San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

FEB 26 2013

Wolfgang Rochert
Rivermaid Trading Co.
P O Box 350
Lodi, CA 95241

Re: Notice of Preliminary Decision - Authority to Construct
Project Number: N-1130200

Dear Mr. Rochert:

Enclosed for your review and comment is the District's analysis of Rivermaid Trading Co's application for an Authority to Construct for a commodity fumigation operation at 6011 E Pine St, Lodi, CA.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. Please submit your written comments on this project within the 30-day public comment period which begins on the date of publication of the public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. George Heinen of Permit Services at (559) 230-5811.

Sincerely,

David Warner
Director of Permit Services

DW:gh

Enclosures

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
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Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585

www.valleyair.org www.healthyairliving.com

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

FEB 26 2013

Mike Tollstrup, Chief
Project Assessment Branch
Stationary Source Division
California Air Resources Board
PO Box 2815
Sacramento, CA 95812-2815

Re: Notice of Preliminary Decision - Authority to Construct
Project Number: N-1130200

Dear Mr. Tollstrup:

Enclosed for your review and comment is the District's analysis of Rivermaid Trading Co's application for an Authority to Construct for a commodity fumigation operation at 6011 E Pine St, Lodi, CA.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. Please submit your written comments on this project within the 30-day public comment period which begins on the date of publication of the public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. George Heinen of Permit Services at (559) 230-5811.

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Stockton Record

NOTICE OF PRELIMINARY DECISION
FOR THE PROPOSED ISSUANCE OF
AN AUTHORITY TO CONSTRUCT

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Unified Air Pollution Control District solicits public comment on the proposed issuance of an Authority to Construct to Rivermaid Trading Co for a commodity fumigation operation at 6011 E Pine St, Lodi, CA.

The analysis of the regulatory basis for this proposed action, Project N-1130200, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and the District office at the address below. Written comments on this project must be submitted within 30 days of the publication date of this notice to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, 1990 E GETTYSBURG AVE, FRESNO, CA 93726-02441990 EAST GETTYSBURG AVENUE, FRESNO, CA 93726.**

San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

New Methyl Bromide Fumigation Chamber

Facility Name:	Rivermaid Trading Co.	Date:	February 12, 2013
Mailing Address:	P.O. Box 350 Lodi, CA 95241	Engineer:	G. Heinen
		Lead Engineer:	Chay Thao
Contact Person:	Wolfgang Rochert		
Telephone:	209-810-8594		
Fax:	209-369-5465		
E-Mail:	Wolfgang@rivermaid.com		
Application #(s):	N-8844-1-0		
Project #:	N-1130200		
Deemed Complete:	February 11, 2013		

I. Proposal

Rivermaid Trading Co. has requested an Authority to Construct (ATC) permit for the installation of a new fumigation chamber using methyl bromide (CH_3Br) to fumigate cherries. The draft ATC is included in Appendix A.

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice

Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

III. Project Location

The facility is located at 6011 E Pine St in Lodi, CA. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

The primary business is processing and packing agricultural commodities. The facility receives cherries and stores them onsite until they can be processed. During the storage process, the cherries are fumigated to control pests. The cherries will be fumigated with gaseous CH_3Br.

The fumigation chamber is 40'L X 25' W X 30' H. The cherries are placed inside the chamber, the doors are sealed, and the fumigant is introduced. After fumigation, the chambers are vented directly to atmosphere until fumigant levels are low enough to safely allow workers to remove the product.

Fumigation takes place primarily in the first and second quarters, depending on the harvest time.

V. Equipment Listing

N-8844-1-0: METHYL BROMIDE FUMIGATION OPERATION WITH ONE CHAMBER

VI. Emission Control Technology Evaluation

The fumigation chamber is vented directly to the atmosphere with no add-on control technology. 100% of the fumigant is assumed to be emitted.

VII. General Calculations

A. Assumptions

Methyl Bromide (CH_3Br)

- All methyl bromide is vented to the atmosphere; no fumigant is absorbed by the fruit.
- Maximum methyl bromide usage = 112 lb/day and 5,040 lb/year (per applicant)

B. Emission Factors

Methyl Bromide (CH_3Br) is considered a VOC

- 1 lb of CH_3Br = 1 lb-VOC

C. Calculations

1. Pre-Project Potential to Emit (PE1)

Since this is a new emissions unit, PE1 = 0 for all pollutants.

