCURS.

AIR POLLUTION CONTROL OFFICER

BY

DATE: MAR - 1 1999

APCD 2 (REV 1/92)

THE EQUIPMENT FOR WHICH THIS AUTHORITY TO CONSTRUCT IS ISSUED MAY BE OPERATED ONLY WHEN IN COMPLIANCE WITH THE FOLLOWING CONDITIONS:

Conditions:

1. Upon installation of the equipment authorized by this Authority to Construct, Trical must notify the District and arrange for an inspection of the equipment during normal operation to verify compliance with District Rules and Regulations.

2. Annual process throughput shall be reported to the District, upon request, at the time of permit renewal.

3. Only the following materials shall be used in this fumigant packaging operation:

   chloropicrin
   methyl bromide

   Trical shall obtain District approval prior to packaging any other materials in this operation.

4. Packaging formulations of chloropicrin and methyl bromide shall only occur when the ventilation hood exhaust system is in full use.

5. Total volatile organic compound emissions from the facility shall not exceed 3,000 pounds per day.

6. No emissions shall constitute a public nuisance.

7. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three (3) minutes in any one (1) hour which is as dark or darker than Ringelmann 1 or equivalent 20% opacity.

8. Any representative of the Monterey Bay Unified Air Pollution Control District authorized by the Air Pollution Control Officer shall be permitted, pursuant to the authority contained in Section 41510 of the California Health and Safety Code:

   a) to enter upon the premises where the source is located or in which any records are required to be kept under the terms and conditions of this Authority to Construct;

   b) to have access to and copy any records required to be kept under the terms and conditions of this Authority to Construct;

c) to inspect any equipment, operation, or process described or required in this Authority to Construct; and,

d) to sample emissions from the source.

Note: Upon issuance Permit to Operate 9714 will replace Permit to Operate 5860A issued to Trical, Inc. on May 27, 1998.

****

Attachment 2
Trical, Inc. Authority to Construct 8703

MONTEREY BAY
Unified Air Pollution Control District
serving Monterey, San Benito, and Santa Cruz counties

AIR POLLUTION CONTROL OFFICER
Douglas Quetin

24580 Silver Cloud Court • Monterey, California 93940 • 408/647-9411 • FAX 408/647-8501

FEB 18 1997

Mr. Hank Maze
Chief Financial Officer
Trical, Inc.
P.O. Box 1327
Hollister, CA 95024

Subject: Authority to Construct 8703 - Telone Storage
Permit to Operate P-1463A - Paint Spray Facility

Dear Mr. Maze:

The District has completed its evaluation of your application for the addition of three telone storage tanks at your Bolsa facility. It was found that the equipment has the capability to comply with all applicable District rules.

During the review of the permit files for your facility, it was determined that the permit for your paint spray operation required updating to include the requirements of District Rule 434 (Metal Parts & Products). District Rule 434 is applicable to your facility due to the painting of the metal cylinders in your operation. Enclosed you will find a Compliance Tip sheet on Rule 434 which should help you understand the requirements of the rule.

Accordingly, I have enclosed Authority to Construct (ATC) 8703 authorizing the installation and temporary operation of the telone storage tanks and Permit to Operate (PTO) P-1463A authorizing the operation of the paint spray facility. **These permits must be posted or kept readily available at the operating premises.**

Please note the conditions which have been included on the permits. These conditions are necessary to insure that the equipment will operate in accordance with all applicable District Regulations. Condition number 1 on ATC 8703 is to ensure that the design of the carbon adsorption system will meet District requirements prior to installation. To help you meet the recordkeeping requirements of condtion 5 on PTO P-1463A, you may use the enclosed log form or you may develop your own recordkeeping form.

Permit renewal fees will be assessed annually on the anniversary date of the permits and will be based on reported equipment usage.

If you should have any questions, please feel free to contact me at the District office.

Sincerely,

Michael D. Sewell
Air Quality Engineer

encl: Authority to Construct 8703
Permit to Operate P-1463A
Daily VOC Log Form
Rule 434 Compliance Tip Sheet

MONTEREY BAY UNIFIED AIR POLLUTION CONTROL DISTRICT

AUTHORITY TO CONSTRUCT

MONTEREY, CALIFORNIA 93940 — TELEPHONE: (408) 647-9411

APPLICATION NUMBER

8703

AN **AUTHORITY TO CONSTRUCT** IS GRANTED AS OF FEB 18 1997

LEGAL OWNER OR OPERATOR: TRICAL, INC.

EQUIPMENT LOCATED AT: 8770 Highway 25
Hollister, California

EQUIPMENT DESCRIPTION AND CONDITIONS: THIS AUTHORITY TO CONSTRUCT IS ISSUED AND IS VALID FOR THIS EQUIPMENT ONLY WHILE IT IS IN THE CONFIGURATION SET FORTH IN THE FOLLOWING DESCRIPTION:

MODIFICATION TO FUMIGANT PACKAGING OPERATION:

The Addition Of Three (3) 35,000 Gallon Stainless Steel Telone Storage Tanks And The Associated Closed Loop Piping System, Pumps, Etc. To Unload Telone From Railcars And Tanker-Trucks And To Transfer Telone From These Three Storage Tanks To The Existing 10,000 Gallon Telone Working Tank Located At The Facility.

THE EQUIPMENT FOR WHICH THIS AUTHORITY TO CONSTRUCT IS ISSUED MAY BE OPERATED ONLY WHEN IN COMPLIANCE WITH THE FOLLOWING CONDITIONS:

Conditions:

1. Details of the carbon adsorption system, including but not limited to: make, model, design and layout of system, type and quantity of carbon, the calculated removal efficiency, the calculated pressure drop across the carbon, the emission stream contact time with the carbon, proposed changeout period for the carbon, etc. must be submitted to the District and receive District approval prior to installation.

THIS AUTHORITY TO CONSTRUCT IS NOT A PERMIT TO OPERATE!

APPROVAL OR DENIAL OF THE APPLICATION FOR PERMIT TO OPERATE THE ABOVE EQUIPMENT WILL BE MADE AFTER AN INSPECTION TO DETERMINE IF THE EQUIPMENT HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS, AND IF THE EQUIPMENT CAN BE OPERATED IN COMPLIANCE WITH ALL RULES AND REGULATIONS OF THE AIR POLLUTION CONTROL DISTRICT.

PLEASE NOTIFY Mike Sewell AT (408) 647-9411 WHEN CONSTRUCTION OF EQUIPMENT IS COMPLETED.

IT IS THE APPLICANT'S RESPONSIBILITY TO COMPLY WITH ALL LAWS, ORDINANCES, AND REGULATIONS OF OTHER GOVERNMENTAL AGENCIES WHICH ARE APPLICABLE TO THE EQUIPMENT TO BE CONSTRUCTED.

THIS AUTHORITY TO CONSTRUCT WILL EXPIRE TWO YEARS FROM DATE SHOWN, OR EARLIER, IF ANY CHANGE OF OWNERSHIP OR LOCATION, OR MODIFICATION OCCURS.

AIR POLLUTION CONTROL OFFICER

BY

DATE: FEB 18 1997

APCD 2 (REV. 1/92)

2. Packaging formulations of chloropicrin and telone shall not be authorized until such time that the carbon adsorption system has been installed and is in full operation.

3. Trical, Inc. shall notify the District upon installation of the equipment authorized under this Authority to Construct.

4. Only the following materials shall be used in this fumigant packaging operation:

   methyl bromide
   chloropicrin
   1,3 - dichloropropene (Telone)

   Trical, Inc. shall obtain District approval prior to packaging any other materials in this operation.

5. Total volatile organic compound emissions from the facility shall not exceed 150 pounds per day.

6. No emissions shall constitute a public nuisance.

7. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three (3) minutes in any one (1) hour which is as dark or darker than Ringelmann 1 or equivalent 20% opacity.

8. Any representative of the Monterey Bay Unified Air Pollution Control District authorized by the Air Pollution Control Officer shall be permitted, pursuant to the authority contained in Section 41510 of the California Health and Safety Code:

   a) to enter upon the premises where the source is located or in which any records are required to be kept under the terms and conditions of this Authority to Construct;

   b) to have access to and copy any records required to be kept under the terms and conditions of this Authority to Construct;

   c) to inspect any equipment, operation, or process described or required in this Authority to Construct; and,

   d) to sample emissions from the source.

****

Attachment 3
Facility Receiving, Storage and Packaging Flow Diagrams

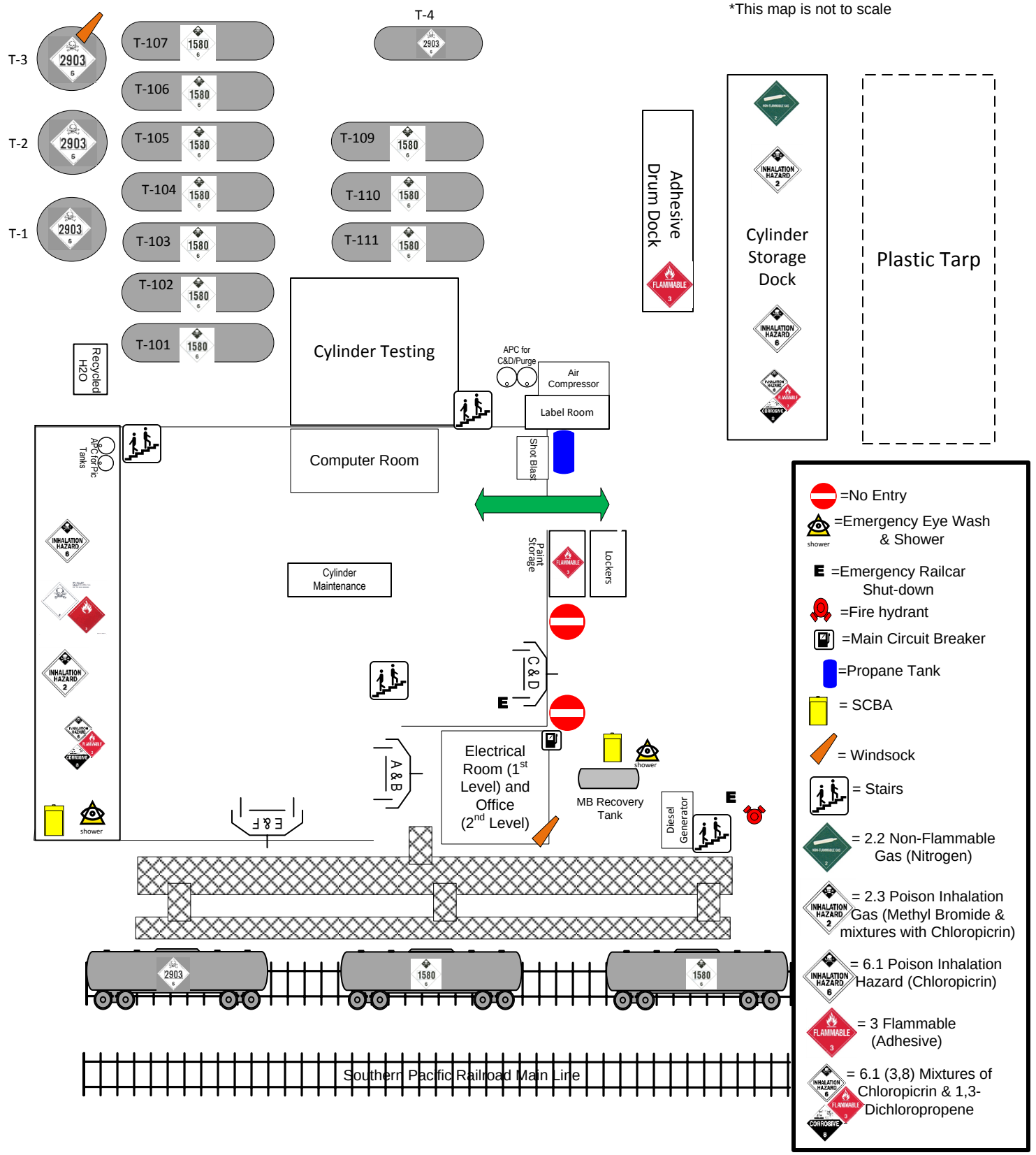
TRICAL, Incorporated
8770 Highway 25
Hollister, CA 95023

Filling Plant, Bulk Storage and Cylinder Storage (ZONE 1)
Rev 02/2018

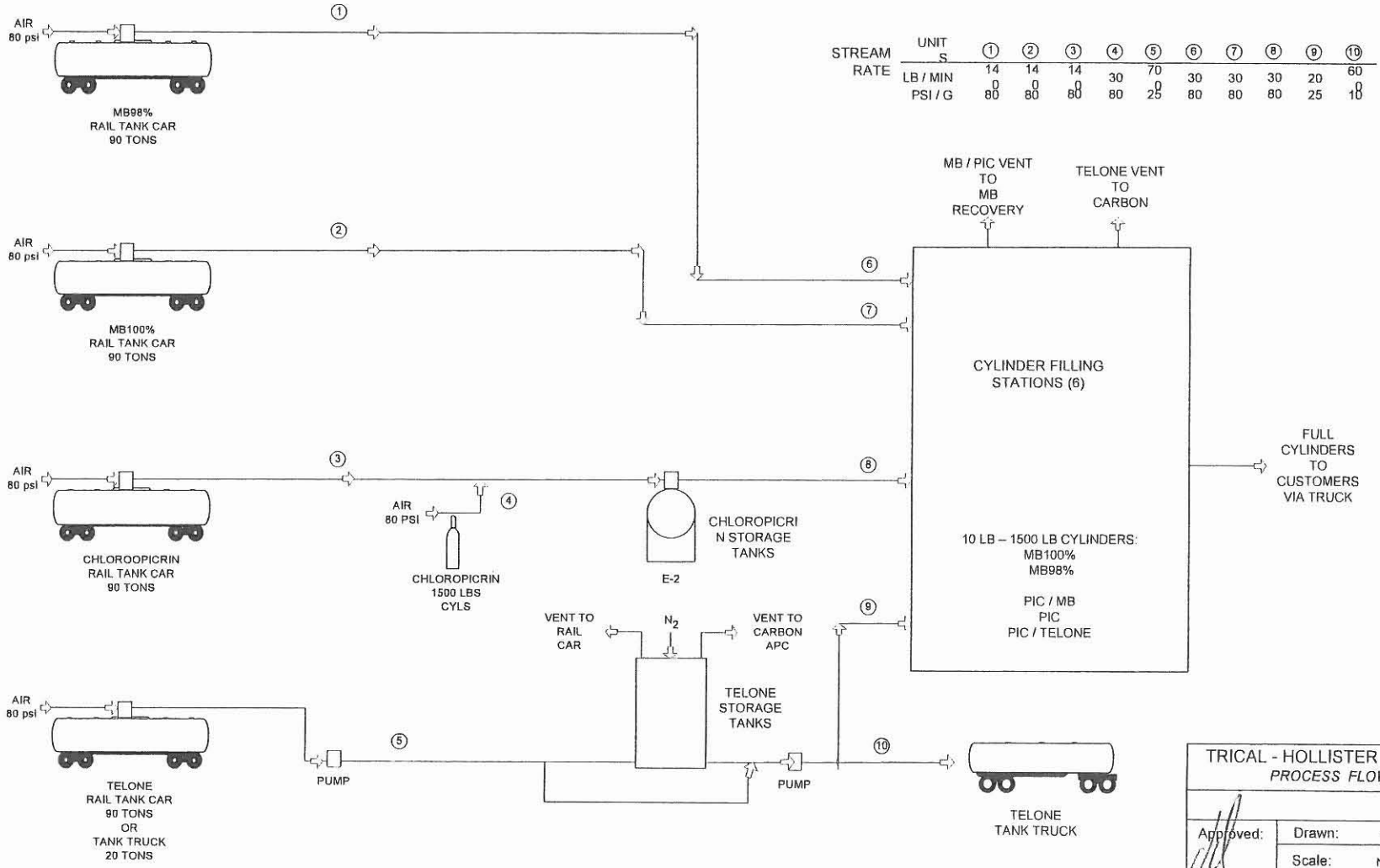
*This map is not to scale

T-101 thru T-111 = Chloropicrin UN 1580 ERG Page 154

T-1 thru T-4 = 1,3-Dichloropropene UN 2903 ERG Page 131



TRICAL, INC.
HOLLISTER FILLING PLANT
PROCESS FLOW DIAGRAM



STREAM RATE	UNITS	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
	LB / MIN	14	14	14	30	70	30	30	30	20	60
		0	0	0		0					0
	PSI / G	80	80	80	80	25	80	80	80	25	10

TRICAL - HOLLISTER FILLING PLANT *PROCESS FLOW DIAGRAM*			
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Approved:	Drawn: JPI		Dwg:
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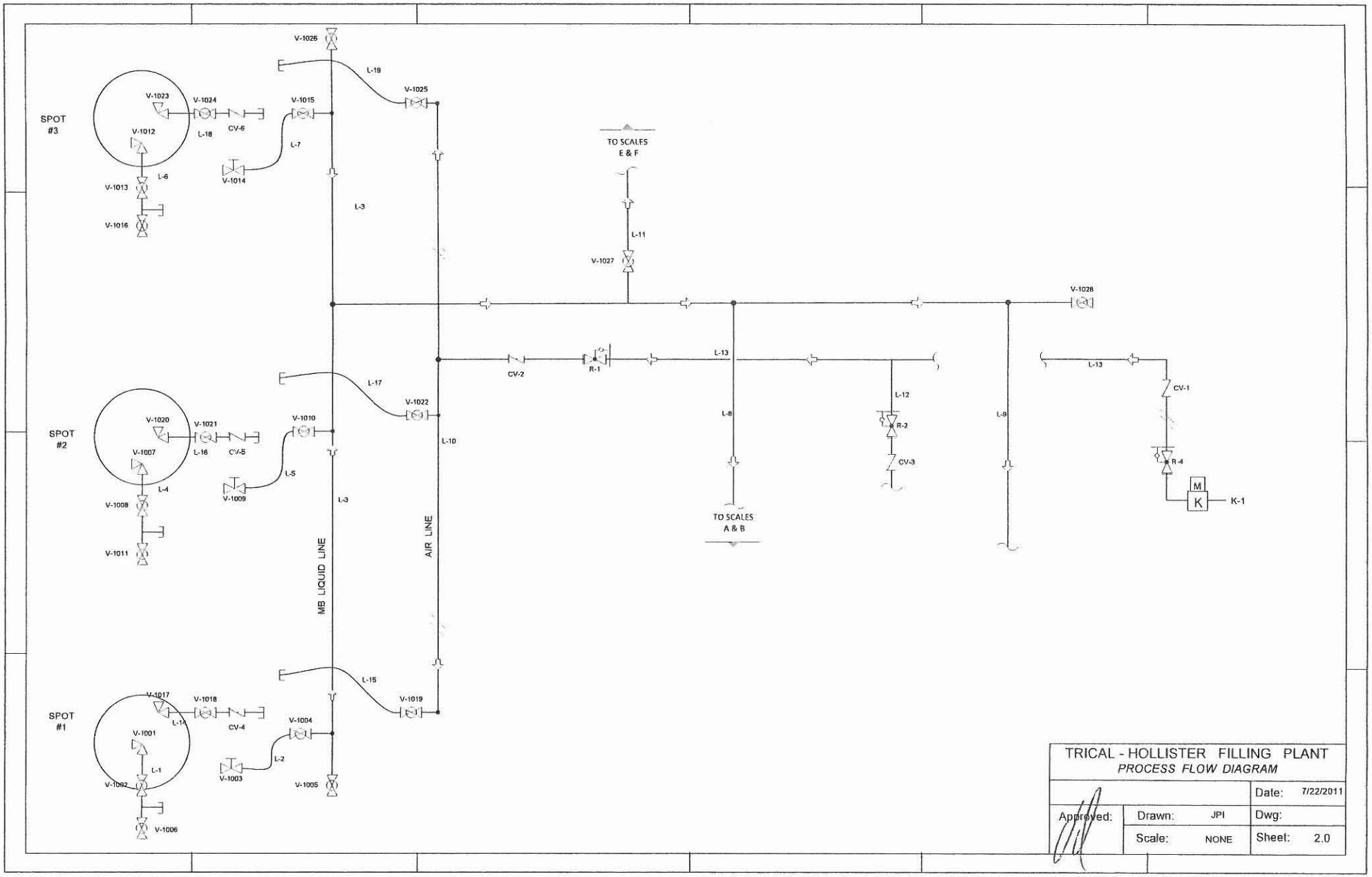

