



OCT 03 2011

Stanley Creelman
Mid-Valley Cotton Grower, Inc
P O BOX 149
Tulare, CA 93275

Re: Notice of Preliminary Decision - Authority to Construct
Project Number: S-1112063

Dear Mr. Creelman:

Enclosed for your review and comment is the District's analysis of Mid-Valley Cotton Grower, Inc's application for an Authority to Construct for the reopening of a cotton gin, at 645 N Hamlin in Tipon, 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. Thom Maslowski of Permit Services at (559) 230-5906.

Sincerely,

David Warner
Director of Permit Services

DW:TM

Enclosures



OCT 03 2011

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: S-1112063

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Sincerely,

David Warner
Director of Permit Services

DW:TM

Enclosure

Visalia Times-Delta
Visalia Times-Delta

**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 Authority to Construct to Mid-Valley Cotton Grower, Inc for the reopening of a cotton gin, at 645 N Hamlin in Tipton, CA.

The analysis of the regulatory basis for this proposed action, Project #S-1112063, 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 EAST GETTYSBURG AVENUE, FRESNO, CA 93726.**

**San Joaquin Valley Air Pollution Control District
Authority to Construct
Application Review
Cotton Gin**

Facility Name:	Mid-Valley Cotton Growers, Inc	Date:	September 22, 2011
Mailing Address:	P O Box 149 Tulare, CA 93275	Engineer:	Thom Maslowski
Contact Person:	Stanley Creelman	Lead Engineer:	Joven Refuerzo
Telephone:	(559) 686-2823		
Application #(s):	S-193-2-0		
Project #:	S-1112063		
Deemed Complete:	June 14, 2011		

I. Proposal

Mid Valley Cotton Growers Inc is requesting an Authority to Construct permit to 'reopen' the cotton saw gin operation. The cotton gin was originally closed in 2008 and ERCs were banked in project S-1083482.

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 4101 Visible Emissions (2/17/05)
Rule 4102 Nuisance (12/17/92)
Rule 4201 Particulate Matter Concentration (12/17/92)
Rule 4202 Particulate Matter Emission Rate (12/17/92)
Rule 4204 Cotton Gins (2/17/05)
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

This facility is located at 645 N. Hamlin in Tipton, 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 ginning process consists of eleven stages:

- 1) Receiving and unloading seed cotton at the gin,
- 2) precleaning #1
- 3) precleaning #2,
- 4) precleaning #3,
- 5) overflow,
- 6) gin stand and feeder trash,
- 7) lint cleaning,
- 8) motes,
- 9) motes trash,
- 10) motes bypass and,
- 11) battery condenser.

Seed cotton is received at the gin in trailers. The cotton is transferred to the processing system through a pneumatic suction system. The cotton is pneumatically conveyed to the pre-cleaning processes, where dirt and trash particles are removed from the seed cotton. The cotton is then conveyed to the ginning stands, where the cotton fiber is separated from the seed. The lint cotton is then cleaned and baled. The motes generated in the ginning process are cleaned and baled in a separate process. Particulate matter is currently separated from the air streams through the use of 1D-3D cyclones.

This is a seasonal source and the maximum operating schedule is 12 hours per day and 120 days per year. (typical)

V. Equipment Listing

S-193-2-0: TIPTON COTTON GIN #1 WITH FOUR SAW GIN STANDS, COTTON UNLOADING SYSTEM, COTTON CLEANING SYSTEM CONSISTING OF SIX INCLINED AND FOUR IMPACT CLEANERS, SIX 3.0 MMBTU/HR DRYERS, LINT CLEANING SYSTEM, BATTERY CONDENSER SYSTEM, MOTES SYSTEM, OVERFLOW SYSTEM AND TRASH SYSTEM

VI. Emission Control Technology Evaluation

PM₁₀ is the pollutant of primary concern from this permit unit, which is controlled by 1D-3D enhanced cyclones. For proper operation, District Rule 4204, Section 5.2, requires an inlet air velocity range of 3,200 ± 400 feet per minute for each 1D-3D cyclone. Compliance with this requirement is assured for 1D-3D the cyclones with the following condition:

- All 1D-3D cyclones shall operate at a cyclone inlet air velocity of 3200 + or - 400 ft/min

VII. General Calculations

A. Assumptions

- Assume 50% of particulate matter is PM₁₀ (Per District Rule 2201, 4.11.2)
- Each bale is 500 pounds. The emission factors are based on 500 pound bales and the permit conditions will require that the number of bales be adjusted to 500 pound bales. (Per Applicant)
- Ginning rate (1,000 bale/day and 18,783 bale/yr at 500 lb/bale) (Per Applicant)
- Annual operation: 120 days/year (Per Applicant)

B. Emission Factors

Post-Project Emission Factors Modified Systems		
	Emission Factor	Source
Permit Unit Total	1.07 lb-PM ₁₀ /bale corrected to 500 pound bales	Applicant proposed

C. Calculations

1. Pre-Project Potential to Emit (PE1)

This is a new emissions unit so PE=1 for all pollutants.

2. Post Project Potential to Emit (PE2)

For the cotton ginning operation all emissions are PM₁₀ and are calculated as follows:

$$\begin{aligned}
 \text{Daily PE1} &= \text{Permit Unit Total EF2} * \text{Daily Throughput} \\
 &= 1.07 \text{ lb-PM}_{10}/\text{bale} * 1,000 \text{ bale/day} \\
 &= 1,070.0 \text{ lb-PM}_{10}/\text{day}
 \end{aligned}$$

$$\begin{aligned}
 \text{Annual PE1} &= \text{Permit Unit Total EF2} * \text{Annual Throughput} \\
 &= 1.07 \text{ lb-PM}_{10}/\text{bale} * 18,783.2 \text{ bale/yr} \\
 &= 20,098 \text{ lb-PM}_{10}/\text{yr}
 \end{aligned}$$

Dryers:

Since the three dryers in the three precleaning systems have the same burner rating, the total output of the three dryers will be used for the calculations. The emissions are calculated as follows:

$$\begin{aligned}
 \text{Total Burner Rating} &= 3.0 \text{ MMBtu/hr} * 6 \text{ precleaning systems} \\
 &= 18.0 \text{ MMBtu/hr}
 \end{aligned}$$

Post Project Daily Emissions (unit -2-0)						
NO _x	0.1	(lb/MMBtu) x	18	(MMBtu/hr) x	24	(hr/day) = 43.2 (lb/day)
SO _x	0.008	(lb/MMBtu) x	18	(MMBtu/hr) x	24	(hr/day) = 3.5 (lb/day)
CO	0.02	(lb/MMBtu) x	18	(MMBtu/hr) x	24	(hr/day) = 8.6 (lb/day)
VOC	0.006	(lb/MMBtu) x	18	(MMBtu/hr) x	24	(hr/day) = 2.6 (lb/day)

Post Project Daily Emissions (For One Burner)						
NO _x	0.1	(lb/MMBtu) x	3	(MMBtu/hr) x	24	(hr/day) = 7.2 (lb/day)
SO _x	0.008	(lb/MMBtu) x	3	(MMBtu/hr) x	24	(hr/day) = 0.6 (lb/day)
CO	0.02	(lb/MMBtu) x	3	(MMBtu/hr) x	24	(hr/day) = 1.4 (lb/day)
VOC	0.006	(lb/MMBtu) x	3	(MMBtu/hr) x	24	(hr/day) = 0.4 (lb/day)

Annual emissions are calculated as the daily PE times 120 days/year.