2. Post Project Potential to Emit (PE2)

Daily:

VOC (lb/day) = CH_3Br (lb/day)
VOC lb/day = 112.0 lb/day

Annual:

VOC (lb/yr) = CH_3Br (lb/yr)
VOC lb/yr = 5,040 lb/yr

3. Pre-Project Stationary Source Potential to Emit (SSPE1)

Since this is a new facility, there are no valid ATCs, PTOs, or ERCs at the Stationary Source; therefore, the SSPE1 is equal to zero.

4. Post Project Stationary Source Potential to Emit (SSPE2)

Pursuant to District Rule 2201, the SSPE2 is the PE from all units with valid ATCs or PTOs at the Stationary Source and the quantity of ERCs which have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site.

SSPE2 (lb/year)					
Permit Unit	NO_X	SO_X	PM_{10}	CO	VOC
N-8844-1-0	0	0	0	0	5,040
SSPE2	0	0	0	0	5,040

5. Major Source Determination

Rule 2201 Major Source Determination:

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. For the purposes of determining Major Source status the following shall not be included:

- any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165

Rule 2201 Major Source Determination (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
Facility emissions pre-project	0	0	0	0	0
Facility emissions post project	0	0	0	0	5,040
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No

As seen in the table above, the facility is not an existing Major Source and is not becoming a Major Source as a result of this project.

Rule 2410 Major Source Determination:

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). Therefore the following PSD Major Source thresholds are applicable.

PSD Major Source Determination (tons/year)							
	NO2	VOC	SO2	CO	PM	PM10	CO2e
Estimated Facility PE before Project Increase	0	0	0	0	0	0	0
PSD Major Source Thresholds	250	250	250	250	250	250	100,000
PSD Major Source ? (Y/N)	No	No	No	No	No	No	No

As shown above, the facility is not an existing Major Source for PSD for at least one pollutant. Therefore the facility is not an existing Major Source for PSD.

6. Baseline Emissions (BE)

The BE calculation (in lbs/year) is performed pollutant-by-pollutant for each unit within the project to calculate the QNEC, and if applicable, to determine the amount of offsets required.

Pursuant to District Rule 2201, BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to District Rule 2201.

As shown in Section VII.C.5 above, the facility is not a Major Source for any pollutant.

Since this is a new emissions unit, BE = PE1 = 0 for all pollutants.

7. SB 288 Major Modification

SB 288 Major Modification is defined in 40 CFR Part 51.165 as "any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act."

Since this facility is not a Major Source for any of the pollutants addressed in this project, this project does not constitute an SB 288 major modification.

8. Federal Major Modification

District Rule 2201 states that a Federal Major Modification is the same as a "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.

Since this source is not included in the 28 specific source categories specified in 40 CFR 51.165, the increases in fugitive emissions are not included in the Federal Major Modification determination.

Since this facility is not a Major Source for any pollutants, this project does not constitute a Federal Major Modification. Additionally, since the facility is not a Major Source for PM_{10} (140,000 lb/year), it is not a Major Source for PM2.5 (200,000 lb/year).

9. Rule 2410 – Prevention of Significant Deterioration (PSD) Applicability Determination

Rule 2410 applies to pollutants for which the District is in attainment or for unclasssified, pollutants. The pollutants addressed in the PSD applicability determination are listed as follows:

- NO2 (as a primary pollutant)
- SO2 (as a primary pollutant)
- CO
- PM
- PM10
- Greenhouse gases (GHG): CO2, N2O, CH4, HFCs, PFCs, and SF6

The first step of this PSD evaluation consists of determining whether the facility is an existing PSD Major Source or not (See Section VII.C.5 of this document).

In the case the facility is new source, the second step of the PSD evaluation is to determine if this new facility will become a new PSD Major Source as a result of the project and if so, to determine which pollutant will result in a PSD significant increase.

I. Potential to Emit for New or Modified Emission Units vs PSD Major Source Thresholds

As a screening tool, the project potential to emit from all new and modified units is compared to the PSD Major Source threshold, and if total project potential to emit from all new and modified units is below this threshold, no futher analysis will be needed.

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). Therefore the following PSD Major Source thresholds are applicable.

PSD Major Source Determination: Potential to Emit (tons/year)							
	NO2	VOC	SO2	CO	PM	PM10	CO2e
Total PE from New and Modified Units	0	2.5	0	0	0	0	0
PSD Major Source threshold	250	250	250	250	250	250	100,000
New PSD Major Source?	No	No	No	No	No	No	No

As shown in the table above, the project potential to emit, by itself, does not exceed any of the PSD Major Source thresholds. Therefore Rule 2410 is not applicable and no further discussion is required.