TRICAL - HOLLISTER FILLING PLANT

PROCESS FLOW DIAGRAM

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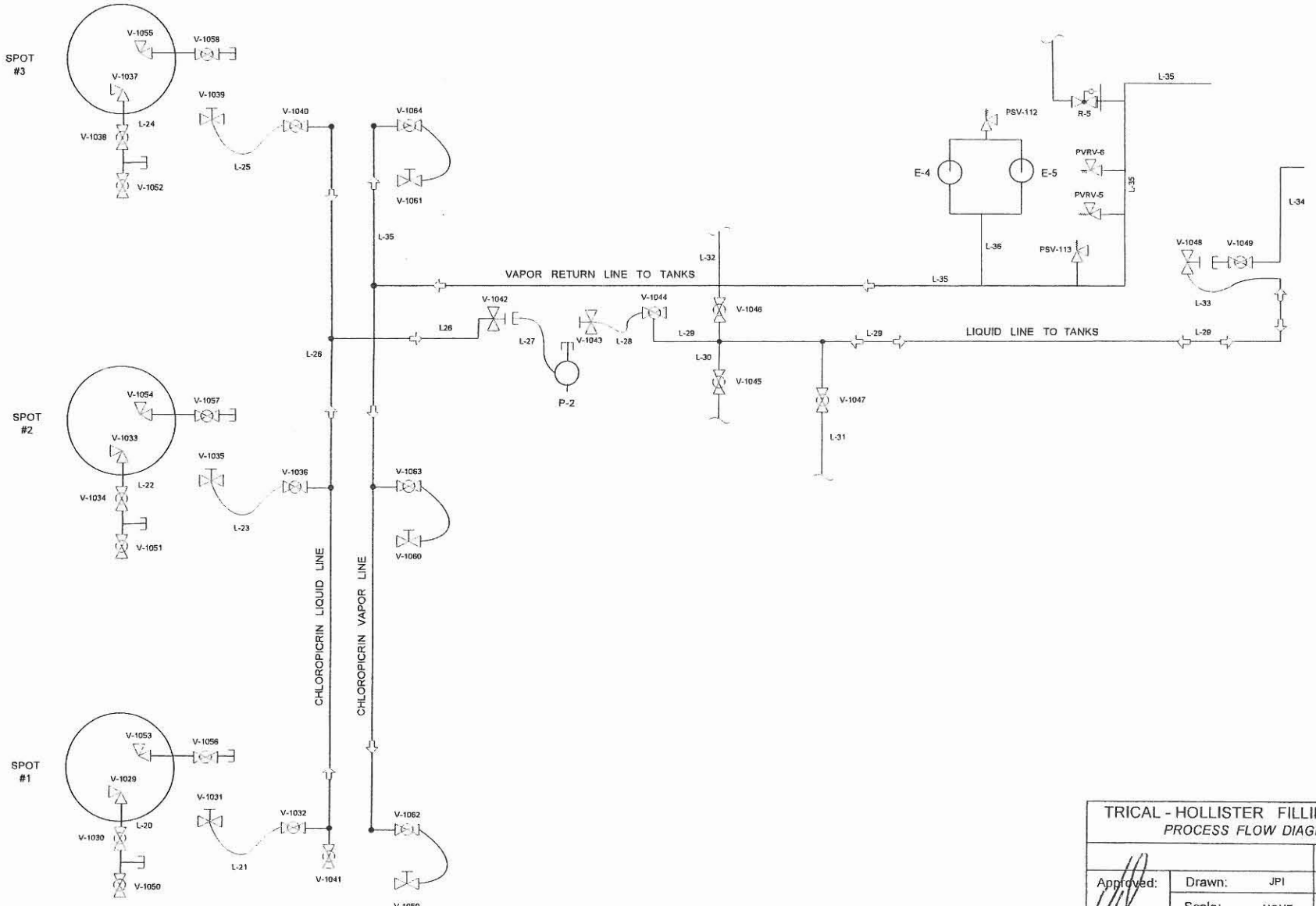
SPOT #3
SPOT #2
SPOT #1
V-1055
V-1058
V-1037
V-1038
L-24
V-1052
V-1039
V-1040
L-25
V-1064
V-1061
L-35
V-1054
V-1057
V-1033
V-1034
L-22
V-1051
V-1035
V-1036
L-23
V-1063
V-1060
V-1053
V-1056
V-1029
V-1030
L-20
V-1050
V-1031
V-1032
L-21
V-1041
V-1062
V-1059
CHLOROPICRIN LIQUID LINE
CHLOROPICRIN VAPOR LINE
L-26
L26
V-1042
L-27
V-1043
P-2
L-28
V-1044
L-32
VAPOR RETURN LINE TO TANKS
L-35
V-1046
L-29
L-30
V-1045
V-1047
L-31
L-29
LIQUID LINE TO TANKS
L-29
PSV-112
R-5
L-35
E-4
E-5
PVRV-6
PVRV-5
L-35
L-36
PSV-113
V-1048
V-1049
L-34
L-33
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PROCESS FLOW DIAGRAM
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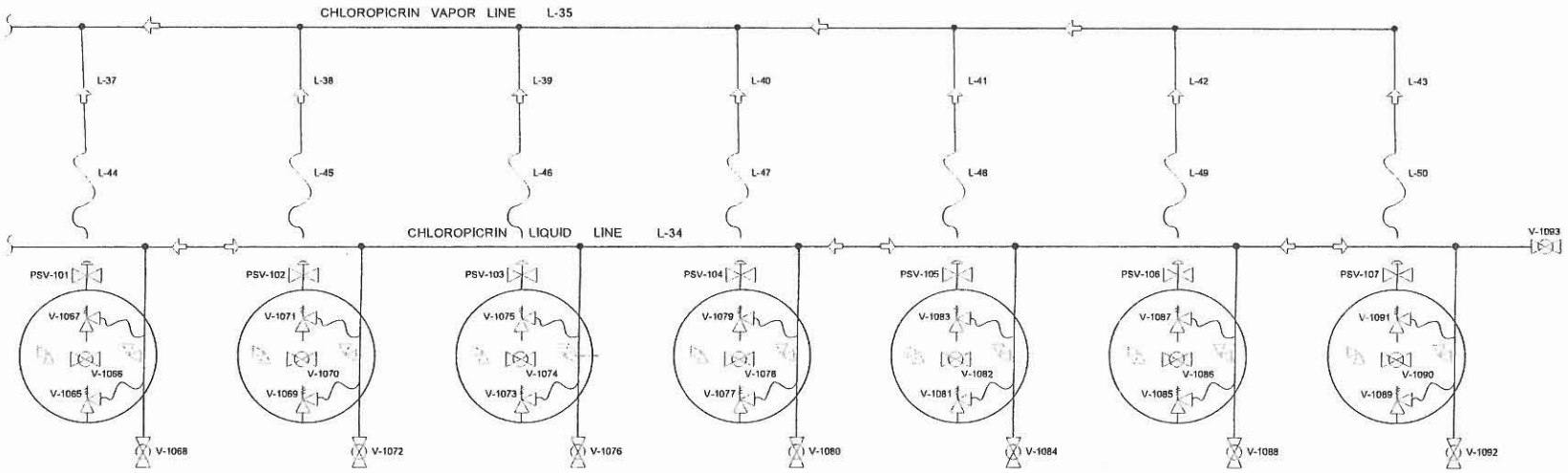

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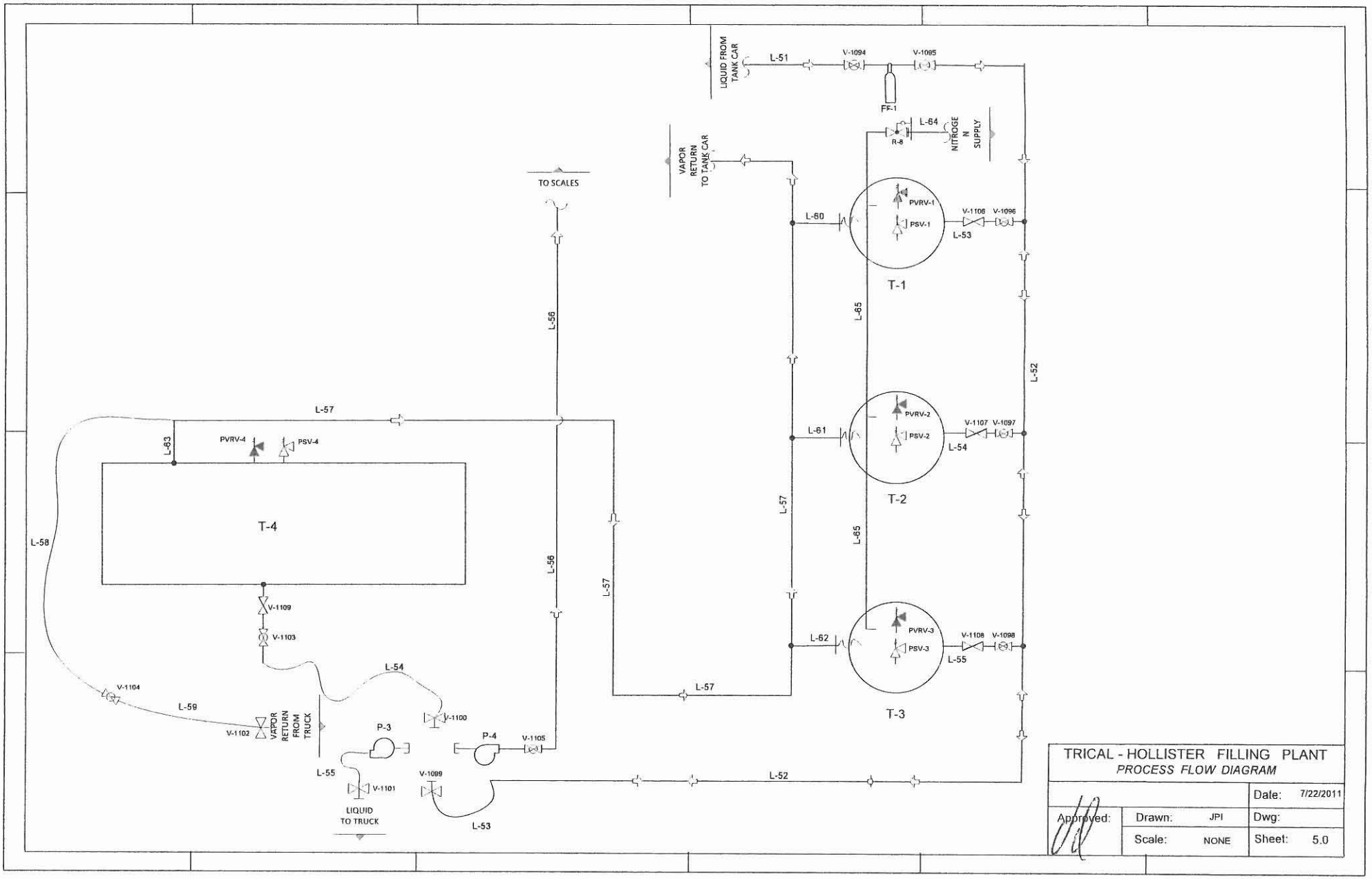
LIQUID FROM TANK CAR
L-51
V-1094
V-1095
FF-1
L-64
R-8
NITROGEN SUPPLY
VAPOR RETURN TO TANK CAR
TO SCALES
L-60
PVRV-1
PSV-1
V-1106
V-1096
L-53
T-1
L-56
L-65
L-52
L-61
PVRV-2
PSV-2
V-1107
V-1097
L-54
T-2
L-57
L-65
L-62
PVRV-3
PSV-3
V-1108
V-1098
L-55
T-3
L-57
L-57
L-83
PVRV-4
PSV-4
T-4
L-58
V-1109
V-1103
L-54
V-1104
L-59
V-1102
VAPOR RETURN FROM TRUCK
V-1100
P-3
P-4
V-1105
L-55
V-1101
V-1099
LIQUID TO TRUCK
L-53
L-52
TRICAL - HOLLISTER FILLING PLANT
PROCESS FLOW DIAGRAM
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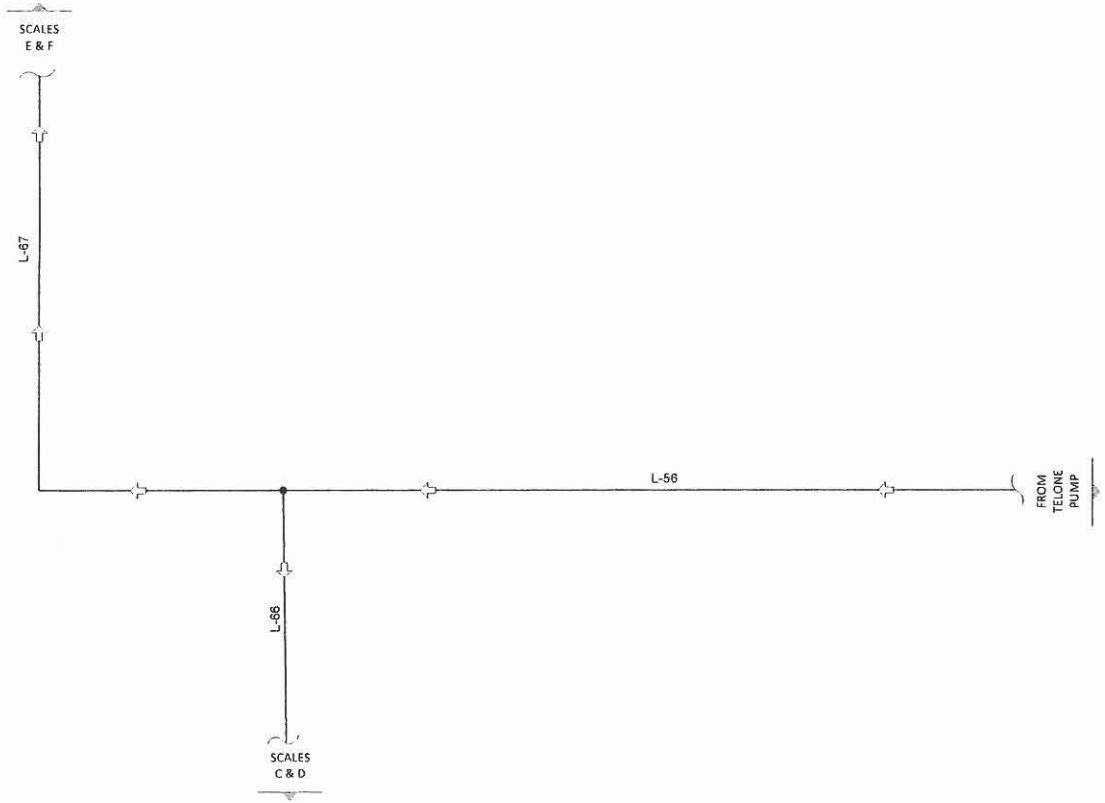

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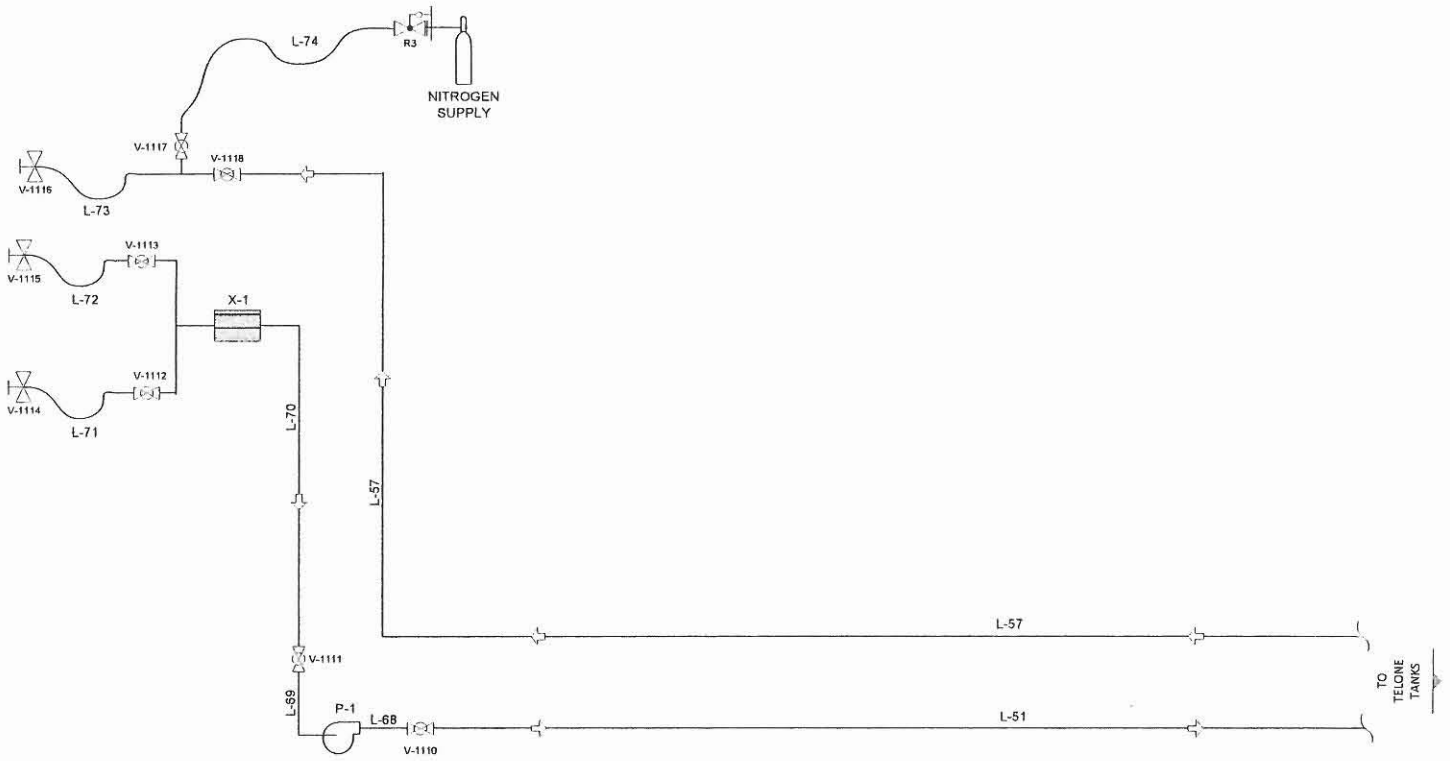