Post Project Annual Emissions (unit -2-0)						
NO _x	43.2	(lb/day) x	120 days	=	5,184	(lb/yr)
SO _x	3.5	(lb/day) x	120 days	=	420	(lb/yr)
CO	8.6	(lb/day) x	120 days	=	1,032	(lb/yr)
VOC	2.6	(lb/day) x	120 days	=	312	(lb/yr)

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

Pursuant to Section 4.9 of District Rule 2201, the Pre-Project Stationary Source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

The total Pre-Project Stationary Source Potential to Emit (SSPE1_{total}) can be calculated by adding the Pre-Project Potential to Emit (PE1) from all units with valid ATCs or PTOs (SSPE1_{Permit Unit}) and the sum of the ERCs that have been banked at the source and which have not been used on-site (Total_{ERC}).

$$SSPE1_{Total} = SSPE1_{Permit Unit} + Total_{ERC}$$

Pre-Project Stationary Source Potential to Emit [SSPE1] (lb/year)					
Permit Unit/ERC	NO _x	SO _x	PM ₁₀	CO	VOC
ERC S-2989	0	4	22,226	61	16
ERC S-317	0	0	0	74	6
Total _{ERC}	0	4	22,226	135	22
Pre-Project SSPE (SSPE1 _{total})	0	4	22,226	135	22

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

Pursuant to Section 4.10 of District Rule 2201, the Post Project Stationary Source Potential to Emit (SSPE2) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

$$SSPE2_{Total} = SSPE2_{Permit\ Unit} + Total_{ERC}$$

Post Project Stationary Source Potential to Emit [SSPE2] (lb/year)					
Permit Unit/ERC	NO _x	SO _x	PM ₁₀	CO	VOC
S-193-2-0	5,184	420	20,098	1,032	312
SSPE2 _{Permit Unit}	5,184	420	20,098	1,032	312
ERC S-2989	0	4	22,226	61	16
ERC S-317	0	0	0	74	6
Total _{ERC}	0	4	22,226	135	22
Post Project SSPE (SSPE2 _{total})	5,184	424	42,324	1,167	334

5. Major Source Determination

Pursuant to Section 3.23 of District Rule 2201, a Major Source is a stationary source with post-project emissions or a Post Project Stationary Source Potential to Emit (SSPE2), equal to or exceeding one or more of the following threshold values. However, Section 3.23.2 states, "for the purposes of determining major source status, the SSPE2 shall not include the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site."

As seen in Section VII.C.3 & VII.C.4 above, this facility contains ERCs that have been banked at the source and which have not been used on-site; therefore, an adjusted Stationary Source Potential to Emit (SSPE_{Permit Unit}) will be used to determine major source status.

Major Source Determination (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
Adjusted Pre-Project SSPE (SSPE1 _{Permit Unit})	0	0	0	0	0
Adjusted Post Project SSPE (SSPE2 _{Permit Unit})	5,184	420	20,098	1,032	312
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 also is not becoming a Major Source as a result of this project.

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 Section 3.7 of District Rule 2201, BE = Pre-project Potential to Emit 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 Section 3.22 of District Rule 2201.

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

Therefore Baseline Emissions (BE) are equal to the Pre-Project Potential to Emit (PE1).

S-193-2-0:

As calculated in Section VII.C.1 above, PE1 is summarized in the following table:

Baseline Emissions [BE] (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
S-193-2-0	0	0	0	0	0

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.*"

As discussed in Section VII.C.5 above, the facility is not a Major Source for NO_x, SO_x, PM₁₀ and VOC emissions; therefore, the project does not constitute a SB 288 Major Modification for NO_x, SO_x, PM₁₀ and VOC emissions.

8. Federal Major Modification

District Rule 2201, Section 3.17 states that Federal Major Modifications are the same as "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.

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 PM₁₀ (140,000 lb/year), it is not a major source for PM_{2.5} (200,000 lb/year).

9. 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 C.

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 exempted pursuant to Section 4.2, 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 SB288 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 of this evaluation, the applicant is proposing to install a new ginning operation with a PE greater than 2 lb/day for NO_x, PM₁₀, and CO. BACT is triggered for NO_x, and PM₁₀, only since the PEs are greater than 2 lbs/day; however BACT is not triggered for CO since the SSPE2 for CO is not greater than 200,000 lbs/year, as demonstrated in Section VII.C.5 of this document. It should be noted that BACT is triggered per emission unit, and the above values pertain to a single 6 MMBtu/hr burner.