10. Quarterly Net Emissions Change (QNEC)

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen. Detailed QNEC calculations are included in Appendix B.

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless specifically exempted by Rule 2201, BACT shall be required for the following actions*:

a. Any new emissions unit with a potential to emit exceeding two pounds per day,
b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
d. Any new or modified emissions unit, in a stationary source project, which results in an SB 288 Major Modification or a Federal Major Modification, as defined by the rule.

*Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

a. New emissions units – PE > 2 lb/day

As seen in Section VII.C.2 above, the applicant is proposing to install a fumigation chamber with a PE greater than 2 lb/day for VOC; therefore BACT is triggered for VOC.

b. Relocation of emissions units – PE > 2 lb/day

As discussed in Section I above, there are no emissions units being relocated from one stationary source to another; therefore BACT is not triggered.

c. Modification of emissions units – AIPE > 2 lb/day

As discussed in Section I above, there are no modified emissions units associated with this project; therefore BACT is not triggered.

d. SB 288/Federal Major Modification

As discussed in Section VII.C.7 above, this project does not constitute an SB 288 and/or Federal Major Modification for NO_X emissions; therefore BACT is not triggered for major modification purposes.

2. BACT Guideline

BACT Guideline 5.4.12, (Appendix C), applies to operation involving a "Commodity Methyl Bromide Fumigation Chamber".

3. Top-Down BACT Analysis

Per District Policy APR 1305, Section IX, "A top-down BACT analysis shall be performed as a part of the Application Review for each application subject to the BACT requirements pursuant to the District's NSR Rule for source categories or classes covered in the BACT Clearinghouse, relevant information under each of the following steps may be simply cited from the Clearinghouse without further analysis."

Pursuant to the attached Top-Down BACT Analysis, (Appendix C), BACT is satisfied, with:

VOC: Minimize use of fumigant (i.e. use no more than product specifications recommend); and air-tight fumigation chamber

The following permit condition must be included:

- The fumigation chamber must be maintained in a sealed and air-tight condition when in operation and fumigation shall be minimized (i.e. no more than the product specification recommends). [District Rule 2201] N

B. Offsets

1. Offset Applicability

Offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The SSPE2 is compared to the offset thresholds in the following table.

Offset Determination (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
SSPE2	0	0	0	0	5,040
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	No	No	No	No	No

2. Quantity of Offsets Required

As seen above, the SSPE2 is not greater than the offset thresholds for all the pollutants; therefore offset calculations are not necessary and offsets will not be required for this project.

C. Public Notification

1. Applicability

Public noticing is required for:
a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
c. Any project which results in the offset thresholds being surpassed, and/or
d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.

a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications

New Major Sources are new facilities, which are also Major Sources. As shown in Section VII.C.5 above, the SSPE2 is not greater than the Major Source threshold for any pollutant. Therefore, public noticing is not required for this project for new Major Source purposes.

b. PE > 100 lb/day

Applications which include a new emissions unit with a PE greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements.

The PE2 for this new unit is compared to the daily PE Public Notice thresholds in the following table:

PE > 100 lb/day Public Notice Thresholds			
Pollutant	PE2 (lb/day)	Public Notice Threshold	Public Notice Triggered?
NO_X	0	100 lb/day	No
SO_X	0	100 lb/day	No
PM_{10}	0	100 lb/day	No
CO	0	100 lb/day	No
VOC	112	100 lb/day	**Yes**

Therefore, public noticing **is** required for PE > 100 lb/day purposes.

c. Offset Threshold

The SSPE1 and SSPE2 are compared to the offset thresholds in the following table.

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO_X	0	0	20,000 lb/year	No
SO_X	0	0	54,750 lb/year	No
PM_{10}	0	0	29,200 lb/year	No
CO	0	0	200,000 lb/year	No
VOC	0	5,040	20,000 lb/year	No

As detailed above, there were no thresholds surpassed with this project; therefore public noticing is not required for offset purposes.

d. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a SSIPE of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE = SSPE2 – SSPE1. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table.