TRICAL - HOLLISTER FILLING PLANT

PROCESS FLOW DIAGRAM

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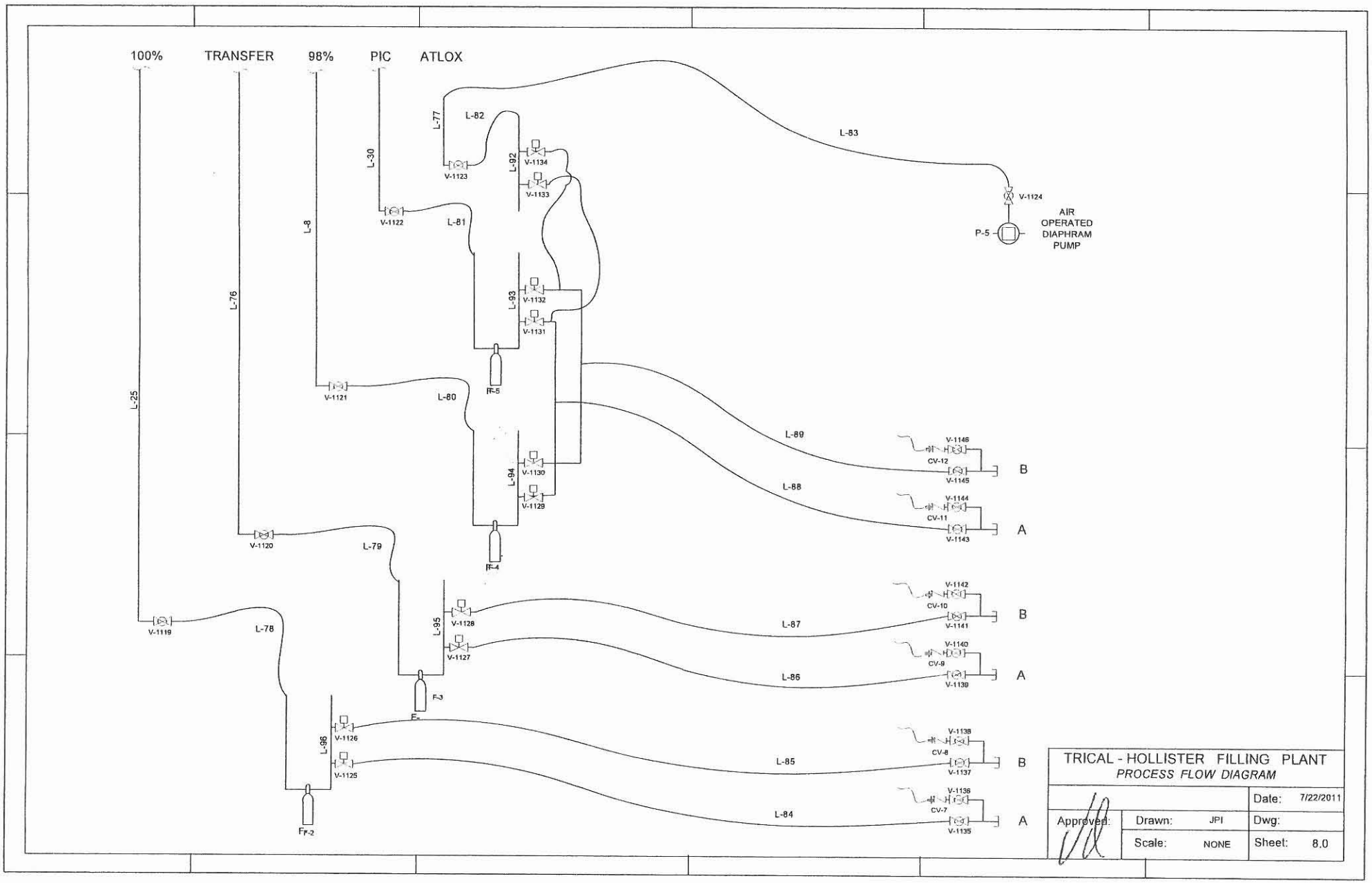

TRICAL - HOLLISTER FILLING PLANT

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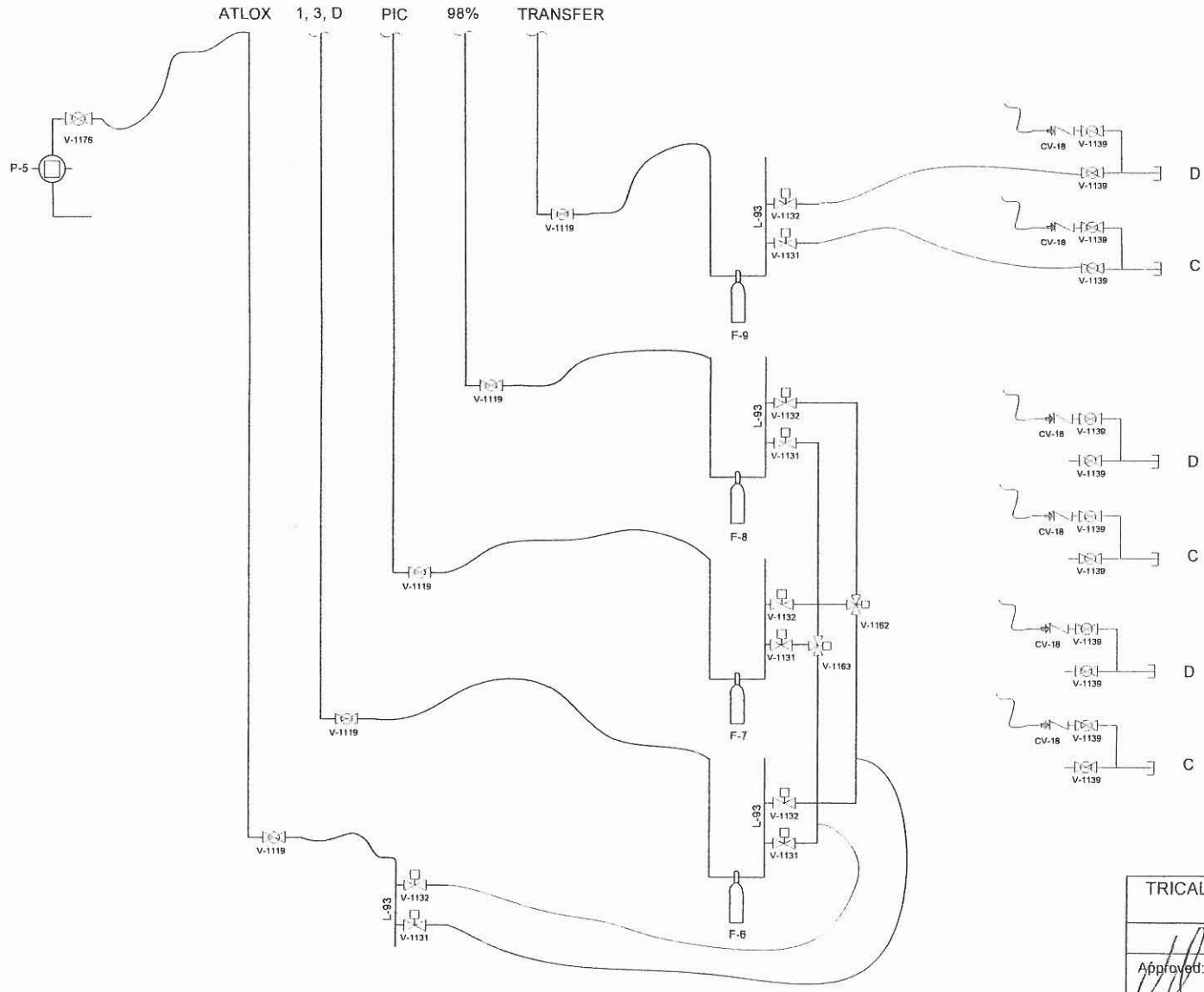

TRICAL - HOLLISTER FILLING PLANT
PROCESS FLOW DIAGRAM

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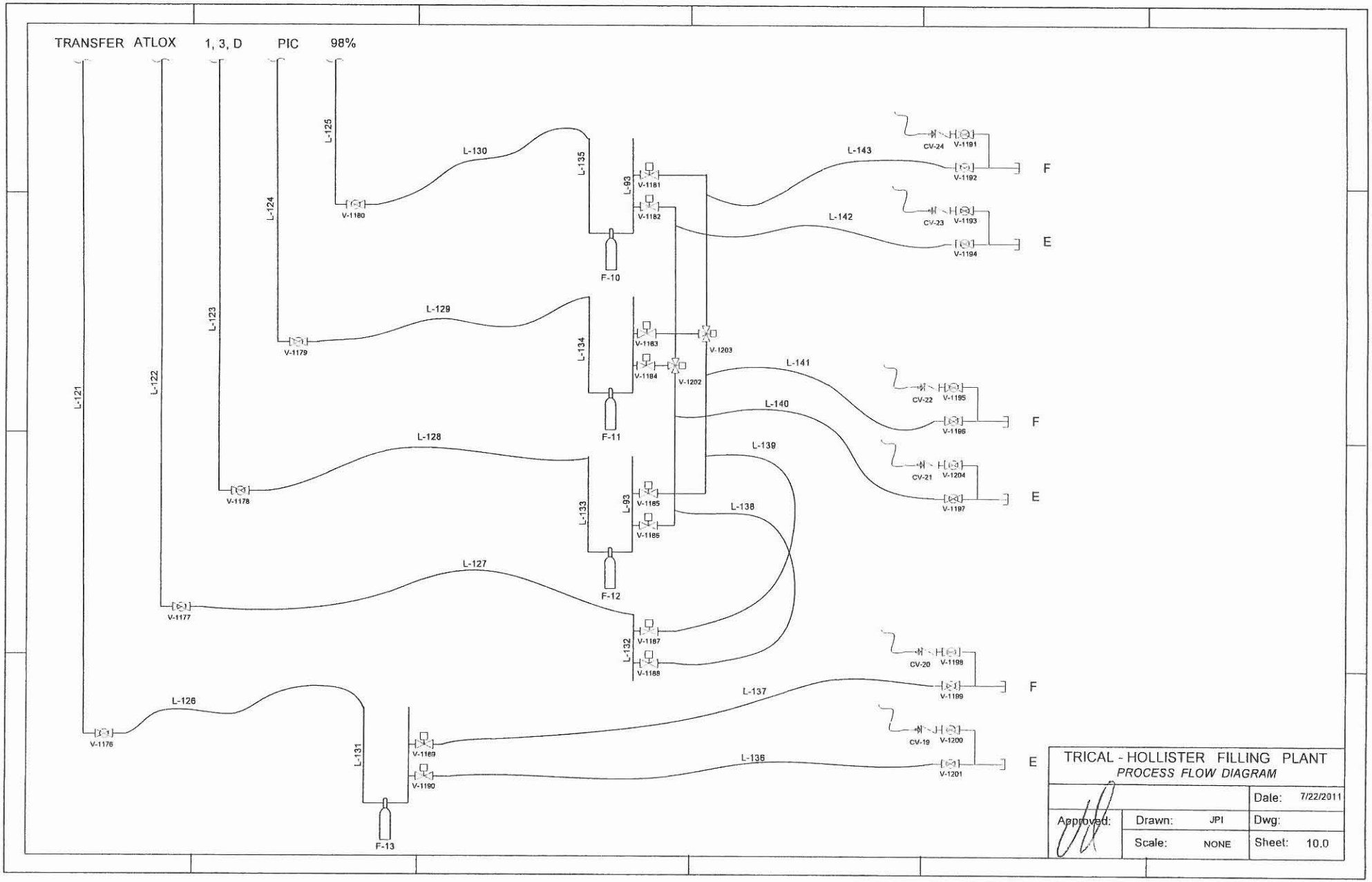

TRANSFER ATLOX
1, 3, D
PIC
98%
L-121
L-122
L-123
L-124
L-125
L-126
L-127
L-128
L-129
L-130
L-131
L-132
L-133
L-134
L-135
L-136
L-137
L-138
L-139
L-140
L-141
L-142
L-143
L-93
V-1176
V-1177
V-1178
V-1179
V-1180
V-1181
V-1182
V-1183
V-1184
V-1185
V-1186
V-1187
V-1188
V-1189
V-1190
V-1191
V-1192
V-1193
V-1194
V-1195
V-1196
V-1197
V-1198
V-1199
V-1200
V-1201
V-1202
V-1203
V-1204
CV-19
CV-20
CV-21
CV-22
CV-23
CV-24
F-10
F-11
F-12
F-13
F
E
F
E
F
E
TRICAL - HOLLISTER FILLING PLANT
PROCESS FLOW DIAGRAM
Date: 7/22/2011
Approved:
Drawn: JPI
Dwg:
Scale: NONE
Sheet: 10.0

DIAPHRAGM PUMP

REGULATOR

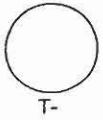
CENTRIFUGAL PUMP

PNEUMATIC BALL VALVE

DIAPHRAGM PUMP

CYLINDER

COMPRESSOR



TANK NUMBER

GATE VALVE

BALL VALVE

DRY CHAM VALVE

PRESSURE VACUUM RELIEF VALVE

CHECK VALVE

ANGLE VALVE

PRESSURE SAFETY VALVE

PRESSURE RELIEF VALVE

THREE WAY SOLINOID VALVE

TRICAL - HOLLISTER FILLING PLANT *PROCESS FLOW DIAGRAM*		
DOCUMENT STENCIL		Date: 01/23/2012
Approved:	Drawn:	Dwg:
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Attachment 4
Trical, Inc. 1995 AB2588 Toxic Emissions Inventory Report

Trical, Inc.
AB 2588 Toxic Emissions Inventory Report
Reporting Year 1995
Submittal Data

Table of Contents

Section 2: Introduction

The subject facility, located at 8770 Highway 25, Hollister, CA is company headquarters for Trical, Inc., Soil Chemicals Corporation, and Bolsa Research Associates.

Trical, Inc. is an agricultural service company specializing in the application of pre-plant soil fumigants for California growers. The fumigants applied are various mixtures of methyl bromide and chloropicrin. Also, during 1995, Trical received and shipped in bulk 60,000 gallons of 1,3-Dichloropropene (Telone).

Soil Chemicals Corporation is a distributor of methyl bromide/chloropicrin mixtures to licensed pest control operators for use as a structural fumigant and a distributor of methyl bromide to commodity fumigators.

Bolsa Research Associates is a certified analytical laboratory specializing in pesticide residue screens and air, water and soil monitoring.

The entire complex consists of offices, a shop, laboratory, storage and a filling station. Trical operates the filling station for the formulation of methyl bromide/chloropicrin mixtures. Methyl bromide is received in bulk in tank cars and chloropicrin is received in bulk in tank cars and cylinders of 350 lb or 1500 lb capacity or are transferred in bulk into storage tanks for later formulation.

There is a paint spray booth which may emit some particulate lead and chromium.

The filling station also has a cylinder cleaner which uses metal shot blasting to remove old paint from the exterior of cylinders. The process may emit a certain amount of particulate lead and chromium as a general area source.

The facility is located on the west side of Highway 25, three miles south of Highway 101, about a mile south of Bolsa Road and 2 miles north of Shore Road. The facility covers an area of about 7 acres, the filling station covers 5,220 square feet.

The nearest offsite receptor is a small agricultural related business located to the Northwest at a distance of 0.45 miles as measured by GPS unit.

$$(0.45 \text{ miles})\left(\frac{5280 \text{ ft}}{\text{mile}}\right) = 2376 \text{ ft}$$

$$(0.45 \text{ miles})\left(\frac{1609 \text{ m}}{\text{mile}}\right) = 724 \text{ m}$$

Receptor Proximity Factor* = 0.011

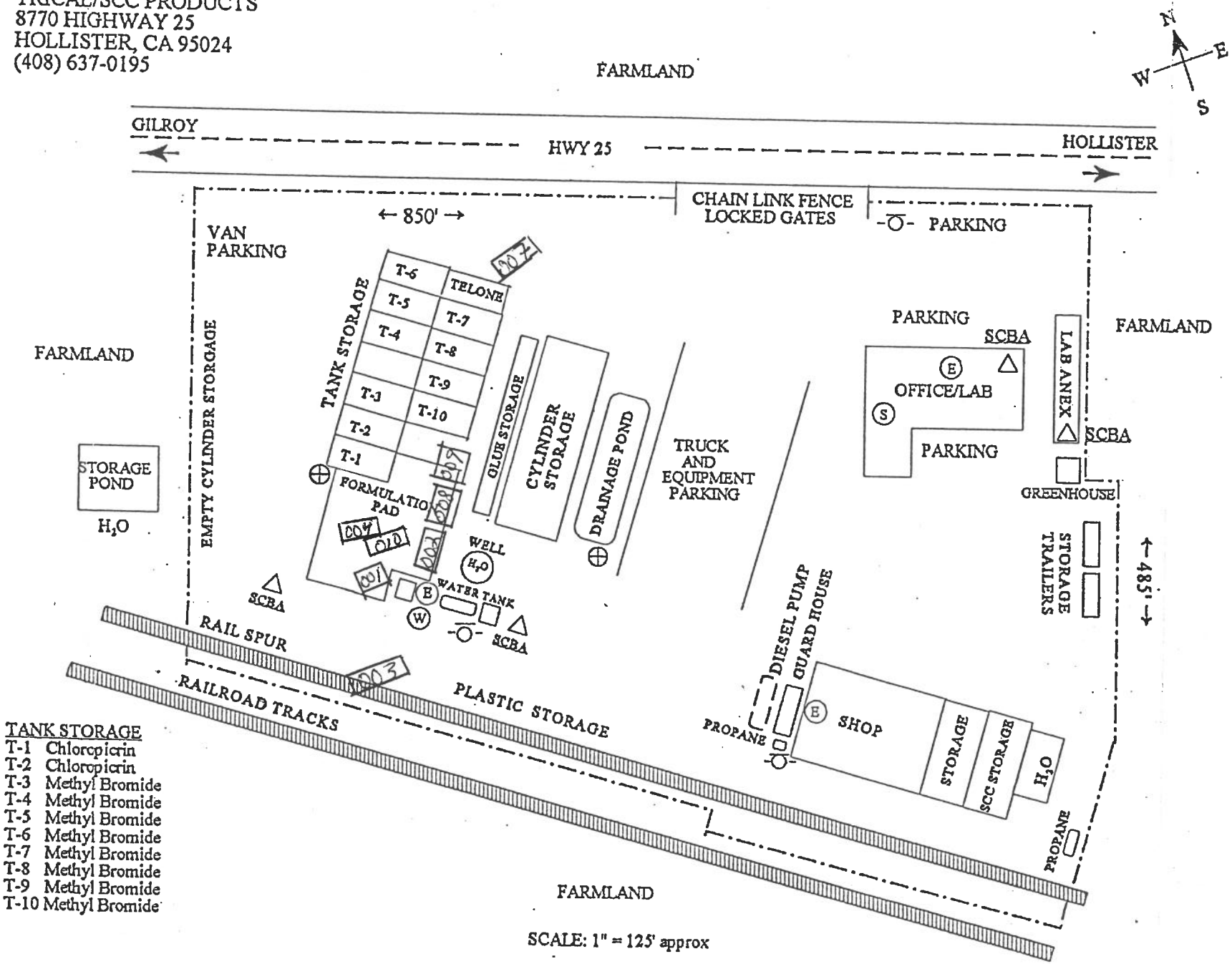
Release Ht = 32 ft. $\left(0.305 \frac{\text{m}}{\text{ft}}\right)$ = 9.76 m

Dispersion Adjustment factor* = 60

* Appendix E & F, Prioritization Guidelines

SECTION 3: FACILITY DIAGRAM AND PLOT PLAN

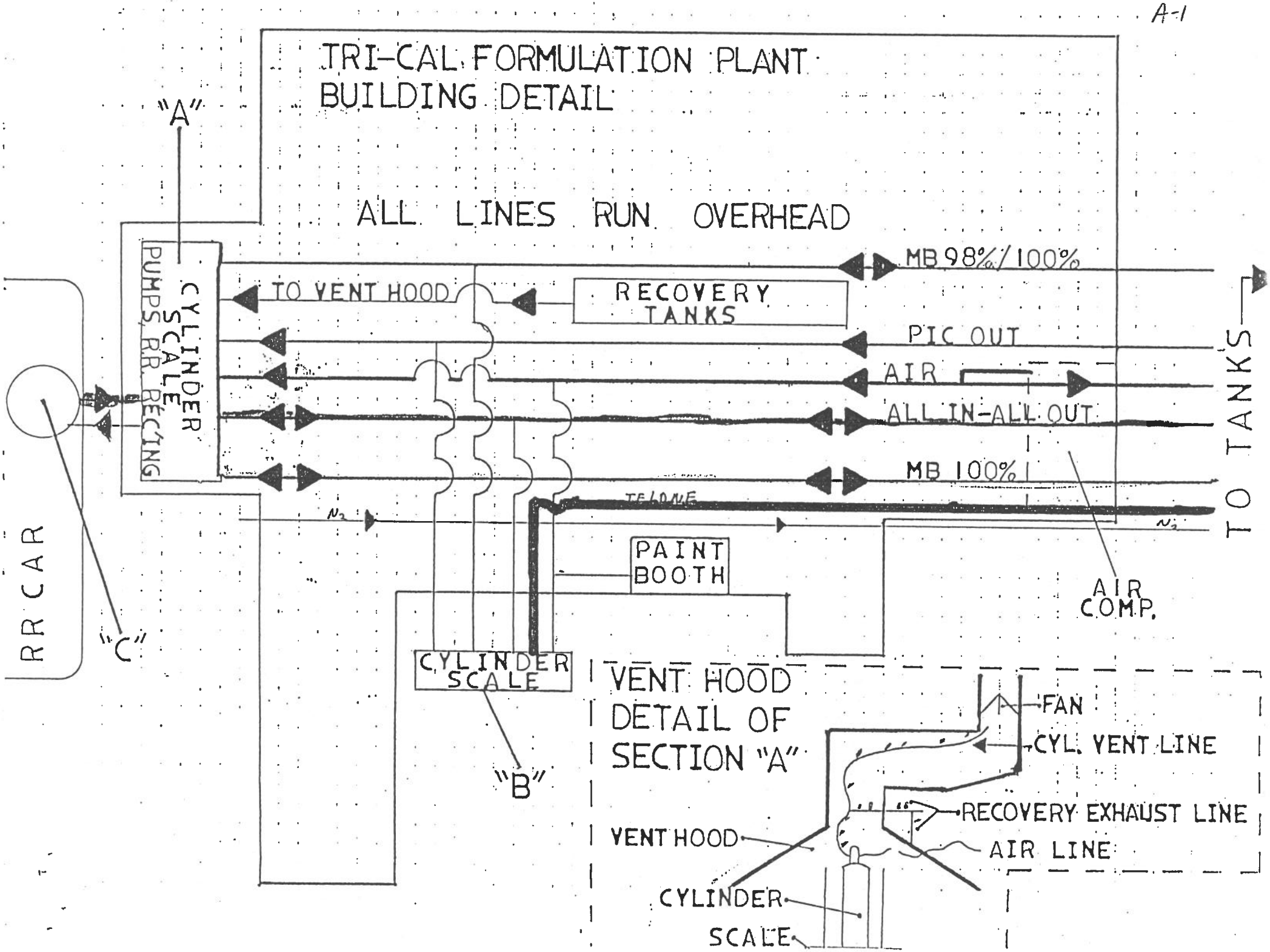
TRICAL/SCC PRODUCTS
8770 HIGHWAY 25
HOLLISTER, CA 95024
(408) 637-0195