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 a SB 288 and/or Federal Major Modification for NO_x emissions; therefore BACT is not triggered for any pollutant.

2. BACT Guideline

BACT Guideline 5.3.2, applies to ginning operation burners. [Cotton Gin – Natural Gas-Fired Dryer, = or < 8 MMBtu/hr Burner] (See **Appendix B**)

BACT Guideline 5.3.1 applies to the cotton gin operation. [Cotton Gin Operation]

3. Top-Down BACT Analysis

Per Permit Services Policies and Procedures for BACT, 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.

Pursuant to the attached Top-Down BACT Analysis (see **Appendix B**), BACT has been satisfied with the following:

NO_x: Natural gas/LPG burner (0.1 lb/MMBtu)
PM₁₀: 1D-3D cyclone collectors with expansion chambers

B. Offsets

1. Offset Applicability

Pursuant to Section 4.5.3, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the Post Project Stationary Source Potential to Emit (SSPE2) equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The following table compares the post-project facility-wide annual emissions in order to determine if offsets will be required for this project.

Offset Determination (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
Post Project SSPE (SSPE2)	5,184	424	42,324	1,167	334
Offset Threshold	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	No	No	Yes	No	No

2. Quantity of Offsets Required

As seen above, the SSPE2 is greater than the offset thresholds for PM10 only; therefore offset calculations will be required for this project.

Per Sections 4.7.2 and 4.7.3, the quantity of offsets in pounds per year for NO_x is calculated as follows for sources with an SSPE1 less than the offset threshold levels before implementing the project being evaluated.

$$\text{Offsets Required (lb/year)} = [(\text{SSPE2} - \text{ROT} + \text{ICCE}) \times \text{DOR}]$$

Where,

SSPE2 = Post Project Stationary Source Potential to Emit

ROT = Respective Offset Threshold, for the respective pollutant indicated in Section 4.5.3.

ICCE = Increase in Cargo Carrier Emissions

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

SSPE2 (PM10) = 42,324 lb/year

Offset threshold (PM10) = 29,200 lb/year

ICCE = 0 lb/year

Assuming an offset ratio of 1:1, the amount of PM10 ERCs that need to be withdrawn is:

$$\begin{aligned} \text{Offsets Required (lb/year)} &= [(42,324 - 29,200) \times 1] \\ &= 13,124 \times 1 \\ &= 13,124 \text{ lb PM10/year} \end{aligned}$$

Calculating the appropriate quarterly emissions to be offset is as follows, since this is a seasonal source and will only be operated in the fourth quarter:

<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
0	0	0	13,124

The applicant has stated that the facility plans to use ERC certificate S-2989-4 to fully offset the increases in PM10 emissions associated with this project in order to mitigate the adverse health effects determined from the AAQA, see section F below.

C. Public Notification

1. Applicability

Public noticing is required for:

- a. New Major Sources, Federal Major Modifications, and SB288 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 SSPE of greater than 20,000 lb/year for any pollutant.

a. New Major Sources, Federal Major Modifications, and SB288 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.

As demonstrated in VII.C.7, this project does not constitute a SB 288 or Federal Major Modification; therefore, public noticing for SB 288 or Federal Major Modification purposes is not required.

b. PE > 100 lb/day

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	43.2	100 lb/day	No
SO _x	3.5	100 lb/day	No
PM ₁₀	1,070	100 lb/day	Yes
CO	8.6	100 lb/day	No
VOC	2.6	100 lb/day	No

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

c. Offset Threshold

The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

Offset Threshold				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO _x	0	5,184	20,000 lb/year	No
SO _x	4	424	54,750 lb/year	No
PM ₁₀	22,226	42,324	29,200 lb/year	Yes
CO	135	1,167	200,000 lb/year	No
VOC	22	334	20,000 lb/year	No