SSIPE Public Notice Thresholds					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO_x	0	0	0	20,000 lb/year	No
SO_x	0	0	0	20,000 lb/year	No
PM_{10}	0	0	0	20,000 lb/year	No
CO	0	0	0	20,000 lb/year	No
VOC	5,040	0	5,040	20,000 lb/year	No

As demonstrated above, the SSIPEs for all pollutants were less than 20,000 lb/year; therefore public noticing for SSIPE purposes is not required.

2. Public Notice Action

As discussed above, public noticing is required for this project for VOC emissions in excess of 100 lb/day. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.

D. Daily Emission Limits (DELs)

DELs and other enforceable conditions are required by Rule 2201 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. The DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT. The following conditions will appear on the permit:

- Only methyl bromide shall be used as a fumigant. [District Rule 2201]
- Daily emissions of VOC shall not exceed 112 lb, equivalent to the use of 112 lb methyl bromide per day. [District Rule 2201]
- Annual emissions of VOC shall not exceed 5,040 lb, equivalent to the use of 5,040 lb methyl bromide per year. [District Rule 2201]

E. Compliance Assurance

1. Source Testing

Pursuant to District Policy APR 1705, source testing is not required to demonstrate compliance with Rule 2201.

2. Monitoring

No monitoring is required to demonstrate compliance with Rule 2201.

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201. The following conditions will appear on the permit:

- Permittee shall maintain daily and annual records of the amount of methyl bromide used (in pounds). [District Rule 2201]

- Records shall be maintained, retained on-site for a period of at least five years and made available for District inspection upon request. [District Rule 4305]

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

Rule 2520 Federally Mandated Operating Permits

Since this facility's potential emissions do not exceed any Major Source thresholds of Rule 2201, this facility is not a Major Source, and Rule 2520 does not apply.

Rule 4001 New Source Performance Standards (NSPS)

This rule incorporates NSPS from Part 60, Chapter 1, Title 40, Code of Federal Regulations (CFR); and applies to all new sources of air pollution and modifications of existing sources of air pollution listed in 40 CFR Part 60. However, no subparts of 40 CFR Part 60 apply to commodity fumigation operations.

Rule 4002 National Emission Standards for Hazardous Air Pollutants (NESHAPs)

This rule incorporates NESHAPs from Part 61, Chapter I, Subchapter C, Title 40, CFR and the NESHAPs from Part 63, Chapter I, Subchapter C, Title 40, CFR; and applies to all sources of hazardous air pollution listed in 40 CFR Part 61 or 40 CFR Part 63. However, no subparts of 40 CFR Part 61 or 40 CFR Part 63 apply to commodity fumigation operations.

Rule 4101 Visible Emissions

Per Section 5.0, no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity). Based on past inspections of similar operations, compliance is expected. The following condition will be added to the permit to assure compliance with this rule.

- {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]

Rule 4102 Nuisance

Rule 4102 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained. The following condition will be added to the permit to further assure compliance with this rule.

- {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

California Health & Safety Code 41700 (Health Risk Assessment)

District Policy APR 1905 – *Risk Management Policy for Permitting New and Modified Sources* specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite.

An HRA is not required for a project with a total facility prioritization score of less than one. According to the Technical Services Memo for this project (**Appendix D**), the total facility prioritization score including this project was greater than one. Therefore, an HRA was required to determine the short-term acute and long-term chronic exposure from this project.

The cancer risk for this project is shown below:

HRA Summary		
Unit	Cancer Risk	T-BACT Required
N-8844-1-0	N/A per million	No

To ensure that human health risks will not exceed District allowable levels; the following permit condition must be included:

- {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102] N

Discussion of T-BACT

BACT for toxic emission control (T-BACT) is required if the cancer risk exceeds one in one million. As demonstrated above, T-BACT is not required for this project because the HRA indicates that the risk is not above the District's thresholds for triggering T-BACT requirements; therefore, compliance with the District's Risk Management Policy is expected.

California Health & Safety Code 42301.6 (School Notice)

The District has verified that this site is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

California Environmental Quality Act (CEQA)

CEQA requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The District adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities;
- Identify the ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

Greenhouse Gas (GHG) Significance Determination

Methyl Bromide is not a GHG. The District's engineering evaluation (this document) demonstrates that the project would not result in an increase in project specific greenhouse gas emissions. The District therefore concludes that the project would have a less than cumulatively significant impact on global climate change.