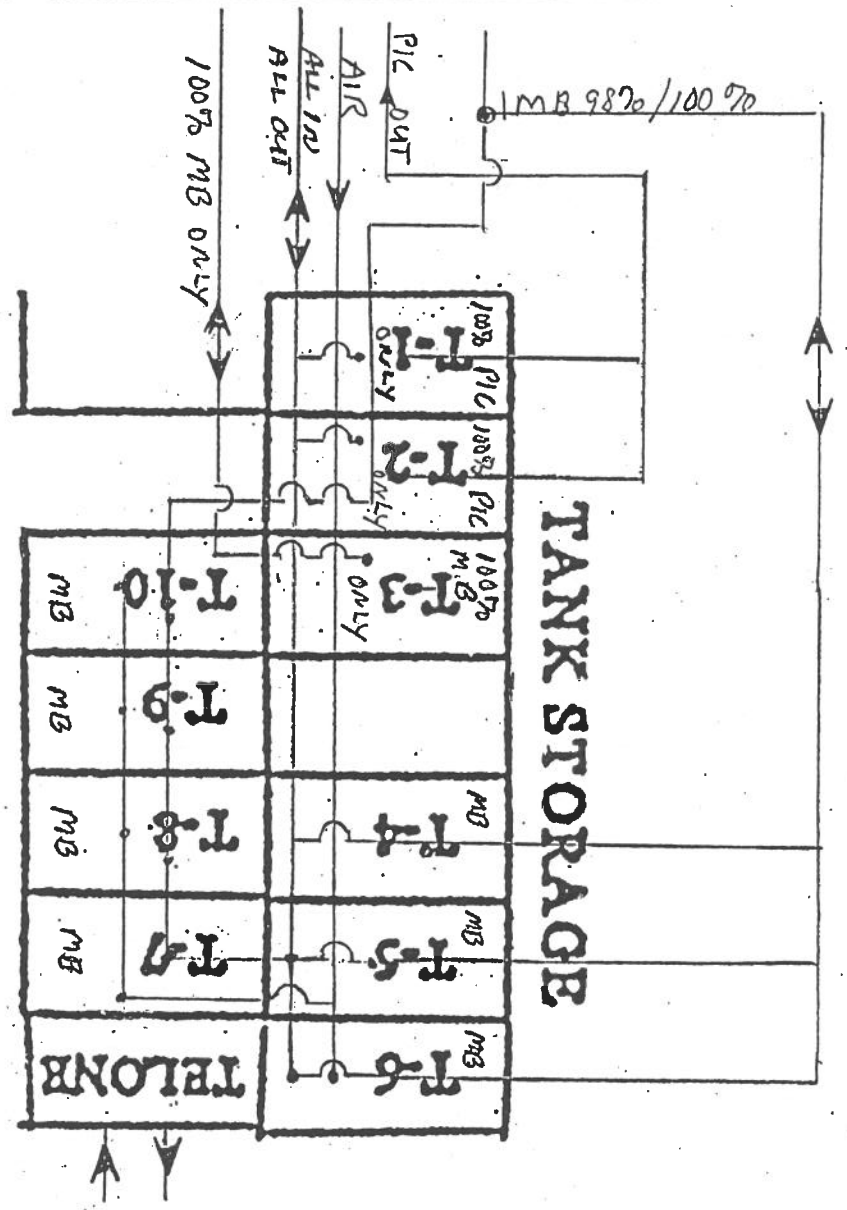
TANK STORAGE
T-1 Chloropicrin
T-2 Chloropicrin
T-3 Methyl Bromide
T-4 Methyl Bromide
T-5 Methyl Bromide
T-6 Methyl Bromide
T-7 Methyl Bromide
T-8 Methyl Bromide
T-9 Methyl Bromide
T-10 Methyl Bromide

TRI-CAL FORMULATION PLANT BUILDING DETAIL

ALL LINES RUN OVERHEAD



TO FILLING STATION,
R.R. TANKCARS,
AIR COMPRESSOR



Section 3 Cont'd.
Estimation and Aggregation of Small Devices

Trical Formulation Plant
Hollister, CA

Page A1:

SECTION "A":
- 7 - manifolds
- 2 - scales
- 2 - electric gear pumps
- 1 - fan-driven vent hood
- 1 - vent stack - Point Source

MB 100% line:
- 7 - fittings
- 4 - 1" ball valves
- 1 - 3/8" ball valves
- 3 - braided flex hoses
- 1 - filter

ALL IN / ALL OUT line:
- 5 - fittings
- 2 - 1" ball valves
- 1 - 3/8" ball valves
- 2 - braided flex hoses

PIC OUT line:
- 14 - fittings
- 5 - 1" ball valves
- 4 - 3/8" ball valves
- 2 - filters

MB 98% / 100% line:
- 12 - fittings
- 6 - 1" ball valves
- 2 - 3/8" ball valves
- 2 - braided flex hoses
- 2 - filters

AIR line:

- 4 - fittings
- 2 - 3/8" ball valves

RR CAR IN LINE AND THE 2 SENDING PUMPS:

- 38 - fittings
- 12 - 1" ball valves
- 3 - 3/8" ball valves
- 8 - braided flex hoses
- 2 - filters
- 1 - sight glass
- 1 - gallon meter

SECTION "B":

- 12 - fittings
- 2 - 3/4" ball valves
- 2 - 3/8" ball valves
- 2 - braided flex hoses
- 2 - manifolds
- 1 - scale
- 2 - electric control valves

SECTION "C"

- 3 - 1" screw valves
- 3 - 1" ball valves
- 2 - 3/8" ball valves
- 2 - manifolds

VAPOR RECOVERY SYSTEM:

- 36 - fittings
- 13 - 3/8" ball valves
- 4 - braided flex hoses
- 1 - filter
- 2 - manifolds
- 2 - pressure gauges
- 2 - recovery tanks

OVERHEAD MB 98% / 100% line:

- 16 - fittings
- 1 - 3/4" ball valve
- 1 - 3/8" ball valve
- 1 - braided flex hose

OVERHEAD ALL IN / ALL OUT line:

17 - fittings
1 - 3/8" ball valve
1 - braided flex hose

OVERHEAD MB 100% line:

6 - fittings
1 - ½" ball valve

OVERHEAD PIC OUT line:

15 - fittings
1 - 3/4" ball valve
1 - 3/8" ball valve
1 - braided flex hose

OVERHEAD AIR line:

29 - fittings
5 - 3/8" ball valves

MB 98% / 1005 line:

31 - fittings
9 - 1 1/4" ball valves
2 - 3/8" ball valves
2 - braided flex hoses

ALL IN / OUT line:

27 - fittings
8 - 3/4" ball valves
1 - 3/8" ball valves

AIR line:

62 - fittings
9 - 3/8" ball valves

MB 100% line:

10 - fittings
1 - 3/4" ball valves
1 - 3/8" ball valves

PIC OUT line:

14 - fittings
3 - 1" ball valves
1 - 3/8" ball valves

Page A2:

TOP OF TANKS (STANDARD, EACH STORAGE TANK):

- 2 - fittings
- 4 - 1" screw valves
- 1 - 3/4" ball valves
- 1 - 3/4" automatic pressure release valve
- 1 - pressure gauge

TELONE STORAGE TANK:

- 8 - valves
- 2 - filters
- 1 - pump

Section 4: Detailed Facility Information

I. Facility Equipment and Processes:

A. Methyl Bromide / Chloropicrin Filling Station
Permit #5860
1. Two Filling Outlets
2. Ventilation Hood, 3/4 H.P. Blower, 28' Vent Stack
3. Hoses, Attachments, Piping, Air Compressor, Storage Tanks, Railcars on Siding, Vapor Recovery Tank

B. Cylinder Painting Scrubber
Permit #5862
1. Viking Shot Blaster
2. Baghouse w/Filters, Blower and 55 gallon Drum to collect Particulates
3. Air Discharge to Atmosphere

II. Possible Emission Points

A. Filling Station Fugitive Emission Points, Pumps, Fittings, Valves, Filters
1. Section A I.D. #001
2. Section B I.D. #002
3. Section C I.D. #003
4. Vapor Recovery System #004
5. Overhead System #005
6. Top of Tanks #006
7. Telone I.D. #007

B. Paint Spray Booth #008
C. Paint Scrubber #009
D. Vent Stack #010

III. List of AB 2588 Compounds to be Quantified and Reported

1. Methyl Bromide
2. Chloropicrin
3. Telone
4. Lead
5. Chromium

Section 4

TABLE I

LIST OF EMISSION SOURCES AT FACILITY

Source	Device ID	Stack ID	Fuel	Emission Controls	Chemical of Interest
Section A Fugitive Emissions	001				Methyl Bromide Chloropicrin
Section B Fugitive Emissions	002				Methyl Bromide Telone, Chloropicrin
Section C Fugitive Emissions	003				Methyl Bromide Chloropicrin
Vapor Recovery Sys Fugitive Emissions	004				Methyl Bromide Chloropicrin
Overhead System Fugitive Emissions	005				Methyl Bromide Chloropicrin
Top of Tanks Fugitive Emissions	006				Methyl Bromide Chloropicrin
Telone Storage Fugitive Emissions	007				Telone
Pint Spray Booth	008				Lead, Chromium
Paint Scrubber Area Source	009				Lead, Chromium
Vent Stack Point Source	010	010			Methyl Bromide Chloropicrin

Section 5: Emission Quantification and Rationale

The facility formulates mixtures of methyl bromide and chloropicrin through a system of pipes, valves, filters and pumps. The fugitive emissions are calculated according to published EPA emission factors for light liquids (vapor pressure greater than 0.1 PSIA at 100°F). Telone is received and shipped in bulk from tanker trucks to a 10,000 gallon storage tank.

The annual emissions are calculated for each system device. Each device is a group of components which operate together and for purposes of fugitive emissions can be considered as one device.

There are also point source emissions of methyl bromide and chloropicrin. The emissions occur during the three separate activities of the facility operation and escape through one common vent stack. First, steel cylinders of about 28 gal. capacity are filled with methyl bromide/chloropicrin mixture. The cylinder displacement vapors from this procedure are vented through a vertical stack. When the cylinders are returned from the field, they can contain a small amount (1-2 lbs.) of fumigant. The cylinders are opened and the internal vapor pressure and liquid is allowed to vent into a scavenger tank. This tank is vented to the vertical stack to allow any vapor pressure build up in the scavenger tank to escape. The third procedure which results in stack emissions is the transfer from rail tank cars to tank storage. This results in displacement vapors from the storage tanks to the vent stack. For purposes of this report, these three types of point source emissions through a common stack will be summarized under device 010.

There is presumed to be no point source emissions during Telone loading/unloading. The system is closed loop operated by a transfer pump. Fugitive emissions are calculated for this operation.

To estimate methyl bromide point source emissions it was decided not to use engineering data and equations which were based upon assumptions of what was happening to methyl bromide during the three activities at the facility. Vapor/liquid phase changes and pressure variations throughout the processes result in thermodynamically complicated situations. Instead, actual measurements of methyl bromide concentrations in the vent stack vapors were made using a gas chromatograph calibrated to a known methyl bromide standard. A calibrated flow meter was used to measure volumes of vapor emitted over measured time intervals or during measured quantity transfers.

In all cases it was assumed and proved to be correct that vent stack vapors would contain air, since dried air is used to push methyl bromide from storage tanks into cylinders and in the field into cylinders to push fumigant into the soil. Air was usually over half the exit stream vapors.

In the case of cylinder filling, vapors were extracted from the displacement stream using glass syringes through a rubber septum and plastic tubing tee'd into the exit line. During the filling of the standard 360 lbs. of fumigant into a cylinder, vapor samples were taken at 60, 120, 180, 240, 300 and 360 lb. intervals. Concentrations of MB in the exit stream were measured on the gas chromatograph and plotted on a curve versus the pounds filled. A flow meter was attached to the exit vapor line to measure total volume flow. The average MB concentration in the vapor was figured from the plotted curve, and the volume of displacement vapor measured by the flow meter

was corrected for STP.

The amount of methyl bromide emitted can be calculated from the following formula:

$M = 94.94VC/22.4(453.6)$

where

M = Weight of MB in pounds

V = Volume of displacement vapors in liters

C = Molar percent of MB in the vapor

94.94 = molar weight in grams of MB

22.4 = liters per mole at STP

453.6 = grams per pound

Measurements were made for four different formulations of MB/chloropicrin: 99/1, 80/20, 67/33, and 57/43. These are the percentage of methyl bromide/chloropicrin in the formulated mixture. Next it was determined how many cylinders of each mixture were formulated. For each mixture the number of cylinders formulated, N, times the weight of methyl bromide in the displacement stream, M, equals the annual total emitted, or $T_{MB} = NM$.

The NM's for other mixtures which are formulated at the facility were estimated by assigning C values of one of the four mixtures to which their formula percentages were closest. For example, 75/25 was assigned the C value of 80/20. 50/50 was assigned the C value of 57/43.

Total cylinders for all the mixtures were calculated for 1995 and the totals for methyl bromide for cylinder filling for 1995 are shown under device #010.

Calculate Cylinder Totals

Mixture 99/1 (99% Methyl Bromide, 1% Chloropicrin)

Displacement Vapor Volume 358.2L

Mole Fraction MB 0.425

lbs. MB per cylinder = 94.94 x 358.2 x 0.425/22.4 x 453.6 = 1.42 lbs.

Use this amount for mixture 100%, 99.5%, 99% and 98%

NM = 8851x1.42 = 12,568 MB

Mixture 80/20

Displacement Volume 242.7L

Mole Fraction MB .190

lbs. MB per cylinder = 94.94 x 242.7 x .190/22.4 x 453.6 = .431 lbs.

Use this amount for mixture 80/20 and 75/25

NM = 5186 x .431 = 2,235 lbs. MB

Mixture 67/33

Displacement Volume 195.9L

Mole Fraction MB .191

lbs. MB per cylinder = 94.94 x 195.9 x .191/22.4 x 453.6 = .350 lbs.

NM = 7,252 x .350 = 2,538 lbs. MB

Mixture 57/43

Displacement Volume = 206.5L

Mole Fraction MB = .110

lbs. MB per cylinder = 94.94 x 206.5 x .110/22.4 x 453.6 = .212 lbs.

Use this amount for mixture 57/43, 50/50, and 45/45

NM = 3,075 x .212 = 652 lbs. MB

Total lbs. Methyl Bromide Point Source Emissions for Cylinder Filling, 1995 17,993 lbs

The venting of cylinders returned from the field produces displacement stack vapors from the scavenger tank. The content of these vapors was measured by sampling with glass syringe in a similar manner to the cylinder testing. Thirteen samples were run on a G.C. and the results

averaged. A flow meter was connected to the exit line to measure vapor volume. The results were corrected for STP and averaged. The same formula M = 94.94VC/22.4(453.8) was used to calculate pounds of methyl bromide emitted per cylinder. The results for Volume and Concentration were 41.36L vapor and .140 fraction of methyl bromide. Thus, M = 94.94 x 41.36 x .140/22.4 x 453.8 = 0.054 lbs. MB. For 24,364 cylinders vented, total MB for this operation for 1995 was 26,364 x 0.054 = 1,316 lbs.

The third point source, storage tank filling, was measured by sampling displacement vapors over a 14 hour period, once per hour beginning at time = 0 for a total of fifteen samples. The samples were analyzed on the G.C. and the concentrations of methyl bromide were plotted on a curve versus time.

Once every hour volume measurements for 5 minutes were taken through a calibrated flow meter from which a per minute volume of displacement vapor flow was figured over the entire filling time. The total volume of displacement vapor was calculated to be 53,025L corrected for STP. The average MB concentration fraction in the vapor was calculated at 0.141. Using the formula M = 94.94VC/22.4(453.8), M = 94.94 x 53,025C.141/22.4 x 453.8 = 69.83 lbs. methyl bromide. For 25 transfers from rail tanks to storage tanks for 1995, the total methyl bromide was 1,746 lbs.

Thus, the total point source emissions of methyl bromide for 1995 are estimated to be 21,055 lbs.

Chloropicrin point source emissions were sampled for two cylinder fillings and one cylinder

purging operation. For cylinder fillings of mixture 98/2 and 67/33 (2% and 33% chloropicrin) 8 samples of displacement vapors averaged 675ppm chloropicrin. Four samples of scavenger tank exit vapors averaged 2,418ppm chloropicrin. The above concentrations are much less than the comparable methyl bromide concentrations, a result which would be expected because of the large difference in vapor pressures: (methyl bromide b.p. 3.6°C, chloropicrin b.p. 112°C). Average concentrations of methyl bromide in displacement vapors for all cylinders filled was 265,600ppm and for scavenger tank exit vapors was 140,000ppm. Chloropicrin concentrations were 0.25% and 1.7% of these amounts. Using a ratio of chloropicrin concentration to methyl bromide concentration times pounds methyl bromide stack emissions from cylinder filling, or 675/265,500x19,514 = 49.6 pounds. For scavenger tank operations, pounds chloropicrin would be the ratio of chloropicrin vapors to methyl bromide vapors times pounds methyl bromide emitted, or 2,418/140,000 x 4,772 = 82 pounds.

Chloropicrin vapors from storage tank fillings were estimated by averaging the concentrations in the cylinder filling and scavenger operation, (675ppm + 2,418ppm)/2 = 1,547ppm. The ratio of this concentration to the average methyl bromide concentration during the tank filling times the pounds methyl bromide emitted per tank filling times the number of chloropicrin tanks filled or 1,547/141,000 x 75.7 x 6 = 5 lbs. chloropicrin emitted during storage tank filling.

The total point source emissions of chloropicrin for 1995 are estimated to be 137 pounds.

Peak hourly emissions for methyl bromide and chloropicrin occur when cylinders are being filled.

The formulation of mixtures 100%, 99%, etc. produces about 28 lbs per hour of methyl bromide emitted through the vent stack. This is figured from an average time of 3 minutes to fill a standard cylinder and an amount of 1.42 lbs of methyl bromide emitted per 98%+ cylinder.

Peak hourly chloropicrin emitted from filling could be estimated by multiplying the ratio of the chloropicrin vapor concentrations to methyl bromide concentrations for cylinder filling 675ppm to 265,000ppm times the average MB emitted per cylinder for all cylinders, or .739 lbs/cylinder. The result is .002 lbs per cylinder and .04 lbs per hour.

Fugitive emissions for methyl bromide, chloropicrin and Telone were calculated using EPA equipment components emissions factors for light liquids. These factors can be found in Publication EPA - 450/3 - 86-002 and for this report are shown below. EPA defines a light liquid to have a vapor pressure greater than 0.1 psia at 100°F. Methyl bromide, chloropicrin and Telone are all more volatile than this minimum.