District CEQA Findings

The District is a Lead Agency for the project because of its discretionary approval power over the project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CEQA Guidelines §15381). The District's engineering evaluation of the project (this document) demonstrates that compliance with District rules and permit conditions would reduce Stationary Source emissions from the project to levels below the District's significance thresholds for criteria pollutants. The District has determined that no additional findings are required (CEQA Guidelines §15096(h)).

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue ATC N-8844-1-0 subject to the permit conditions on the attached draft ATC in **Appendix A**.

X. Billing Information

Annual Permit Fees			
Permit Number	**Fee Schedule**	**Fee Description**	**Annual Fee**
N-8844-1-0	3020-10	Miscellaneous	$105.00

Appendixes
A: Draft ATC
B: Quarterly Net Emissions Change
C: BACT Analysis
D: Risk Management Review Summary

Appendix A
Draft ATC

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-8844-1-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: RIVERMAID TRADING, CO.
MAILING ADDRESS: PO BOX 350
LODI, CA 95241

LOCATION: 6011 EAST PINE
LODI, CA 95241

EQUIPMENT DESCRIPTION:
METHYL BROMIDE FUMIGATION OPERATION WITH ONE CHAMBER,

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. Only methyl bromide shall be used as a fumigant. [District Rules 2201 and 4102]
4. The fumigation chamber must be maintained in a sealed and air-tight condition when in operation and fumigation shall be minimized (i.e. no more than the product specification recommends). [District Rule 2201]
5. Daily emissions of VOC shall not exceed 112 lb, equivalent to the use of 112 lb methyl bromide per day. [District Rule 2201]
6. Annual emissions of VOC shall not exceed 5,040 lb, equivalent to the use of 5,040 lb methyl bromide per year. [District Rule 2201]
7. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
8. Permittee shall maintain daily and annual records of the amount of methyl bromide used (in pounds). [District Rule 2201]
9. {3246} All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rule 1070]

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services
N-8844-1-0 : Feb 25 2013 2:58PM – HEINENG : Joint Inspection NOT Required

Appendix B
Quarterly Net Emissions Change (QNEC)

Quarterly Net Emissions Change (QNEC)

The Quarterly Net Emissions Change is used to complete the emission profile screen for the District's PAS database. This is a seasonal source with the majority of the emissions occurring in the first and second quarter, therefore the QNEC shall be calculated as follows:

QNEC = (PE2 - PE1)/2, where:

QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.
PE2 = Post Project Potential to Emit for each emissions unit, lb/year.
PE1 = 0 lb/year, since this is a new source

Quarterly NEC [QNEC]		
	PE2 (lb/year)	QNEC (lb/qtr)
NO_X	0	0
SO_X	0	0
PM_{10}	5,040	2,520
CO	0	0
VOC	0	0

Appendix C
BACT Analysis

Best Available Control Technology (BACT) Guideline 5.4.12
Last Update: 6/25/2008

Commodity Methyl Bromide Fumigation Chamber

Pollutant	Achieved in Practice or in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Minimize use of fumigant (i.e. use no more than product specifications recommend); and air-tight fumigation chamber	1. 99% control (chemical scrubbing) 2. 98% control (thermal or catalytic reduction) 3. 95% control (carbon adsorption) 4. 80% control (condensation refrigeration system)	

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in s a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

This is a Summary Page for this Class of Source.

BACT Analysis for VOC Emissions:

BACT Analysis for VOC Emissions

Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse guideline 5.4.12, identifies achieved in practice and technologically feasible BACT for Commodity Methyl Bromide Fumigation Chambers as follows

1) Chemical scrubbing system – 99% (Technologically Feasible)
2) Thermal and catalytic reduction – 98% (Technologically Feasible)
3) Carbon adsorption – 95% (Technologically Feasible)
4) Condensation using a refrigeration system – 80% (Technologically Feasible)
5) Use of air-tight fumigation chambers and minimized use of fumigant (i. e. use no more than product specification recommend). (Achieved in Practice)

Step 2 - Eliminate technologically infeasible options

Thermal and catalytic reduction

Thermal and catalytic reduction uses heat and a catalyst to chemically breakdown a VOC into a less reactive compound such as water and elemental nitrogen. When methyl bromide is reduced, however, the process results in the generation of hydrogen bromide. Hydrogen bromide is listed as a hazardous waste under the Resource Conservation and Recovery Act (RCRA), requiring the use of additional control system(s) to prevent these secondary emissions.

Thus, thermal and catalytic reduction is considered to be technologically infeasible for this operation and is eliminated from further consideration.

All other options identified above are considered to be technologically feasible.

Step 3 - Rank remaining options by control effectiveness

1) Chemical scrubbing system – 99% (Technologically Feasible)
2) Carbon adsorption – 95% (Technologically Feasible)
3) Condensation using a refrigeration system – 80% (Technologically Feasible)
4) Use of air-tight fumigation chambers and minimized use of fumigant (i. e. use no more than product specification recommend). (Achieved in Practice)

Step 4 - Cost Effectiveness Analysis

1) Chemical scrubbing system

Chemical scrubbing of methyl bromide (CH_3Br) involves using a packed tower with sodium hydroxide (NaOH). The reaction that occurs in the packed tower with 10 pH NaOH is given by the following formula:

$CH_3Br + NaOH \Rightarrow CH_3OH$ (methanol) + NaBr

Stochiometrically, one mole of NaOH (MW = 40) is required to react with one mole of methyl bromide (MW = 95) or 0.42 lb NaOH per lb of CH_3Br. The NaOH is an aqueous solution, which is mostly water. The concentration of NaOH is found in the following manner:

The pH value is defined as:

$pH = -\log[H^+] = 10$
$[H^+] = 1.0\ E\text{-}10$

The concentration of NaOH is equal to the concentration of OH ions in a scrubber solution of water and NaOH:

$[OH] = \{K_w \times [H_2O]\} \div [H^+]$

where $K_w = 1.0E\text{-}14$ and $[H_2O] = 1.0$ for a very dilute solution, thus:

$[OH] = \{1.0E\text{-}14 \times 1\} \div 1.0\ E\text{-}10$
$= 1.0\ E\text{-}4$ moles/liter

NaOH has a molecular weight of 40 grams/liter so the concentration at a pH value of 10 is:

NaOH = 40 gram/mol x 1E-4 mol/l x 1 lb/453.6 gram x 3.7854 l/gal
= 3.3E-5 lb-NaOH/gal

Based on the stochiometric formula, the minimum amount of aqueous solution needed for the calculated amount of CH_3Br emissions per year is:

Aqueous solution = 5,040 lb-CH_3Br/yr x 0.42 lb-NaOH/lb-CH_3Br
= 2,117 lb-NaOH/yr

Gallons of NaOH/yr = 2,117 lb-NaOH/yr ÷ 3.3E-5 lb-NaOH/gal
= 64,150,000 gal-NaOH/yr

The depleted solution must be disposed of as a hazardous material. A 2010 estimate from Van Waters and Rogers indicated the disposal cost for bulk quantities of this liquid to be $3.75/gallon plus freight charges. For the amount of solution required:

Annual disposal cost = 64,150,000 gal-NaOH/yr x 3.75/gallon
= $241,000,000 dollars per year.

Controlled Cost per ton of emissions:

As shown above, the amount of reduction from a chemical scrubbing system is expected to be:

VOCs controlled = 5,040 lb-VOC/yr x 0.99 x 1 ton/2,000 lb
= **2.5 ton-VOC/yr**

Cost/ton of emissions ($/ton) = $241,000,000 $/yr ÷ 2.5 ton-VOC/yr
= $96,400,000

Cost/ton of emission = $96,400,000**/ton-VOC**

The VOC cost effectiveness threshold is $17,500 per ton (per BACT Policy addendum dated 8/14/2008). Since the calculated controlled cost exceeds the cost effective value of $17,500/ton for VOC, a chemical scrubbing system is deemed not cost effective for this project.

2) Carbon adsorption

An SDUPA study indicated that CH_3Br to carbon adsorption ratio is about 0.3 at 70 °F and 1.0 psia. The study used a three-bed, parallel system, which rotates between beds as the concentration changed. A single bed would become saturated and begin to emit CH_3Br during the later stages of the chamber venting period when the CH_3Br exhaust concentrations drop. The size of a three-bed system to control one ton of CH_3Br is:

System size = 5,040 lb Ch_3Br/yr x (1 lb C ÷ 0.3 lb CH_3Br)
= 16,800 lb-C required/year

Based on a 2010 phone conversation with a supplier of activated carbon, 4' x 8' mesh activated carbon is $1.46/lb plus tax and shipping. Using this price, the cost of carbon for this system would be:

Carbon cost = $1.46/lb-carbon x 16,800 lb carbon/ton of CH_3Br controlled
= $24,528/year

The cost of a carbon adsorption system sized for a typical 14,000 scfm enclosed automotive spray booth is estimated using the calculations from Chapter 12 of Air Pollution Control - A Design Approach by C. David Cooper and F.C. Alley.