Component	Fugitive Emissions Factor - lbs/hour
In-line valve	.0038
Flange	.00013
Pump seals	.026
Open end line	

(when finished filling each cylinder) .0033

Annual fugitive emissions for each component and for each liquid are figured by multiplying number of hours in service by the emissions factors. The following table summarized 1995 fugitive emissions for methyl bromide, chloropicrin and Telone. Also, peak hourly emissions are figured for each liquid.

Methyl Bromide:

Device #001

Section A	Component	Emission Factor	Annual Hours	Annual Emissions
MB 100% Line	5 Valves	.0038 lbs/hr ea	130	2.47 lbs.
	1 Filter (flange)	.00013	130	.02
In/Out Line	3 Valves	.0038	750	8.55
MB 98% 100% Line	8 Valves	.0038	2400	72.96
	2 Filters	.00013	2400	0.62
RR Car In Line & Pumps	15 Valves	.0038	500	28.5
	2 Filters	.00013	500	.013
	2 Pumps	.0260	460	23.92

Device #002

Section B	12 Valves	.0038	30	1.37

Device #003

Section C	8 Valves	.0038	1700	51.68

Device #004

Vapor Recovery System	13 Valves	.0038	2190	100.19
	1 Filter	.00013	2190	0.28

Device #005, Overhead System

MB 98%/ 100% Line	2 Valves	.0038	1420	10.79
	11 Valves	.0038	800	33.44
In/Out Line	10 Valves	.0038	530	20.14
MB 100% Line	3 Valves	.0038	130	1.48

Device #006, Top of Tanks

	6 Valves	.0038	165	3.76
				360.30

Open End Line (when transfer finished for each cylinder)
24,364 cylinders filled x .0033 lbs. per transfer x 80% average
MB component = 64.32

Total Annual Fugitive Emissions, Methyl Bromide **387.88 lbs**

Peak hourly emissions of methyl bromide occurs when filling cylinders from storage tanks through the MB 98/100 lines, top of tanks through overhead, through A.

27 Valves	.0038	1	.10 lbs

12 Cylinders per hour	.0033 x .80		.03

Peak Hourly Emissions, Methyl Bromide .13 lbs

Chloropicrin:

Device #001

Section A				
Pic out	5 Valves	.0038 lbs/hr	190	3.61
Line	2 Filters (flanges)	.00013	190	0.05

Device #004, Vapor Recovery System

13 Valves	.0038	433	21.39
1 Filter	.00013	433	0.06

Device #005, Overhead System

6 Valves	.0038	190	4.33
1 Filter	.00013	190	.02

Device #006, Top of Tank

6 Valves	.0038	78	1.78
			31.24 lbs

Open End Line Transfers
24,364 cylinders x .0033 lbs/transfer x 20% average chloropicrin component = 16.08 lbs

Total Annual Emissions of Chloropicrin 47.32 lbs

Peak hourly emissions of chloropicrin occur when filling cylinders from a storage tank through the pic out line, through A.

22 Valves	.0038	1 hr.	0.08
3 Filters	.0013	1 hr.	.00
			0.08 lbs

12 cylinders filled per hour .0033 x .20	0.01
Peak Hourly Emissions of Chloropicrin	0.09 lbs

Telone:

Device #007

		lbs/hr		hours in service			
	8 Valves	.0038	x	20 hrs.	=	0.08	lbs/yr
	2 Filters	.00013	x	20 hrs.	=	0.003	
Storage/ Bulk Transfer System	1 Pump	.020	x	20 hrs.	=	0.40	
11		0.0234 lbs/hr					

Total Annual Fugitive Emission, Telone 0.48 lbs/yr

Peak Hourly Emissions .02 lbs lbs/hr

Device #008

The paint spray booth emits a certain amount of VOC's which, because of their chemical makeup, are exempt from quantification or listing. There is, however, a particulate component of emission in the paint spraying procedure. To estimate this component, we have used a guideline prepared for autobody shops by the Toxics Committee of the California Air Pollution Control offices.

The report estimates that in partially enclosed spray booths where use is made of a high volume, low pressure spray gun (HLUP), about 65% of the paint is applied to the intended object, the balance emitted to the atmosphere. Assuming all of this amount passes through the spray booth filters and using the vendor's 98.66% filter efficiency rating, the amount of particulate toxics released to the outside air and to be quantified would be as follows.

Ea = F x D x AURx (1 - Transfer Efficiency) (1 - Filter Efficiency)
Eh = F x D x HUR Max x (1 - Transfer Efficiency) (1 - Filter Efficiency)

Where:

Ea = Annual Emissions of Lead/Chromium (lbs/yr)
Eh = Maximum Hourly Emissions of Lead/Chromium (lbs/hr)
F = Weight Fraction of Lead or Chromium* in the Paint (lbs/lb)

Section 6

TABLE 2

TRICAL FACILITY 1995 AB 2588 ANNUAL SUBSTANCE EMISSIONS SUMMARY

Listed Substances	Device ID#:	Section A 001	Section B 002	Section C 003	Vapor Recovery 004	Overhead System 005	Top of Tank 006
Methyl Bromide		137	1	52	100	66	4
Chloropicrin		4			21	4	31
Telone							
Lead							
Chromium							

Section 6

TABLE 2

TRICAL FACILITY 1995 AB 2588 ANNUAL SUBSTANCE EMISSIONS SUMMARY

Listed Substances	Device ID#:	Telone System 007	Paint Spray Booth 008	Paint Scrubber 009	Vent Stack 010	Transfer Loss	Total Emissions Lbs/year
Methyl Bromide					21,055	64	21,479
Chloropicrin					137	16	213
Telone		0.5					0.5
Lead			0.15	2.10			2.25
Chromium			0.025	.35			0.375

SEC6TAB2.WPD

Section 6

TABLE 3

TRICAL FACILITY 1995 AB 2588 MAXIMUM HOURLY EMISSIONS SUMMARY

Listed Substances	Device ID#:	Telone System 007	Paint Spray Booth 008	Paint Scrubber 009	Vent Stack 010	Transfer Loss	Total Peak Hourly Emissions
Methyl Bromide					28	.03	28.1
Chloropicrin					.04	.01	.05
Telone							
Lead				.013			.013
Chromium				.002			.002

TAB3CON.WPD

TABLE 3

TRICAL FACILITY 1995 AB 2588 MAXIMUM HOURLY SUBSTANCE EMISSIONS SUMMARY

Listed Substances	Device ID#:	Section A 001	Section B 002	Section C 003	Vapor Recovery 004	Overhead System 005	Top of Tank 006
Methyl Bromide		.06				.05	.02
Chloropicrin		.03				.03	.02
Telone							
Lead							
Chromium							

TAB3.WPD

APPENDIX A: REPORTING FORMS

INVENTORY YEAR	AIR TOXICS EMISSION DATA SYSTEM REVIEW & UPDATE REPORT FACILITY DESCRIPTION	FORM
1995		FAC

FACILITY DATA

COMPANY NAME: TRICAL INC

ADDRESS: 8770 HWY 25

CITY: HOLLISTER

ZIP CODE: 95023-1327

COUNTY ID: 35

FACILITY ID: 158

ACTION CODE: A

DISTRICT: MBG

CONTACT PERSON: HANK MAZE

TELEPHONE: 408-637-0195

AIR BASIN CODE: NCC

FACILITY SIC: 2879

NUMBER OF EMPLOYEES: 65

CITY CODE (OPTIONAL):

AQCR (OPTIONAL):

SUBCOUNTY ID (OPT.):

MAILING ADDRESS DATA

COMPANY NAME: TRICAL INC

ADDRESS: PO BOX 1327

CITY: HOLLISTER

STATE: CA

ZIP CODE: 95024-1327

ATTENTION: HANK MAZE

FACD1 (OPTIONAL):

FACD2 (OPTIONAL):

UTM ZONE: 10

UTM EAST:

UTM NORTH:

NAME: [signature]

DATE: 2/26/97

INVENTORY YEAR 19 95	AIR TOXICS EMISSION DATA SYSTEM REVIEW & UPDATE REPORT STACK DATA	FORM STK

AIR BASIN: NCC | COUNTY ID: 35 | FACILITY ID: 158

DO NOT DELETE STACK IF IT SERVES OTHER DEVICES. SEE INSTRUCTIONS

DESC CODE	STACK/VENT CATEGORY	REQUIRED INFORMATION
	AMBIENT TEMP & LOW-VELOCITY EXHAUST (T W/IN 25 F OF AMBIENT & V LT 750 FPM)	
1	RELEASE POINT(RP) AT GROUND-LEVEL	STACK ID & CODE ONLY
2	RELEASE FROM BLDG HVAC ONLY	STACK ID, CODE, & STACK HEIGHT
3	RP W/IN (2.5 X HB) ABOVE GROUND AND W/IN (5 X HB) SIDEWAYS TO NEAREST BLDG	STACK ID, CODE & STACK HEIGHT
4	OTHER STACK/VENT (LOW T,V)	STACK ID, CODE & STACK HEIGHT
	OTHER TEMP & FLOW CONDITIONS	
5	RP W/IN (2.5 X HB) ABOVE GROUND AND W/IN (5 X HB) SIDEWAYS TO NEAREST BLDG	ALL STACK INFORMATION
6	OTHER STACK/VENT (OTHER T,V)	ALL STACK INFORMATION

WHERE HB = HEIGHT OF NEAREST BUILDING AND HVAC = HEATING, VENTILATING AND AIR CONDITIONING

ACTION CODE	STACK ID	DESC CODE	HEIGHT ABOVE GROUND (FEET)	DIAMETER (FEET)	********* EXHAUST ********* GAS TEMP (F)	GAS FLOW RATE (CFM)	GAS VELOCITY (FPM)	UTM EAST (KILOMETER)	UTM NORTH (KILOMETER)
A	10 10	4	32	1.5	65	8420	234		

ARB/STK/930401

NAME _____ DATE 2/26/97

INVENTORY YEAR 1995	AIR TOXICS EMISSION DATA SYSTEM REVIEW & UPDATE REPORT DEVICE DESCRIPTION AND DEVICE-STACK RELATIONS	FORM DEV

AIR BASIN: NCC COUNTY ID: 35

FACILITY ID: 158

*** ITEMS BELOW ARE OPTIONAL ***

ACTION CODE	DEVICE ID	DEVICE NAME	NBR OF DEV.	STACK ID	PERMIT ID (IF AVAILABLE)	DEVD1	DEVD2	DEVICE GROUP
	0001	SELECTION A PIPING	36					
	0002	SELECTION B PIPING	12					
	0003	SELECTION C PIPING	8					
	0004	VAPOR RECOVERY	14					
	0005	OVERHEAD PIPING	26					
	0006	TOP OF TANKS	6					

NAME [signature] DATE 2/26/97

ARB/DEV/930401

INVENTORY YEAR 19 95	AIR TOXICS EMISSION DATA SYSTEM REVIEW & UPDATE REPORT DEVICE DESCRIPTION AND DEVICE-STACK RELATIONS	FORM DEV

AIR BASIN: NCC COUNTY ID: 315

FACILITY ID: 158

*** ITEMS BELOW ARE OPTIONAL ***

ACTION CODE	DEVICE ID	DEVICE NAME	NBR OF DEV.	STACK ID	PERMIT ID (IF AVAILABLE)	DEVD1	DEVICE GROUP	DEVD2
C	1007	TELLONE SYSTEM	111					
	1008	PAINT BOOTH	11					
	1009	PAINT SCRUBBER	1					
A	1010	VAPOR VENT STACK	1					

NAME [illegible] DATE 2/26/97

ARB/DEV/930401

INVENTORY YEAR 1995

AIR TOXICS EMISSION DATA SYSTEM REVIEW & UPDATE REPORT
PROCESS AND EMITTENTS DATA

FORM **PRO** SIDE A

PROCESS DESCRIPTION: FUMIGANT PACKAGING | C

SCC NO: --

COUNTY ID: 35

AIR BASIN: NCC

ACTION CODE:

PROD1 (OPTIONAL):

PROD2 (OPTIONAL):

FACILITY ID: 158

STOP - FILL OUT ANY SUPPLEMENTAL PROCESS FORM(S) FOR THIS PROCESS FIRST. THEN FILL OUT THIS PAGE, SUBMITTING ONE FOR EACH EMITTING PROCESS IN YOUR FACILITY.

SECTION 1 PROCESS DATA

DEVICE I.D.: 001

SIC: 2879

CONFIDENTIAL (Y/N) IF Y CHECK SMALL BOXES AS APPROPRIATE: N

PROCESS EQUIPMENT DESCRIPTION: PIPING SYSTEM | C

FUEL TYPE /OTHER PROCESS INFO: | C

YR. OF EST./PRO: 195

NOTE USE 1 SPACE FOR EACH DECIMAL POINT

STACK ID:

TOTAL YEARLY PROCESS RATE (UNITS/YR)	C	MAXIMUM HOURLY PROCESS RATE (UNITS/HR)	C	PROCESS UNITS	C	HRS/DAY	C	DAYS/WEEK	C	WKS/YEAR	C
52117		.825		PT118		8		5		52	

RELATIVE MONTHLY ACTIVITY (%) C

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2	3	5	4	4	5	12	13	17	18	12	5

SECTION 2 — **EMITTENT DATA** — **EMISSIONS**

SUBSTANCE NAME: Methyl Bromide

ACTION CODE	YR. OF EST./EMS	EMITTENT ID	EST METH	C	ACTUAL EMISSIONS FACTOR(LBS/UNIT)	C	ANNUAL AVERAGE EMISSIONS (LBS/YR)
C	95	74839	6		137		137

ALLOWABLE EMIS LBS/YR(OPTIONAL)	*CONTROL EQPT CODES* PRIMARY	C	SECONDARY	C	OVERALL CONTROL EFF(%)	C	FULL/PART	C	HOURLY MAX EMISSIONS (LBS/HOUR)
									.06

SUBSTANCE NAME: Chloropicrin

ACTION CODE	YR. OF EST./EMS	EMITTENT ID	EST METH	C	ACTUAL EMISSIONS FACTOR(LBS/UNIT)	C	ANNUAL AVERAGE EMISSIONS (LBS/YR)
C	95	76062	6		4		4

ALLOWABLE EMIS LBS/YR(OPTIONAL)	*CONTROL EQPT CODES* PRIMARY	C	SECONDARY	C	OVERALL CONTROL EFF(%)	C	FULL/PART	C	HOURLY MAX EMISSIONS (LBS/HOUR)
									.001

NAME [signature] *DATE* 2/26/97

ARB/PROA/930312

INVENTORY YEAR 19 95

AIR TOXICS EMISSION DATA SYSTEM REVIEW & UPDATE REPORT
PROCESS AND EMITTENTS DATA

FORM **PRO** SIDE A

PROCESS DESCRIPTION: FUMIGANT PACKAGING C

SCC NO: - - -

COUNTY ID: 35

AIR BASIN: NCC

ACTION CODE: A

PROD1 (OPTIONAL):

PROD2 (OPTIONAL):

FACILITY ID: 158

STOP - FILL OUT ANY SUPPLEMENTAL PROCESS FORM(S) FOR THIS PROCESS FIRST. THEN FILL OUT THIS PAGE, SUBMITTING ONE FOR EACH EMITTING PROCESS IN YOUR FACILITY.

SECTION 1 PROCESS DATA

DEVICE I.D.: 010

SIC: 2879

CONFIDENTIAL (Y/N) IF Y CHECK SMALL BOXES AS APPROPRIATE:

PROCESS EQUIPMENT DESCRIPTION: VENT STACK C

FUEL TYPE /OTHER PROCESS INFO C

YR. OF EST./PRO

NOTE USE 1 SPACE FOR EACH DECIMAL POINT

STACK ID: 010

TOTAL YEARLY PROCESS RATE (UNITS/YR): 5034 C

MAXIMUM HOURLY PROCESS RATE (UNITS/HR): 12.4 C

PROCESS UNITS: PT 118 C

HRS/DAY: 8 C

DAYS/WEEK: 5 C

WKS/YEAR: 52 C

RELATIVE MONTHLY ACTIVITY (%) C

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
12	13	15	14	14	15	12	13	17	18	12	15

SECTION 2

EMITTENT DATA — EMISSIONS

SUBSTANCE NAME: Methyl Bromide

ACTION CODE: A

YR. OF EST./EMS: 95

EMITTENT ID: 74839

EST METH: 1 C

ACTUAL EMISSIONS FACTOR(LBS/UNIT): 2105 C

ANNUAL AVERAGE EMISSIONS (LBS/YR): 21055

ALLOWABLE EMIS LBS/YR(OPTIONAL):

CONTROL EQPT CODES PRIMARY C

SECONDARY C

OVERALL CONTROL EFF(%) C

FULL/PART C

HOURLY MAX EMISSIONS (LBS/HOUR): 40

SUBSTANCE NAME: Chloropicrin

ACTION CODE: A

YR. OF EST./EMS: 95

EMITTENT ID: 76062

EST METH: 1 C

ACTUAL EMISSIONS FACTOR(LBS/UNIT): 137 C

ANNUAL AVERAGE EMISSIONS (LBS/YR): 137

ALLOWABLE EMIS LBS/YR(OPTIONAL):

CONTROL EQPT CODES PRIMARY C

SECONDARY C

OVERALL CONTROL EFF(%) C

FULL/PART C

HOURLY MAX EMISSIONS (LBS/HOUR): 0.216

ARB/PROA/930312

NAME Joan Mega DATE 2/26/97

INVENTORY YEAR 19 95

AIR TOXICS EMISSION DATA SYSTEM REVIEW & UPDATE REPORT
PROCESS AND EMITTENTS DATA

FORM **PRO** SIDE A

PROCESS DESCRIPTION: PAINT STRIPPING C | SCC NO: | COUNTY ID: 35 | AIR BASIN: NCC

ACTION CODE: C | PROD1 (OPTIONAL): | PROD2 (OPTIONAL): | FACILITY ID: 158

STOP - FILL OUT ANY SUPPLEMENTAL PROCESS FORM(S) FOR THIS PROCESS FIRST. THEN FILL OUT THIS PAGE, SUBMITTING ONE FOR EACH EMITTING PROCESS IN YOUR FACILITY.

SECTION 1 PROCESS DATA

DEVICE I.D.: 009 | SIC: 2879 | CONFIDENTIAL (Y/N) IF Y CHECK SMALL BOXES AS APPROPRIATE:

PROCESS EQUIPMENT DESCRIPTION: PAINT STRIP C | FUEL TYPE /OTHER PROCESS INFO: C | YR. OF EST./PRO: 95

NOTE USE 1 SPACE FOR EACH DECIMAL POINT

STACK ID:

TOTAL YEARLY PROCESS RATE (UNITS/YR)	MAXIMUM HOURLY PROCESS RATE (UNITS/HR)	PROCESS UNITS	HRS/ DAY	DAYS/ WEEK	WKS/ YEAR
175 C	1 C	PT064 C	18 C	5 C	14 C

RELATIVE MONTHLY ACTIVITY (%) C

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
20	20	20	20								

SECTION 2

EMITTENT DATA — EMISSIONS

SUBSTANCE NAME: Lead

ACTION CODE	YR. OF EST./EMS	EMITTENT ID	EST METH	ACTUAL EMISSIONS FACTOR(LBS/UNIT)	ANNUAL AVERAGE EMISSIONS (LBS/YR)
C	95	7439921	9 C	2 C	2

ALLOWABLE EMIS LBS/YR(OPTIONAL)	*CONTROL EQPT CODES* PRIMARY	SECONDARY	OVERALL CONTROL EFF(%)	FULL/ PART	HOURLY MAX EMISSIONS (LBS/HOUR)
	C	C	C	C	.018

SUBSTANCE NAME: Chromium

ACTION CODE	YR. OF EST./EMS	EMITTENT ID	EST METH	ACTUAL EMISSIONS FACTOR(LBS/UNIT)	ANNUAL AVERAGE EMISSIONS (LBS/YR)
		7440473	9 C	.85 C	.315

ALLOWABLE EMIS LBS/YR(OPTIONAL)	*CONTROL EQPT CODES* PRIMARY	SECONDARY	OVERALL CONTROL EFF(%)	FULL/ PART	HOURLY MAX EMISSIONS (LBS/HOUR)
	C	C	C	C	.012

ARB/PROA/930312

NAME [signature] DATE 2/26/97

INVENTORY YEAR 19 95

AIR TOXICS EMISSION DATA SYSTEM REVIEW & UPDATE REPORT
PROCESS AND EMITTENTS DATA

FORM **PRO** SIDE A

PROCESS DESCRIPTION: SPRAY PAINTING C | SCC NO: - - - | COUNTY ID: 35 | AIR BASIN: NCC

ACTION CODE: C | PROD1 (OPTIONAL): | PROD2 (OPTIONAL): | FACILITY ID: 198

STOP - FILL OUT ANY SUPPLEMENTAL PROCESS FORM(S) FOR THIS PROCESS FIRST. THEN FILL OUT THIS PAGE, SUBMITTING ONE FOR EACH EMITTING PROCESS IN YOUR FACILITY.

SECTION 1 PROCESS DATA

DEVICE I.D.: 008 | SIC: 2879 | CONFIDENTIAL (Y/N) IF Y CHECK SMALL BOXES AS APPROPRIATE:

PROCESS EQUIPMENT DESCRIPTION: PAINT BOOTH C | FUEL TYPE /OTHER PROCESS INFO C | YR. OF EST./PRO: 95

NOTE USE 1 SPACE FOR EACH DECIMAL POINT

STACK ID:

TOTAL YEARLY PROCESS RATE (UNITS/YR)	MAXIMUM HOURLY PROCESS RATE (UNITS/HR)	PROCESS UNITS	HRS/ DAY	DAYS/ WEEK	WKS/ YEAR
175 C	1.1 C	PT 0164 C	8 C	5 C	14 C

RELATIVE MONTHLY ACTIVITY (%) C

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
20	20	20	20								

SECTION 2

EMITTENT DATA — EMISSIONS

SUBSTANCE NAME: Lead

ACTION CODE	YR. OF EST./EMS	EMITTENT ID	EST METH	ACTUAL EMISSIONS FACTOR(LBS/UNIT)	ANNUAL AVERAGE EMISSIONS (LBS/YR)
C	95	7439921	9 C	.15 C	.15

ALLOWABLE EMIS LBS/YR(OPTIONAL)	*CONTROL EQPT CODES* PRIMARY	SECONDARY	OVERALL CONTROL EFF(%)	FULL/ PART	HOURLY MAX EMISSIONS (LBS/HOUR)
	C	C	C	C	.0103

SUBSTANCE NAME: Chromium

ACTION CODE	YR. OF EST./EMS	EMITTENT ID	EST METH	ACTUAL EMISSIONS FACTOR(LBS/UNIT)	ANNUAL AVERAGE EMISSIONS (LBS/YR)
C		7440473	9 C	.0125 C	.0125

ALLOWABLE EMIS LBS/YR(OPTIONAL)	*CONTROL EQPT CODES* PRIMARY	SECONDARY	OVERALL CONTROL EFF(%)	FULL/ PART	HOURLY MAX EMISSIONS (LBS/HOUR)
	C	C	C	C	.00012

NAME [signature] DATE 2/26/97

ARB/PROA/930312

INVENTORY YEAR 19 95

AIR TOXICS EMISSION DATA SYSTEM REVIEW & UPDATE REPORT
PROCESS AND EMITTENTS DATA

FORM **PRO** SIDE A

PROCESS DESCRIPTION: FUMIGATION PACKAGING (NT) C

SCC NO: 4-08-800-01

COUNTY ID: 15

AIR BASIN: NCC

ACTION CODE:

PROD1 (OPTIONAL):

PROD2 (OPTIONAL):

FACILITY ID: L518

STOP - FILL OUT ANY SUPPLEMENTAL PROCESS FORM(S) FOR THIS PROCESS FIRST. THEN FILL OUT THIS PAGE, SUBMITTING ONE FOR EACH EMITTING PROCESS IN YOUR FACILITY.

SECTION 1
PROCESS DATA

DEVICE I.D.: 007

SIC: 2879

CONFIDENTIAL (Y/N) IF Y CHECK SMALL BOXES AS APPROPRIATE:

PROCESS EQUIPMENT DESCRIPTION: TELONE SYSTEM C

FUEL TYPE /OTHER PROCESS INFO: C

YR. OF EST./PRO: 95

NOTE USE 1 SPACE FOR EACH DECIMAL POINT

STACK ID:

20 hrs/yr

TOTAL YEARLY PROCESS RATE (UNITS/YR)	MAXIMUM HOURLY PROCESS RATE (UNITS/HR)	PROCESS UNITS	HRS/ DAY	DAYS/ WEEK	WKS/ YEAR
components 3000 C	components 1.15 C	003 PT 1118 C (items in oper.)	8 C	5 C	52 C

RELATIVE MONTHLY ACTIVITY (%) C

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2	3	5	6	6	5	12	13	17	18	12	5

SECTION 2

EMITTENT DATA | **EMISSIONS**

SUBSTANCE NAME: 1,3-Dichloropropene (Telone)

ACTION CODE	YR. OF EST./EMS	EMITTENT ID	EST METH	ACTUAL EMISSIONS FACTOR(LBS/UNIT)	ANNUAL AVERAGE EMISSIONS (LBS/YR)
C	95	542756	6 C	.5 C	.15

ALLOWABLE EMIS LBS/YR(OPTIONAL)	*CONTROL EQPT CODES* PRIMARY	SECONDARY	OVERALL CONTROL EFF(%)	FULL/ PART	HOURLY MAX EMISSIONS (LBS/HOUR)
	C	C	C	C	0.02 10

SUBSTANCE NAME:

ACTION CODE	YR. OF EST./EMS	EMITTENT ID	EST METH	ACTUAL EMISSIONS FACTOR(LBS/UNIT)	ANNUAL AVERAGE EMISSIONS (LBS/YR)
			C	C	

ALLOWABLE EMIS LBS/YR(OPTIONAL)	*CONTROL EQPT CODES* PRIMARY	SECONDARY	OVERALL CONTROL EFF(%)	FULL/ PART	HOURLY MAX EMISSIONS (LBS/HOUR)
	C	C	C	C	

ARB/PROA/930312

NAME [signature] DATE 2/26/97

INVENTORY YEAR 19 95

AIR TOXICS EMISSION DATA SYSTEM REVIEW & UPDATE REPORT
PROCESS AND EMITTENTS DATA

FORM **PRO** SIDE A

PROCESS DESCRIPTION: FUMIGATION PACKAGING C

SCC NO:

COUNTY ID: 35

AIR BASIN: NCC

ACTION CODE:

PROD1 (OPTIONAL):

PROD2 (OPTIONAL):

FACILITY ID: 1158

STOP - FILL OUT ANY SUPPLEMENTAL PROCESS FORM(S) FOR THIS PROCESS FIRST. THEN FILL OUT THIS PAGE, SUBMITTING ONE FOR EACH EMITTING PROCESS IN YOUR FACILITY.

SECTION 1
PROCESS DATA

DEVICE I.D.: 0016

SIC: 2879

CONFIDENTIAL (Y/N) IF Y CHECK SMALL BOXES AS APPROPRIATE:

PROCESS EQUIPMENT DESCRIPTION: TANKS C

FUEL TYPE /OTHER PROCESS INFO: C

YR. OF EST./PRO: 95

NOTE USE 1 SPACE FOR EACH DECIMAL POINT

STACK ID:

TOTAL YEARLY PROCESS RATE (UNITS/YR)	MAXIMUM HOURLY PROCESS RATE (UNITS/HR)	PROCESS UNITS	HRS/ DAY	DAYS/ WEEK	WKS/ YEAR
2250 C	6 C	PT118 C	18 C	5 C	40 C

RELATIVE MONTHLY ACTIVITY (%) C

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2	3	5	4	4	5	12	13	17	18	12	6

SECTION 2

EMITTENT DATA — EMISSIONS

SUBSTANCE NAME: Methyl Bromide

ACTION CODE	YR. OF EST./EMS	EMITTENT ID	EST METH	ACTUAL EMISSIONS FACTOR(LBS/UNIT)	ANNUAL AVERAGE EMISSIONS (LBS/YR)
C	95	74839	6 C	4 C	4

ALLOWABLE EMIS LBS/YR(OPTIONAL)	*CONTROL EQPT CODES* PRIMARY	SECONDARY	OVERALL CONTROL EFF(%)	FULL/ PART	HOURLY MAX EMISSIONS (LBS/HOUR)
	C	C	C	C	.101

SUBSTANCE NAME: Chloropicrin

ACTION CODE	YR. OF EST./EMS	EMITTENT ID	EST METH	ACTUAL EMISSIONS FACTOR(LBS/UNIT)	ANNUAL AVERAGE EMISSIONS (LBS/YR)
C	95	76062	6 C	12 C	12

ALLOWABLE EMIS LBS/YR(OPTIONAL)	*CONTROL EQPT CODES* PRIMARY	SECONDARY	OVERALL CONTROL EFF(%)	FULL/ PART	HOURLY MAX EMISSIONS (LBS/HOUR)
	C	C	C	C	.1015

NAME [signature] DATE 2/26/97

INVENTORY YEAR 19 95

AIR TOXICS EMISSION DATA SYSTEM REVIEW & UPDATE REPORT PROCESS AND EMITTENTS DATA

FORM PRO SIDE A

PROCESS DESCRIPTION: FUMIGANT PACKAGING C | SCC NO: | COUNTY ID: 35 | AIR BASIN: NCC

ACTION CODE: | PROD1 (OPTIONAL): | PROD2 (OPTIONAL): | FACILITY ID: 158

STOP - FILL OUT ANY SUPPLEMENTAL PROCESS FORM(S) FOR THIS PROCESS FIRST. THEN FILL OUT THIS PAGE, SUBMITTING ONE FOR EACH EMITTING PROCESS IN YOUR FACILITY.

SECTION 1 PROCESS DATA

DEVICE I.D.: 005 | SIC: 2879 | CONFIDENTIAL (Y/N) IF Y CHECK SMALL BOXES AS APPROPRIATE:

PROCESS EQUIPMENT DESCRIPTION: OVERHEAD SYSTEM C | FUEL TYPE /OTHER PROCESS INFO C | YR. OF EST./PRO: 95

NOTE USE 1 SPACE FOR EACH DECIMAL POINT

STACK ID:

TOTAL YEARLY PROCESS RATE (UNITS/YR) C	MAXIMUM HOURLY PROCESS RATE (UNITS/HR) C	PROCESS UNITS C	HRS/ DAY C	DAYS/ WEEK C	WKS/ YEAR C
992	.32	PT 118	8	5	52

RELATIVE MONTHLY ACTIVITY (%) C

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2	3	5	4	4	5	12	13	17	18	12	5

SECTION 2

EMITTENT DATA — EMISSIONS

SUBSTANCE NAME: Methyl Bromide

ACTION CODE	YR. OF EST./EMS	EMITTENT ID	EST METH C	ACTUAL EMISSIONS FACTOR(LBS/UNIT) C	ANNUAL AVERAGE EMISSIONS (LBS/YR)
C	95	7483 9	6	66	66

ALLOWABLE EMIS LBS/YR(OPTIONAL)	*CONTROL EQPT CODES* PRIMARY C	SECONDARY C	OVERALL CONTROL EFF(%) C	FULL/ PART C	HOURLY MAX EMISSIONS (LBS/HOUR)
					.103

SUBSTANCE NAME: Chloropicrin

ACTION CODE	YR. OF EST./EMS	EMITTENT ID	EST METH C	ACTUAL EMISSIONS FACTOR(LBS/UNIT) C	ANNUAL AVERAGE EMISSIONS (LBS/YR)
C	95	7606 2	6	4	4

ALLOWABLE EMIS LBS/YR(OPTIONAL)	*CONTROL EQPT CODES* PRIMARY C	SECONDARY C	OVERALL CONTROL EFF(%) C	FULL/ PART C	HOURLY MAX EMISSIONS (LBS/HOUR)
					.0012

NAME [signature] DATE 2/26/97

INVENTORY YEAR 19 95

AIR TOXICS EMISSION DATA SYSTEM REVIEW & UPDATE REPORT
PROCESS AND EMITTENTS DATA

FORM **PRO** SIDE A

PROCESS DESCRIPTION: FUMIGANT PACKAGING C

SCC NO: - - -

COUNTY ID: 35

AIR BASIN: NCC

ACTION CODE:

PROD1 (OPTIONAL):

PROD2 (OPTIONAL):

FACILITY ID: 158

STOP - FILL OUT ANY SUPPLEMENTAL PROCESS FORM(S) FOR THIS PROCESS FIRST. THEN FILL OUT THIS PAGE, SUBMITTING ONE FOR EACH EMITTING PROCESS IN YOUR FACILITY.

SECTION 1
PROCESS DATA

DEVICE I.D.: 004

SIC: 2879

CONFIDENTIAL (Y/N) IF Y CHECK SMALL BOXES AS APPROPRIATE:

PROCESS EQUIPMENT DESCRIPTION: VAPOR RECOVERY C

FUEL TYPE /OTHER PROCESS INFO C

YR. OF EST./PRO: 95

NOTE USE 1 SPACE FOR EACH DECIMAL POINT

STACK ID:

TOTAL YEARLY PROCESS RATE (UNITS/YR) C	MAXIMUM HOURLY PROCESS RATE (UNITS/HR) C	PROCESS UNITS C	HRS/ DAY C	DAYS/ WEEK C	WKS/ YEAR C
26	.01	PT118	18	5	52

RELATIVE MONTHLY ACTIVITY (%) C

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2	3	5	4	4	5	12	13	17	18	12	5

SECTION 2

EMITTENT DATA — EMISSIONS

SUBSTANCE NAME: Methyl Bromide

ACTION CODE	YR. OF EST./EMS	EMITTENT ID	EST METH C	ACTUAL EMISSIONS FACTOR(LBS/UNIT) C	ANNUAL AVERAGE EMISSIONS (LBS/YR)
C	95	74839	6	100	100

ALLOWABLE EMIS LBS/YR(OPTIONAL)	*CONTROL EQPT CODES* PRIMARY C	SECONDARY C	OVERALL CONTROL EFF(%) C	FULL/ PART C	HOURLY MAX EMISSIONS (LBS/HOUR)
					.05

SUBSTANCE NAME: Chloropicrin

ACTION CODE	YR. OF EST./EMS	EMITTENT ID	EST METH C	ACTUAL EMISSIONS FACTOR(LBS/UNIT) C	ANNUAL AVERAGE EMISSIONS (LBS/YR)
C	95	76062	6	21	21

ALLOWABLE EMIS LBS/YR(OPTIONAL)	*CONTROL EQPT CODES* PRIMARY C	SECONDARY C	OVERALL CONTROL EFF(%) C	FULL/ PART C	HOURLY MAX EMISSIONS (LBS/HOUR)
					.011

ARB/PROA/930312

NAME 2/26/97 DATE

INVENTORY YEAR 19 95

AIR TOXICS EMISSION DATA SYSTEM REVIEW & UPDATE REPORT
PROCESS AND EMITTENTS DATA

FORM **PRO** SIDE A

PROCESS DESCRIPTION: FUMIGANT PACKAGING C

SCC NO:

COUNTY ID: 35

AIR BASIN: NCC

ACTION CODE:

PROD1 (OPTIONAL):

PROD2 (OPTIONAL):

FACILITY ID: 1158

STOP - FILL OUT ANY SUPPLEMENTAL PROCESS FORM(S) FOR THIS PROCESS FIRST. THEN FILL OUT THIS PAGE, SUBMITTING ONE FOR EACH EMITTING PROCESS IN YOUR FACILITY.

SECTION 1
PROCESS DATA

DEVICE I.D.: 002

SIC: 2879

CONFIDENTIAL (Y/N) IF Y CHECK SMALL BOXES AS APPROPRIATE:

PROCESS EQUIPMENT DESCRIPTION: PIPING SYSTEM C

FUEL TYPE /OTHER PROCESS INFO: C

YR. OF EST./PRO: 95

NOTE USE 1 SPACE FOR EACH DECIMAL POINT

STACK ID:

TOTAL YEARLY PROCESS RATE (UNITS/YR): 522 C

MAXIMUM HOURLY PROCESS RATE (UNITS/HR): .320 C

PROCESS UNITS: PTI 18 C

HRS/DAY: 8 C

DAYS/WEEK: 5 C

WKS/YEAR: 52 C

RELATIVE MONTHLY ACTIVITY (%) C

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2	3	5	4	4	5	12	13	17	18	12	5

SECTION 2

EMITTENT DATA — EMISSIONS

SUBSTANCE NAME: Methyl Bromide

ACTION CODE	YR. OF EST./EMS	EMITTENT ID	EST METH	ACTUAL EMISSIONS FACTOR(LBS/UNIT)	ANNUAL AVERAGE EMISSIONS (LBS/YR)	ALLOWABLE EMIS LBS/YR(OPTIONAL)	*CONTROL EQPT CODES* PRIMARY	SECONDARY	OVERALL CONTROL EFF(%)	FULL/PART	HOURLY MAX EMISSIONS (LBS/HOUR)
C	95	74839	6 C	52 C	52						.03

SUBSTANCE NAME:

ACTION CODE	YR. OF EST./EMS	EMITTENT ID	EST METH	ACTUAL EMISSIONS FACTOR(LBS/UNIT)	ANNUAL AVERAGE EMISSIONS (LBS/YR)	ALLOWABLE EMIS LBS/YR(OPTIONAL)	*CONTROL EQPT CODES* PRIMARY	SECONDARY	OVERALL CONTROL EFF(%)	FULL/PART	HOURLY MAX EMISSIONS (LBS/HOUR)
			C	C							

NAME Jean Wege DATE 2/24/97

ARB/PROA/930312

Attachment 5
Determination of Saturation Point of the TriCal Filling Plant Carbon Scrubber System with Chloropicrin and Telone

Determination of Saturation Point of the TriCal Filling Plant Carbon Scrubber System with Chloropicrin and Telone

Report on Fall 2018 Sampling and Analysis

TriCal Research Laboratory

October-November 2018

Project #: TC748.2

Test Facility: TriCal Lab

Director of Research: Mike Stanghellini

Principle Investigator: Matt Gillis

Principle Analyst: David Miller

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Appendices

Overview

Refer to Study Protocol in Appendix 1 for details of study methods and materials.

Gas samples were collected at the sampling ports at 9 intervals between October 22 and November 9, 2018 for the course of one carbon drum cycle.

At each time interval, 3 to 6 replicate samples were collected from each port. At the time of sampling, the TriCal Filling Plant personnel provided information on the cylinders being filled/processed and the total number filled up to that point during the use of the current, in-line charcoal drum. These data were recorded on sampling data sheets.

After the samples were collected, they were brought directly to the on-site lab for analysis. Total sample transport time was less than 10 minutes. At the final sampling interval, concentrations of Chloropicrin began to increase consistently above background levels. Subsequent to that, the carbon drum was changed.

Results

Summary of the analytical results for Chloropicrin and Telone for the nine sampling periods are tabulated below in Table 1 and Table 2, respectively. The variate analysis of all of the samples is contained along with associated sampling information in Table 3 in Appendix 2. The data and statistics are summarized and tabulated with reference to the breakthrough point. Concentration data are also plotted against the number of cylinders processed through the system in Figure 1 and Figure 2, which graphically depicts concentration trends of both Chloropicrin and Telone during the study. Chloropicrin vapors increased sharply after 800 cylinders were filled, indicating breakthrough potential at this point. Although there was a small spike at about the same time, Telone concentrations did not increase as dramatically. This was to be expected, as the ratio of Chloropicrin to Telone in the product cylinders scrubbed through the system have a significantly higher chloropicrin content than Telone content. Table 4 in Appendix 2 summarizes the cylinders filled with various Chloropicrin and Telone mixtures.

Monitoring of Air Temperature in the Scrubber Area

The air temperature was recorded continuously for the duration of the tests using a temperature sensor data logger (HOBO MX2303). Temperatures are plotted over time in Figure 3 in Appendix 3.