Capital Cost:

The purchase price for a carbon-steel package adsorber, complete with fan, instrumentation and piping can be estimated from the following relationship equation:

$$PEC (\$) = 50,000 + 0.277M_c^{1.200}$$

Where PEC = Purchase price in 1977 dollars
M_c = mass of carbon in the system

$PEC = 50,000 + (0.277)(100,000^{1.200})$
$= 50,000 + (0.277)(1,000,000)$
$= 50,000 + (277,000)$

PEC = $327,000

Total Capital Investment:

The total capital investment is equal to 1.25 times the purchase cost. The sales tax and freight charges total 8% of the base equipment cost. Finally, adjusting from 1977 dollars to 2013 dollars, multiply by 2.75% inflation/yr = 2.66.

Therefore,

TCI (2013 dollars) = ($327,000) x (1.25) x (1.08) x 2.66) = $1,174,257

According to the six-tenths rule, the ratio between the increase in equipment cost (*C*) and the increase in capacity (*V*) given by $C_1/C_2 = (V_1/V_2)^{0.6}$. This rule will be used to scale the equipment cost from a typical 14,000 scfm to the proposed 5,300 scfm fumigation chamber:

$TCI(5,300\ scf) = TCI(14,000\ scf) \times (5,300/14000)^{0.6}$
$= \$1,174,257 \times 0.558$
$= \$655,235$

Pursuant to the District's BACT Policy section X, (Revised 11/9/99), the annual cost of installing and maintaining the thermal oxidizer will be calculated as follows. The installed cost will be spread over the expected life of the carbon adsorption system which is estimated at 10 years and using the capital recovery equation (Equation 1). A 10% interest rate is assumed in this equation and the assumption will be made that the equipment has no salvage value at the end of the ten-year cycle.

A = Annualized total capital investment cost

where
P = present value of capital
CRF = capital recovery factor = $i(i+1)^n / (i+1)^n-1$
i = interest rate = 10%
n = useful lifetime of equipment in years = 10

$CRF = 0.1(0.1 +1)^{10} / (1+0.1)^{10} - 1 =$ **0.1627**

A = P x CRF

So: A = $665,235 x 0.1627
= $108,233/yr

Operating Cost (Annualized Equipment Cost and Carbon Replacement Cost):

Cost of carbon = $24,528/yr
Annualized cost of equipment = $108,233/yr
Total annual cost = $24,528/yr + $108,233/yr = **$132,761/yr**

This is the cost of purchasing carbon for the carbon adsorption system and the capital cost of the equipment itself. Additional energy costs for instrumentation and process equipment and labor costs exist but will not be evaluated.

Controlled Cost per ton of emissions:

As shown above, the amount of reduction from a carbon adsorption system is expected to be:

VOCs controlled = 5,040 lb-VOC/yr x 0.95 x 1 ton/2,000 lb
= **2.4 ton-VOC/yr**

Cost/ton of emissions ($/ton) = $132,761/yr ÷ 2.4 ton-VOC/yr
= $55,317

Cost/ton of emission = $55,317/ton-VOC

The VOC cost effectiveness threshold is $17,500 per ton (per BACT Policy addendum dated 8/14/2008). Since the calculated controlled cost exceeds the cost effective value of $17,500/ton for VOC, a carbon adsorption system is deemed not cost effective for this project.

3) Condensation using a refrigeration system

This process requires the CH_3Br and exhaust air to be cooled from the typical chamber exhaust temperature of 70° F to the CH_3Br dew point of 35° F and then cooled to a final temperature of 32 °F (491.7°R).

An SDUPA study estimated the cost for electricity to run a compressor at $44,000/cycle, assuming $0.10/kwh and 3 x 78,000 ft^2 (234,000 ft^2) of air chilled from 70 °F to 35 °F.

The chamber has a fan rated at 3.0 hp, with a total exhaust rating of 5,300 cfm, which is equivalent to 159,000 ft^2 in 30 minutes.