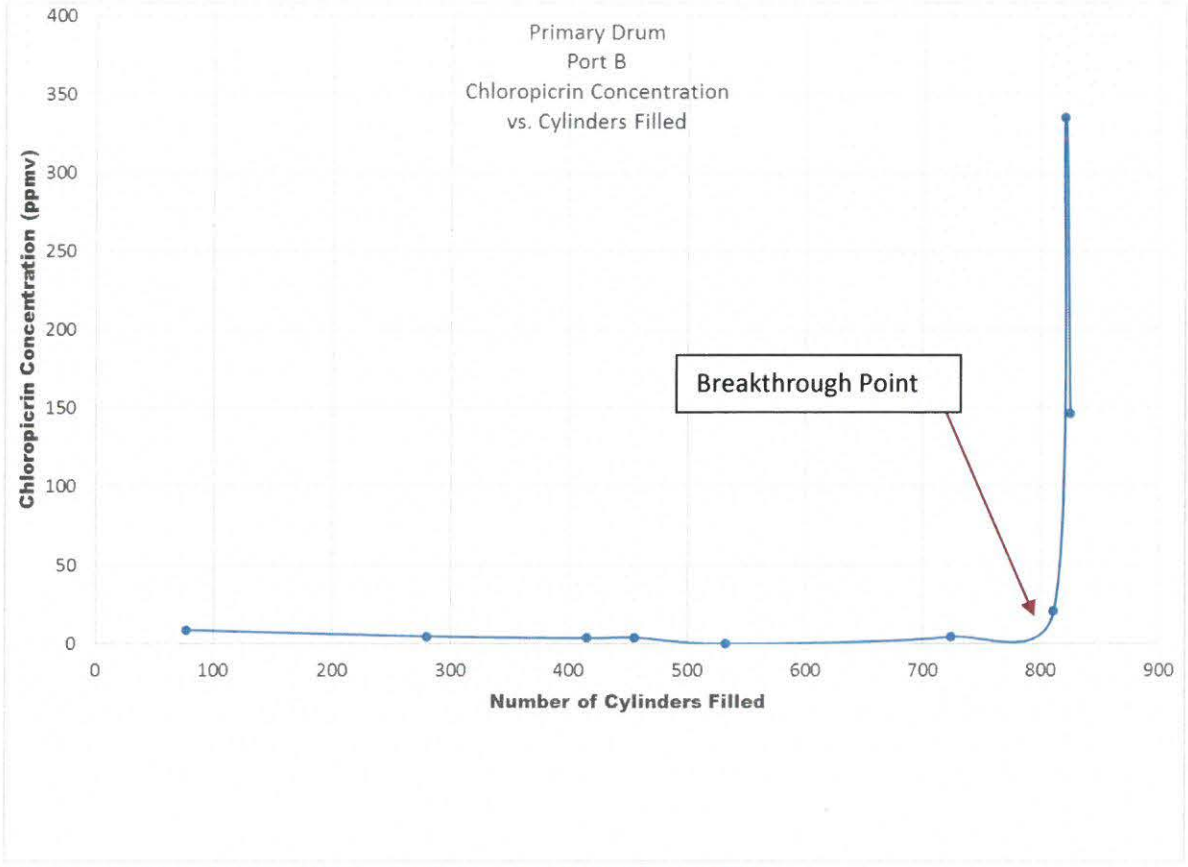

Figure 1-Chloropicrin Concentration versus Cylinders Filled

Table 1-Mean Chloropicrin Concentration in Sampling Ports

Sampling Date	Number of Cylinders filled at Time of Sampling	Primary Drum Port A Chloropicrin Concentration Average	Primary Drum Port B Chloropicrin Concentration Average	Secondary Drum Port C Chloropicrin Concentration	% Port B of Port A
10/22/2018	77	**7730**	**9**	0	0%
10/24/2018	280	**10161**	**5**	0	0%
10/26/2018	416	**10245**	**4**	0	0%
10/26/2018	456	**17233**	**4**	0	0%
10/29/2018	533	**7918**	**0**	0	0%
11/7/2018	724	**6787**	**4**	0	0%
11/8/2018	811	**2750**	**21**	0	1%
11/9/2018	820	**6429**	**335**	0	5%
11/9/2018	825	**8474**	**147**	0	2%

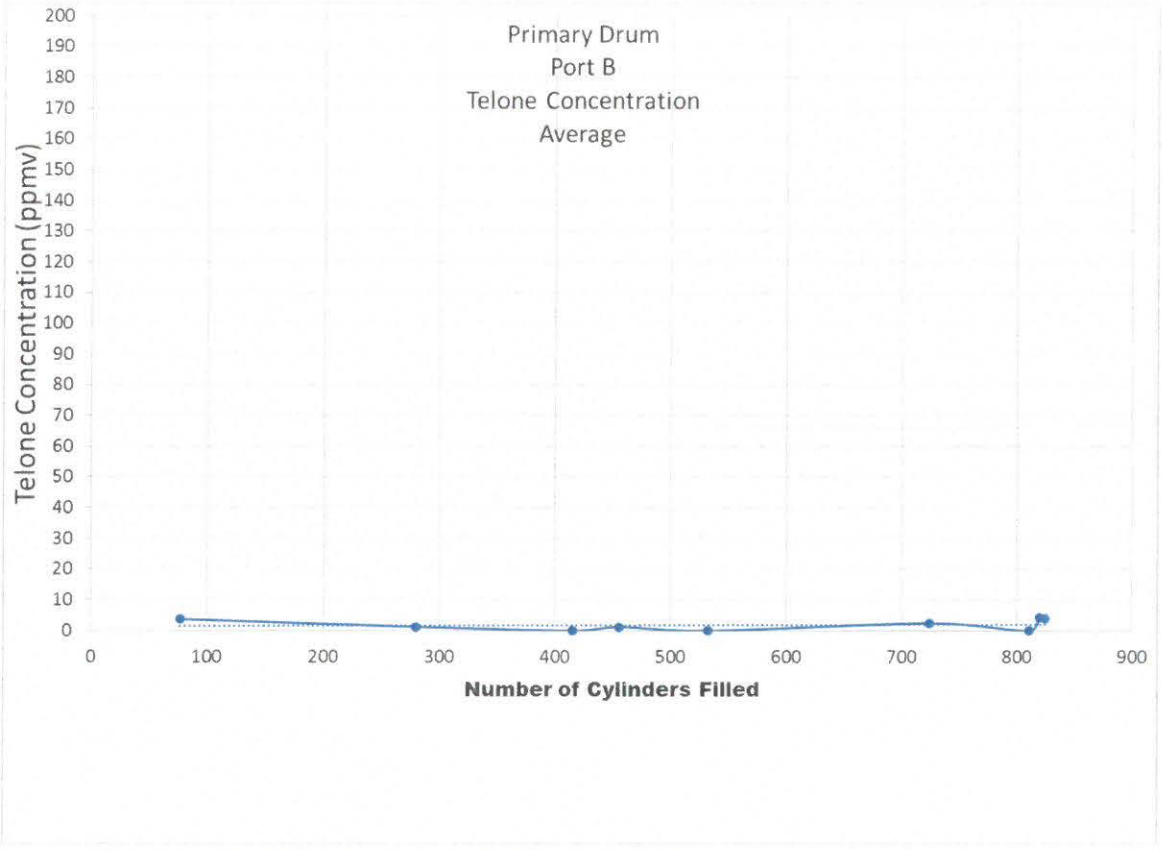

Figure 2-Telone Concentration versus Cylinders Filled

Table 2-Mean Telone Concentration in Sampling Ports

Sampling Date	Number of Cylinders filled at Time of Sampling	**Primary Drum Port A** Telone Concentration **Average**	**Primary Drum Port B** Telone Concentration **Average**	**Secondary Drum Port C** Telone Concentration	% Port B of Port A
10/22/2018	77	**1323**	4	0	0%
10/24/2018	280	**2527**	1	0	0%
10/26/2018	416	**139**	0	0	0%
10/26/2018	456	**43**	1	0	3%
10/29/2018	533	**1261**	0	0	0%
11/7/2018	724	**5971**	2	0	0%
11/8/2018	811	**29**	0	0	0%
11/9/2018	820	**1616**	4	0	0%
11/9/2018	825	**118**	4	0	3%

Appendix 1-Protocol

Determination of Saturation Point of the TriCal Filling Plant Carbon Scrubber System with Chloropicrin and Telone

Protocol

Trical Research Laboratory

October 2018

Project #: TC748.2

Test Facility: Trical Lab

Director of Research: Mike Stanghellini

Principle Investigator: Matt Gillis

Principle Analyst: David Miller

Table of Contents

Table of Figures

Background

Since previous data on the TriCal, Inc. Filing Plant Scrubber system was over 20 years old, additional evaluation of the system for breakthrough of chloropicrin and 1,3-dichloropropene (1,3-D) fumigant vapors is needed. This document provides a testing program to evaluate the system for determining when charcoal drums used in the scrubbing system are saturated with fumigant vapors.

Purpose

This purpose of this testing system is to determine when drum charcoal becomes saturated with chloropicrin and 1,3-D.

Objectives:

1. Sample vapor concentrations from the ports of the scrubber system over the life of the charcoal drum scrubbers and quantify chloropicrin and 1,3-D concentrations in the samples.
2. Determine the number of cylinders at which the chloropicrin and 1,3-D vapors begin passing through the scrubber at increasing concentrations, which signifies charcoal saturationwithin the drum. This will be further referenced as the "breakthrough point".
3. The testing process will be replicated at least 3 times to determine, statistically, the number of cylinders to the breakthrough point.

Methods and Materials

Gas samples will be collected at the sampling ports (see Figure 1) at periodic intervals over the testing program. At each time interval, 3 to 6 replicate samples will be collected from each port. Figure 3 and Figure 4 show examples of the syringes connected to the sampling ports for sample collection. Refer to SOP# TC-FP-004, *Syringe Gas Sampling Methods*, for details of sampling with gas syringes. At the time of sampling, the TriCal Filling Plant personnel will provide information on the cylinders being filled/processed and the total number filled to that point during the use of the current charcoal drum in line. This will be recorded on sampling data sheets.

After the samples are collected, they will be brought directly to the lab for analysis. Total transport time is less than 10 minutes. Refer to SOP# TC-AP-008, *G.C. Analysis of Gas Samples from Syringes and Tedlar Bags* for details of analysis by gas chromatography.

Results

Results of the analyses will be tabulated along with associated sampling information. The data and statistics will be summarized and tabulated with reference to the breakthrough point. Concentration data will also be plotted against the number of cylinders processed through the system to graphically depict breakthrough trends. These data will be provided to the Study Director.

Raw data will be securely retained in either hard copy or electronic form. The GC analyses will be retained in electronic form. The Filling Plant personnel will retain relevant information on the cylinder filling process according to their specific procedures.

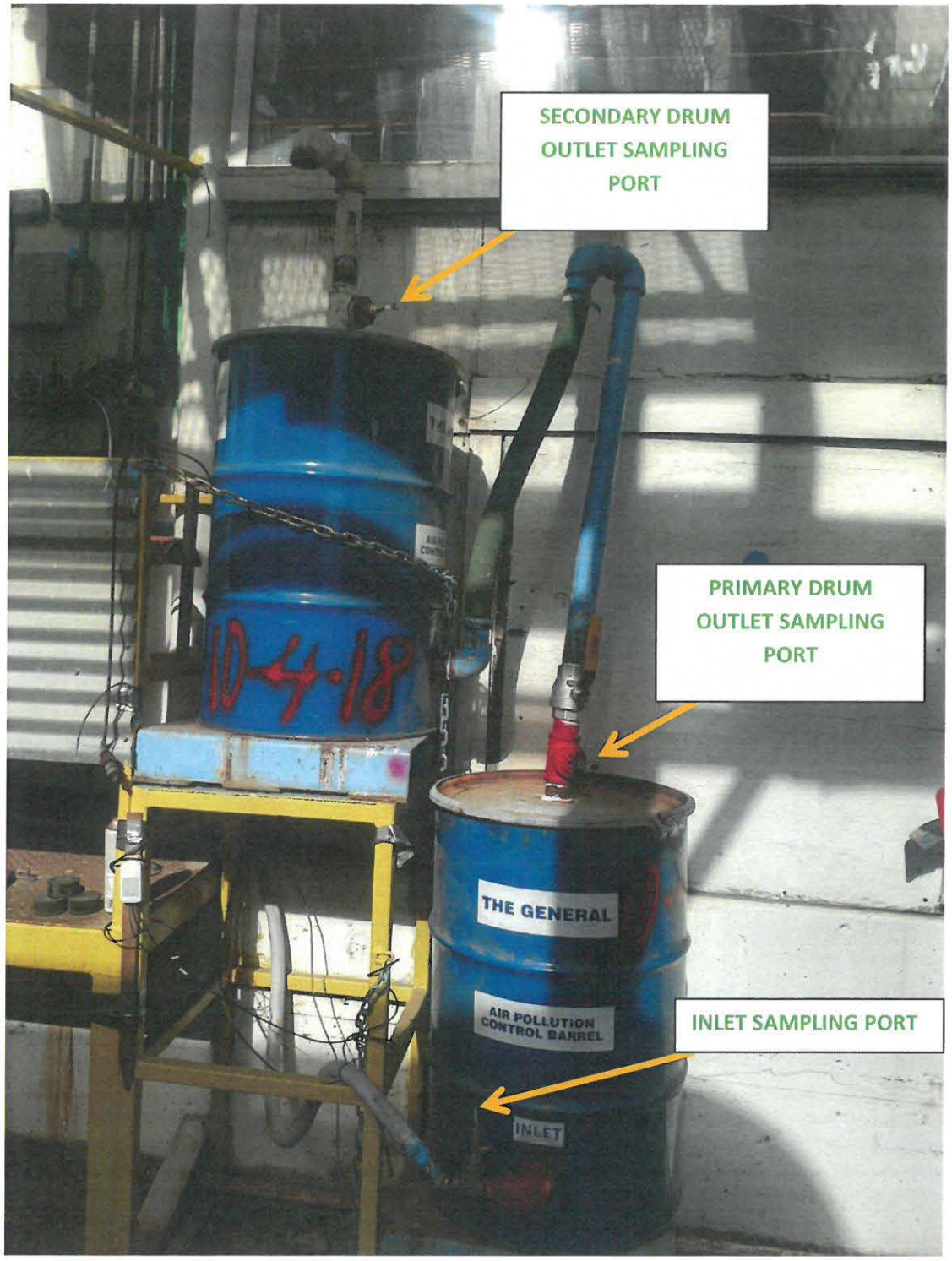

Figure 1. Carbon drum scrubber system showing Primary drum (bottom) and Secondary breakthrough drum (top) and gas sampling ports

Figure 2. Carbon Drum Scrubber.

Figure 3. Sampling port with gas sampling syringe connected through septum.

Figure 4 . Sampling port with gas sampling syringe connected through septum.

Monitoring of Air Temperature in the Scrubber Area

The air temperature will be recorded continuously for the course of the tests using a temperature sensor data logger (HOBO MX2303)

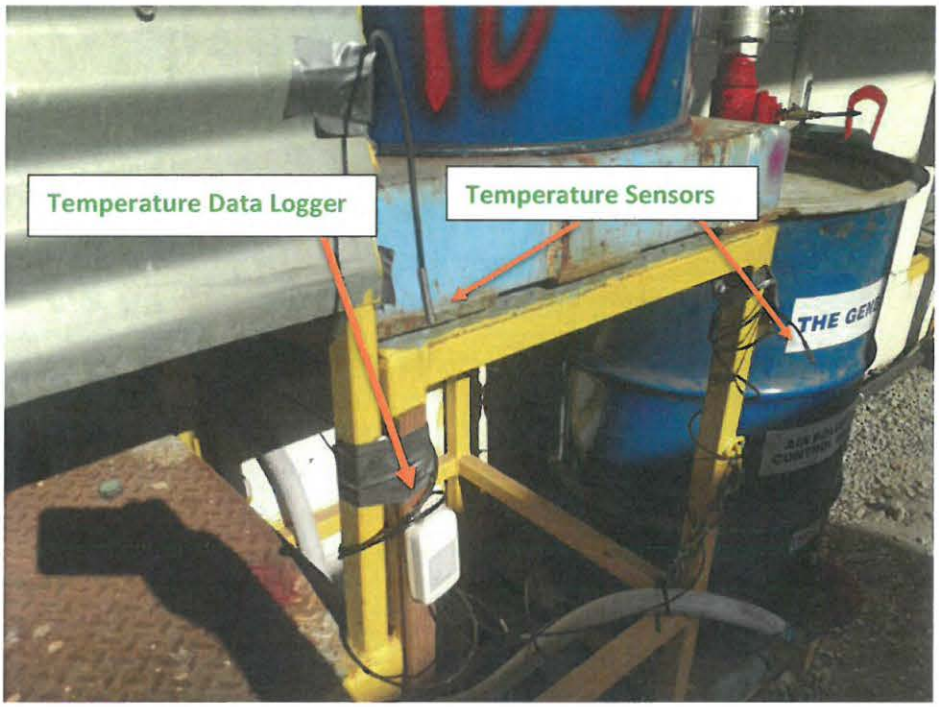

Figure 5. Temperature data logger.

Appendix 2-Tabular Summary of Port Sampling and Analysis

Table 3-Analytical Results

SYRINGE GAS SAMPLES Trical Project #: TC748.2 Determination of Charcoal Scrubber System Breakthrough

Primary Carbon Drum (A) Start Date:	**10/22/2018**
Secondary Carbon Drum (B) Start Date:	**10/12/2018**

											Chloropicrin Concentration Statisitics			**Telone Concentration Statisitics**		
Sample #	Interval	Sample Port	Cylinder Fill Count at Time of Sampling	Filling Station Identification and Formulation Being Filled at Time of Sampling	Date-Time of Sample Collection	Date-Time of Analysis	Time Duration from sampling to analysis	Chloropicrin Concentration (PPMV)	Telone concentration (PPMV)	Sample Port	Chloropicrin Concentration Average	Chloropicrin Concentration Standard Deviation	Chloropicrin Concentration % Standard Deviation	Telone Concentration Average	Telone Concentration Standard Deviation	Telone Concentration % Standard Deviation
7482001	1	A	77	Filling stations C & D Triform 80 EC	10/22/2018 14:00	10/22/18 14:20	0:20:25	6406	1005							
7482004	1	A	77	Filling stations C & D Triform 80 EC	10/22/2018 14:07	10/22/18 14:26	0:19:57	8084	1572		Avg.	Std. Dev.	% Std. Dev.	Avg.	Std. Dev.	% Std. Dev.
7482007	1	A	77	Filling stations C & D Triform 80 EC	10/22/2018 14:10	10/22/18 14:29	0:19:50	8699	1392	A	7730	1187	15%	1323	290	22%
7482002	1	B	77	Filling stations C & D Triform 80 EC	10/22/2018 14:01	10/22/18 14:44	0:43:24	0	4							
7482005	1	B	77	Filling stations C & D Triform 80 EC	10/22/2018 14:08	10/22/18 14:51	0:43:23	0	4		Avg.	Std. Dev.	% Std. Dev.	Avg.	Std. Dev.	% Std. Dev.
7482008	1	B	77	Filling stations C & D Triform 80 EC	10/22/2018 14:12	10/22/18 14:57	0:45:04	26	4	B	9	15	169%	4	0	1%
7482003	1	C	77	Filling stations C & D Triform 80 EC	10/22/2018 14:03	10/22/18 14:48	0:45:19	0	0							
7482006	1	C	77	Filling stations C & D Triform 80 EC	10/22/2018 14:09	10/22/18 14:54	0:45:23	0	0		Avg.	Std. Dev.	% Std. Dev.	Avg.	Std. Dev.	% Std. Dev.
7482009	1	C	77	Filling stations C & D Triform 80 EC	10/22/2018 14:12	10/22/18 15:01	0:49:09	0	0	C	0	0	#DIV/0!	0	0	#DIV/0!
7482010	2	A	280	Filling stations C & D Triform 80 EC	10/24/2018 13:12	10/24/18 13:46	0:34:57	9594	2391							
7482011	2	A	280	Filling stations C & D Triform 80 EC	10/24/2018 13:13	10/24/18 13:50	0:37:56	10237	2548		Avg.	Std. Dev.	% Std. Dev.	Avg.	Std. Dev.	% Std. Dev.
7482012	2	A	280	Filling stations C & D Triform 80 EC	10/24/2018 13:14	10/24/18 13:56	0:42:32	10651	2642	A	10161	532	5%	2527	127	5%
7482013	2	B	280	Filling stations C & D Triform 80 EC	10/24/2018 13:15	10/24/18 13:37	0:22:28	0	4							
7482014	2	B	280	Filling stations C & D Triform 80 EC	10/24/2018 13:16	10/24/18 13:40	0:24:55	0	0		Avg.	Std. Dev.	% Std. Dev.	Avg.	Std. Dev.	% Std. Dev.
7482015	2	B	280	Filling stations C & D Triform 80 EC	10/24/2018 13:17	10/24/18 13:43	0:26:32	14	0	B	5	8	169%	1	2	173%
7482016	2	C	280	Filling stations C & D Triform 80 EC	10/24/2018 13:18	10/24/18 13:27	0:09:22	0	0							
7482017	2	C	280	Filling stations C & D Triform 80 EC	10/24/2018 13:19	10/24/18 13:30	0:11:44	0	0		Avg.	Std. Dev.	% Std. Dev.	Avg.	Std. Dev.	% Std. Dev.
7482018	2	C	280	Filling stations C & D Triform 80 EC	10/24/2018 13:20	10/24/18 13:34	0:14:19	0	0	C	0	0	#DIV/0!	0	0	#DIV/0!
7482019	3	A	416	Filling stations C & D Chloropicrin in Pigs	10/26/2018 10:11	10/26/18 10:54	0:43:22	9705	136							
7482020	3	A	416	Filling stations C & D Chloropicrin in Pigs	10/26/2018 10:12	10/26/18 10:57	0:45:54	10277	142		Avg.	Std. Dev.	% Std. Dev.	Avg.	Std. Dev.	% Std. Dev.
7482021	3	A	416	Filling stations C & D Chloropicrin in Pigs	10/26/2018 10:13	10/26/18 11:02	0:49:06	10754	137	A	10245	525	5%	139	3	2%
7482022	3	B	416	Filling stations C & D Chloropicrin in Pigs	10/26/2018 10:14	10/26/18 10:46	0:32:05	0	0							
7482023	3	B	416	Filling stations C & D Chloropicrin in Pigs	10/26/2018 10:14	10/26/18 10:48	0:34:58	0	0		Avg.	Std. Dev.	% Std. Dev.	Avg.	Std. Dev.	% Std. Dev.
7482024	3	B	416	Filling stations C & D Chloropicrin in Pigs	10/26/2018 10:15	10/26/18 10:51	0:36:30	11	0	B	4	6	167%	0	0	#DIV/0!
7482025	3	C	416	Filling stations C & D Chloropicrin in Pigs	10/26/2018 10:16	10/26/18 10:33	0:17:11	0	0							
7482026	3	C	416	Filling stations C & D Chloropicrin in Pigs	10/26/2018 10:16	10/26/18 10:36	0:20:10	0	0		Avg.	Std. Dev.	% Std. Dev.	Avg.	Std. Dev.	% Std. Dev.
7482027	3	C	416	Filling stations C & D Chloropicrin in Pigs	10/26/2018 10:17	10/26/18 10:38	0:21:52	0	0	C	0	0	#DIV/0!	0	0	#DIV/0!

SYRINGE GAS SAMPLES Trical Project #: TC748.2 Determination of Charcoal Scrubber System Breakthrough

Primary Carbon Drum (A) Start Date:	**10/22/2018**
Secondary Carbon Drum (B) Start Date:	**10/12/2018**

											Chloropicrin Concentration Statisitics			**Telone Concentration Statisitics**		
Sample #	Interval	Sample Port	Cylinder Fill Count at Time of Sampling	Filling Station Identification and Formulation Being Filled at Time of Sampling	Date-Time of Sample Collection	Date-Time of Analysis	Time Duration from sampling to analysis	Chloropicrin Concentration (PPMV)	Telone concentration (PPMV)	Sample Port	Chloropicrin Concentration Average	Chloropicrin Concentration Standard Deviation	Chloropicrin Concentration % Standard Deviation	Telone Concentration Average	Telone Concentration Standard Deviation	Telone Concentration % Standard Deviation
7482028	4	A	456	Filling stations C & D Chloropicrin in Pigs	10/26/2018 13:50	10/26/18 14:47	0:57:54	15567	47							
7482029	4	A	456	Filling stations C & D Chloropicrin in Pigs	10/26/2018 13:51	10/26/18 15:08	1:17:38	16929	43		Avg.	Std. Dev.	% Std. Dev.	Avg.	Std. Dev.	% Std. Dev.
7482030	4	A	456	Filling stations C & D Chloropicrin in Pigs	10/26/2018 13:20	10/26/18 15:14	1:54:21	19204	40	A	17233	1838	11%	43	4	8%
7482031	4	B	456	Filling stations C & D Chloropicrin in Pigs	10/26/2018 13:52	10/26/18 14:25	0:33:39	0	4							
7482032	4	B	456	Filling stations C & D Chloropicrin in Pigs	10/26/2018 13:53	10/26/18 14:29	0:36:50	0	0		Avg.	Std. Dev.	% Std. Dev.	Avg.	Std. Dev.	% Std. Dev.
7482033	4	B	456	Filling stations C & D Chloropicrin in Pigs	10/26/2018 13:53	10/26/18 14:32	0:39:17	11	0	B	4	7	165%	1	2	173%
7482034	4	C	456	Filling stations C & D Chloropicrin in Pigs	10/26/2018 13:55	10/26/18 14:07	0:12:10	0	0							
7482035	4	C	456	Filling stations C & D Chloropicrin in Pigs	10/26/2018 13:55	10/26/18 14:09	0:14:35	0	0		Avg.	Std. Dev.	% Std. Dev.	Avg.	Std. Dev.	% Std. Dev.
7482036	4	C	456	Filling stations C & D Chloropicrin in Pigs	10/26/2018 13:56	10/26/18 14:12	0:16:03	0	0	C	0	0	#DIV/0!	0	0	#DIV/0!
7482037	5	A	533	Filling stations C & D Triform 80EC	10/29/2018 10:08	10/29/18 10:50	0:42:40	7627	1204							
7482038	5	A	533	Filling stations C & D Triform 80EC	10/29/2018 10:09	10/29/18 10:54	0:45:40	7985	1263		Avg.	Std. Dev.	% Std. Dev.	Avg.	Std. Dev.	% Std. Dev.
7482039	5	A	533	Filling stations C & D Triform 80EC	10/29/2018 10:09	10/29/18 10:58	0:49:02	8142	1317	A	7918	264	3%	1261	57	4%
7482040	5	B	533	Filling stations C & D Triform 80EC	10/29/2018 10:10	10/29/18 10:41	0:31:29	0	0							
7482041	5	B	533	Filling stations C & D Triform 80EC	10/29/2018 10:10	10/29/18 10:44	0:34:01	0	0		Avg.	Std. Dev.	% Std. Dev.	Avg.	Std. Dev.	% Std. Dev.
7482042	5	B	533	Filling stations C & D Triform 80EC	10/29/2018 10:11	10/29/18 10:46	0:35:31	0	0	B	0	0	#DIV/0!	0	0	#DIV/0!
7482043	5	C	533	Filling stations C & D Triform 80EC	10/29/2018 10:12	10/29/18 10:25	0:13:13	0	0							
7482044	5	C	533	Filling stations C & D Triform 80EC	10/29/2018 10:13	10/29/18 10:32	0:19:04	0	0		Avg.	Std. Dev.	% Std. Dev.	Avg.	Std. Dev.	% Std. Dev.
7482045	5	C	533	Filling stations C & D Triform 80EC	10/29/2018 10:13	10/29/18 10:34	0:21:31	0	0	C	0	0	#DIV/0!	0	0	#DIV/0!
7482046	6	A	724	Filling stations E & F PicClor 60EC	11/07/2018 15:53	11/7/18 16:23	0:30:56	6395	5559							
7482047	6	A	724	Filling stations E & F PicClor 60EC	11/07/2018 15:53	11/7/18 16:27	0:34:06	6646	6028		Avg.	Std. Dev.	% Std. Dev.	Avg.	Std. Dev.	% Std. Dev.
7482048	6	A	724	Filling stations E & F PicClor 60EC	11/07/2018 15:54	11/7/18 16:29	0:35:48	7319	6325	A	6787	478	7%	5971	386	6%
7482049	6	B	724	Filling stations E & F PicClor 60EC	11/07/2018 15:54	11/7/18 16:15	0:21:22	3	4							
7482050	6	B	724	Filling stations E & F PicClor 60EC	11/07/2018 15:55	11/7/18 16:18	0:23:33	3	4		Avg.	Std. Dev.	% Std. Dev.	Avg.	Std. Dev.	% Std. Dev.
7482051	6	B	724	Filling stations E & F PicClor 60EC	11/07/2018 15:55	11/7/18 16:21	0:26:12	7	0	B	4	2	48%	2	2	87%
7482052	6	C	724	Filling stations E & F PicClor 60EC	11/07/2018 15:56	11/7/18 16:06	0:10:09	0	0							
7482053	6	C	724	Filling stations E & F PicClor 60EC	11/07/2018 15:57	11/7/18 16:08	0:11:38	0	0		Avg.	Std. Dev.	% Std. Dev.	Avg.	Std. Dev.	% Std. Dev.
7482054	6	C	724	Filling stations E & F PicClor 60EC	11/07/2018 15:57	11/7/18 16:12	0:15:51	0	0	C	0	0	#DIV/0!	0	0	#DIV/0!

SYRINGE GAS SAMPLES Trical Project #: TC748.2 Determination of Charcoal Scrubber System Breakthrough

Primary Carbon Drum (A) Start Date:	**10/22/2018**
Secondary Carbon Drum (B) Start Date:	**10/12/2018**

											Chloropicrin Concentration Statisitics			**Telone Concentration Statisitics**		
Sample #	Interval	Sample Port	Cylinder Fill Count at Time of Sampling	Filling Station Identification and Formulation Being Filled at Time of Sampling	Date-Time of Sample Collection	Date-Time of Analysis	Time Duration from sampling to analysis	Chloropicrin Concentration (PPMV)	Telone concentration (PPMV)	Sample Port	Chloropicrin Concentration Average	Chloropicrin Concentration Standard Deviation	Chloropicrin Concentration % Standard Deviation	Telone Concentration Average	Telone Concentration Standard Deviation	Telone Concentration % Standard Deviation
7482055	7	A	811	Filling stations E & F Triclor	11/08/2018 19:01	11/8/18 19:32	0:31:10	2082	39							
7482056	7	A	811	Filling stations E & F Triclor	11/08/2018 19:02	11/8/18 19:36	0:34:33	2909	31		Avg.	Std. Dev.	% Std. Dev.	Avg.	Std. Dev.	% Std. Dev.
7482057	7	A	811	Filling stations E & F Triclor	11/08/2018 19:03	11/8/18 19:39	0:36:17	3259	16	A	2750	605	22%	29	12	42%
7482058	7	B	811	Filling stations E & F Triclor	11/08/2018 19:04	11/8/18 19:22	0:18:18	12	0							
7482059	7	B	811	Filling stations E & F Triclor	11/08/2018 19:05	11/8/18 19:26	0:21:07	14	0		Avg.	Std. Dev.	% Std. Dev.	Avg.	Std. Dev.	% Std. Dev.
7482060	7	B	811	Filling stations E & F Triclor	11/08/2018 19:06	11/8/18 19:28	0:22:52	36	0	B	21	13	64%	0	0	#DIV/0!
7482061	7	C	811	Filling stations E & F Triclor	11/08/2018 19:06	11/8/18 19:14	0:08:14	0	0							
7482062	7	C	811	Filling stations E & F Triclor	11/08/2018 19:07	11/8/18 19:17	0:10:09	0	0		Avg.	Std. Dev.	% Std. Dev.	Avg.	Std. Dev.	% Std. Dev.
7482063	7	C	811	Filling stations E & F Triclor	11/08/2018 19:07	11/8/18 19:19	0:12:39	0	0	C	0	0	#DIV/0!	0	0	#DIV/0!
7482064	8	A	*820*	Filling stations E & F Triclor	11/09/2018 16:10	11/9/18 16:41	0:31:28	5840	1506							
7482065	8	A	*820*	Filling stations E & F Triclor	11/09/2018 16:10	11/9/18 16:45	0:35:11	7017	1727		Avg.	Std. Dev.	% Std. Dev.	Avg.	Std. Dev.	% Std. Dev.
7482066	8	A	*820*	Filling stations E & F Triclor	11/09/2018 16:11	*sample error*	#N/A	N/A	N/A	A	6429	833	13%	1616	156	10%
7482067	8	B	*820*	Filling stations E & F Triclor	11/09/2018 16:12	11/9/18 16:30	0:18:06	368	5							
7482068	8	B	*820*	Filling stations E & F Triclor	11/09/2018 16:12	11/9/18 16:35	0:23:15	355	4		Avg.	Std. Dev.	% Std. Dev.	Avg.	Std. Dev.	% Std. Dev.
7482069	8	B	*820*	Filling stations E & F Triclor	11/09/2018 16:13	11/9/18 16:38	0:25:50	282	4	B	335	46	14%	4	0	5%
7482070	8	C	*820*	Filling stations E & F Triclor	11/09/2018 16:14	11/9/18 16:19	0:05:09	0	0							
7482071	8	C	*820*	Filling stations E & F Triclor	11/09/2018 16:15	11/9/18 16:25	0:10:09	0	0		Avg.	Std. Dev.	% Std. Dev.	Avg.	Std. Dev.	% Std. Dev.
7482072	8	C	*820*	Filling stations E & F Triclor	11/09/2018 16:15	11/9/18 16:27	0:12:36	0	0	C	0	0	#DIV/0!	0	0	#DIV/0!
7482073	9	A	*825*	Filling stations E & F Triclor	11/09/2018 17:00	11/9/18 17:44	0:44:17	8278	113							
7482074	9	A	*825*	Filling stations E & F Triclor	11/09/2018 17:00	11/9/18 17:47	0:47:50	8551	124		Avg.	Std. Dev.	% Std. Dev.	Avg.	Std. Dev.	% Std. Dev.
7482075	9	A	*825*	Filling stations E & F Triclor	11/09/2018 17:01	11/9/18 17:50	0:49:25	8592	118	A	8474	170	2%	118	5	4%
7482076	9	B	*825*	Filling stations E & F Triclor	11/09/2018 17:01	11/9/18 17:28	0:27:30	141	4							
7482077	9	B	*825*	Filling stations E & F Triclor	11/09/2018 17:02	11/9/18 17:32	0:30:31	167	4		Avg.	Std. Dev.	% Std. Dev.	Avg.	Std. Dev.	% Std. Dev.
7482078	9	B	*825*	Filling stations E & F Triclor	11/09/2018 17:02	11/9/18 17:41	0:39:44	132	4	B	147	19	13%	4	0	2%
7482079	9	C	*825*	Filling stations E & F Triclor	11/09/2018 17:03	11/9/18 17:19	0:16:41	0	0							
7482080	9	C	*825*	Filling stations E & F Triclor	11/09/2018 17:04	11/9/18 17:22	0:18:06	3	0		Avg.	Std. Dev.	% Std. Dev.	Avg.	Std. Dev.	% Std. Dev.
7482081	9	C	*825*	Filling stations E & F Triclor	11/09/2018 17:04	11/9/18 17:25	0:21:07	4	0	C	2	2	89%	0	0	#DIV/0!

Table 4-Filling Summary

Filling Plant Cylinder Formulation Fill Records
Number of Cylinders Filled
October 22, 2018 to November 9, 2018

	Product Filled (% Chloropicrin / % Telone)							
Date	**TRICLOR (100/0)**	**TRICLOR EC (95/0)**	**TRIFORM 80 (80/20)**	**TRIFORM 80EC (76/18)**	**PIC-CLOR 60 (60/40)**	**CLOR 60EC (57/38)**	**TELONE (0/100)**	Daily Total
22-Oct			**51**	**81**				**132**
23-Oct	**21**	**4**	**6**	**43**	**86**			**160**
24-Oct		**20**		**67**	**1**		**48**	**136**
25-Oct								**0**
26-Oct		**98**						**98**
27-Oct								**0**
28-Oct								**0**
29-Oct						**106**		**106**
30-Oct	**3**	**1**	**3**	**4**		**1**		**12**
31-Oct	**6**							**6**
1-Nov							**63**	**63**
2-Nov								**0**
3-Nov								**0**
4-Nov								**0**
5-Nov						**11**		**11**
6-Nov								**0**
7-Nov	**17**					**10**		**27**
8-Nov	**60**							**60**
9-Nov	**11**	**1**		**2**				**14**
Formulation Totals	118	124	60	197	87	128	111	
						Total Number of Cylinders Filled:		**825**

Appendix 3-Air Temperature in the Scrubber Area

Figure 3-Air Temperatures at Filling Plant Carbon Adsorption System Location 10/22/18 to 11/09/18

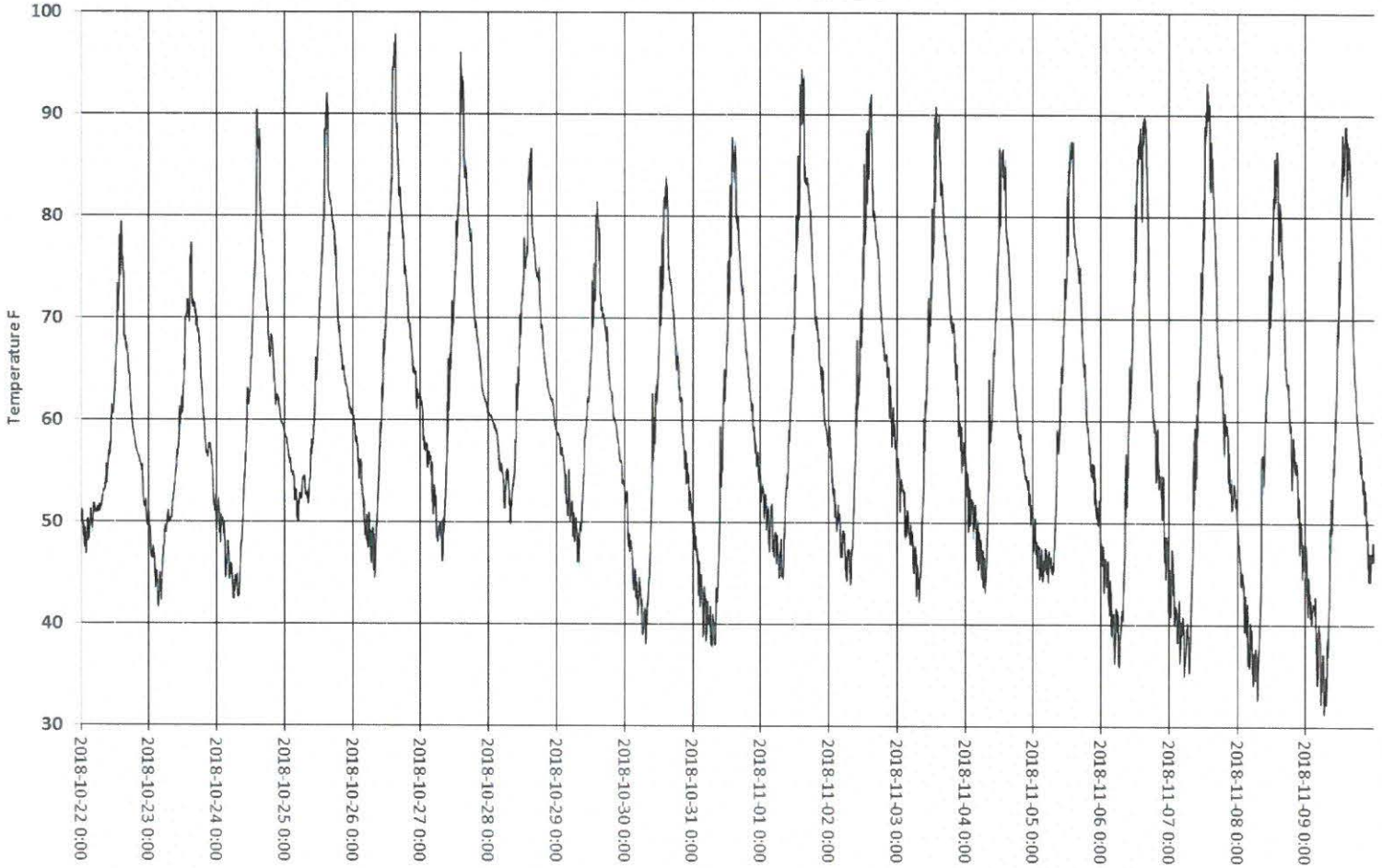

Figure 3-Air Temperatures