Adjusting the cost calculated in the SDUPA study to reflect the smaller chamber:

Total cost = $44,000/cycle x (159,000 ft^2 ÷ 234,000 ft^2)
Total cost = $29,897/cycle

Adjusting the cost calculated in the SDUPA study to reflect $0.12/kWhr results in an electrical compressor cost as follows:

Total cost = $29,897/cycle x ($0.12/kwh ÷ $0.10/kwh)
Total cost = $35,876/cycle

For worse case scenario there is one cycle run per day with the maximum daily fumigant usage of 112 lb-CH_3Br. Assuming that the compressor is run for the first 30 minutes of the exhaust cycle to recover 80% of the 112 lb CH_3Br exhausted, the control captures 89.6 lb/cycle. The cost per ton of the electricity to run the compressor is therefore:

Electrical cost = \$35,876/cycle x 1 cycle/89.6 lb x 2,000 lb/ton
= \$800,804/ton

The VOC cost effectiveness threshold is \$17,500 per ton (per BACT Policy addendum dated 8/14/2008). Since the calculated controlled cost exceeds the cost effective value of \$17,500/ton for VOC, a condensation using a refrigeration system is deemed not cost effective for this project.

Step 5 - Select BACT

The only remaining control method is achieved in practice BACT which is the use of air-tight fumigation chambers and minimized use of fumigant (i. e. use no more than product specification recommend). The facility has proposed to use of air-tight fumigation chambers and minimized use of fumigant (i. e. use no more than product specification recommend); therefore, BACT is satisfied.

Appendix D:
Risk Management Review Summary

San Joaquin Valley Air Pollution Control District
Risk Management Review

To:	G. Heinen – Permit Services
From:	Kyle Melching – Technical Services
Date:	February 11, 2012
Facility Name:	Rivermaid Trading
Location:	6011 Pine St., Lodi
Application #(s):	N-8844-1-0
Project #:	N-1130200

A. RMR SUMMARY

Categories	Fumigation Operation (Unit 1-0)	Project Totals	Facility Totals
Prioritization Score	11.7	11.7	>1
Acute Hazard Index	0.15	0.15	0.15
Chronic Hazard Index	0.1	0.1	0.1
Maximum Individual Cancer Risk	N/A[1]	0.00	0.00
T-BACT Required?	**No**		
Special Permit Conditions?	**Yes**		

[1]The Maximum Individual Cancer Risk was not calculated since there are no risk factors associated with any of the Hazardous Air Pollutants (HAPs) under analysis.

Proposed Permit Conditions

To ensure that human health risks will not exceed District allowable levels; the following permit conditions must be included for:

Unit 1-0

1. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102] N

B. RMR REPORT

I. Project Description

Technical Services received a request on February 11, 2013, to perform a Risk Management Review and Ambient Air Quality Analysis (AAQA) for the installation of a new methyl bromide fumigation chamber. An AAQA, only monitors NO_x, SO_x, CO, PM_{10}, and $PM_{2.5}$ emissions. The project contains only VOC emissions; therefore, an AAQA will not be conducted

II. Analysis

Toxic emissions from the project were calculated after reviewing process rates for Methyl Bromide provided by the engineer. In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905-1, March 2, 2001), risks from the proposed project were prioritized using the procedures in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEART's database. The prioritization score for the proposed project was greater than 1.0 (see RMR Summary Table). Therefore, a refined Health Risk Assessment was required and performed for the project. AERMOD was used with point source parameters outlined below and concatenated 5-year meteorological data from Stockton to determine maximum dispersion factors at the nearest residential and business receptors. The dispersion factors were input into the HARP model to calculate the Chronic and Acute Hazard Indices and the Carcinogenic Risk.

The following parameters were used for the review:

Analysis Parameters (Unit 1-0)			
Source Type	Point	**Closest Receptor (m)**	83
Stack Height (m)	12.8	**Type of Receptor**	Resident
Stack Diameter (m)	0.61	**Location Type**	Rural
Stack Gas Temperature (K)	297	**Stack Gas Velocity (m/sec)**	8.57
Methyl Bromide Emissions (lb/hr)	14	**Methyl Bromide Emissions (lb/yr)**	3400

III. Conclusions

There is no Cancer Risk associated with Methyl Bromide; and the Acute and Chronic Hazard Index is below 1.0. In accordance with the District's Risk Management Policy, the unit is approved **without** Toxic Best Available Control Technology (T-BACT).

To ensure that human health risks will not exceed District allowable levels; the permit conditions listed on Page 1 of this report must be included for this permit unit.

These conclusions are based on the data provided by the applicant and the project engineer. Therefore, this analysis is valid only as long as the proposed data and parameters do not change.