As detailed above, offset thresholds were surpassed for PM10 with this project; therefore public noticing is required for offset purposes.

d. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a Stationary Source Increase in Permitted Emissions (SSIPE) of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE is calculated as the Post Project Stationary Source Potential to Emit (SSPE2) minus the Pre-Project Stationary Source Potential to Emit (SSPE1), i.e. $SSIPE = SSPE2 - SSPE1$. The values for SSPE2 and SSPE1 are calculated according to Rule 2201, Sections 4.9 and 4.10, respectively. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table:

Stationary Source Increase in Permitted Emissions [SSIPE] – Public Notice					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO _x	5,184	0	5,184	20,000 lb/year	No
SO _x	424	4	420	20,000 lb/year	No
PM ₁₀	42,324	22,226	20,098	20,000 lb/year	Yes
CO	1,167	135	1,032	20,000 lb/year	No
VOC	334	22	312	20,000 lb/year	No

As demonstrated above, the SSIPEs for PM10 were greater than 20,000 lb/year; therefore public noticing for SSIPE purposes is required.

2. Public Notice Action

As discussed above, public noticing is required for this project for PM10 emissions in excess of 100 lb/day, surpassing the offset threshold for PM10, and for the SSIPE being greater than 20,000 lbs/year for PM10. 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)

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.15 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.15.1 and 3.15.2, 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 emission factors and throughput rates will be used to establish the DEL for each modified system (i.e. emissions unit) and for the entire permit unit. For each modified system, the emission factor will be included in the permit using the following format and emission factors in Section VII.B of this evaluation:

For the entire permit unit, as a whole, the following conditions will be included on the permit:

- Total PM10 emissions from the saw cotton gin operation shall not exceed 4.28 pounds per ton of baled cotton (1.07 pound per bale, corrected to 500 pound bales). [District Rule 2201]
- Daily ginning rate of the saw gin stand shall not exceed 250 tons of baled cotton per day (1,000 bales per day, based on 500 pound bales). [District Rule 2201]
- Annual ginning rate of the saw gin stand shall not exceed 11,401 tons of baled cotton per year (45,604 bales per year, based on 500 pound bales). [District Rule 2201]
- Emissions from the natural gas-fired burners shall not exceed 0.1 lb-NOx/MMBtu, 0.008 lb-SOx/MMBtu, 0.006 lb-VOC/PM10 or 0.02 lb-CO/MMBtu. [District Rule 2201] N

E. Compliance Assurance

1. Source Testing

Per District Policy SSP 1505 source testing of half of the cyclone systems is required. The following condition identifies the systems to be tested:

- Source testing for volumetric airflow (acfm) and PM10 emissions shall be conducted on one cyclone from each of the following systems: the #1 Pre-cleaning system, the overflow system, the ginstand/feeder trash system, the lint cleaning system, the mote lint cleaning system and the battery condenser system. [District Rule 2201] N

2. Monitoring

This permit unit is subject to the monitoring requirements of District Rule 4204, which will be discussed in Section VIII, *District Rule 4204*, of this evaluation.

3. Recordkeeping

The existing recordkeeping requirements will be included in the ATC issued through this project.

Additional recordkeeping is required by District Rule 4204 and will be discussed in Section VIII, *District Rule 4204*, of this evaluation.

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis

Section 4.14.1 of this Rule requires that an ambient air quality analysis (AAQA) be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The Technical Services Division of the SJVAPCD conducted the required analysis. Refer to Appendix A of this document for the AAQA summary sheet.

The proposed location is in an attainment area for NO_x, CO, and SO_x. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO_x, CO, or SO_x.

The proposed location is in a non-attainment area for PM₁₀. The increase in the ambient PM₁₀ concentration due to the proposed equipment is shown on the table titled Calculated Contribution. The levels of significance, from 40 CFR Part 51.165 (b)(2), are shown on the table titled Significance Levels.

Significance Levels					
Pollutant	Significance Levels (µg/m ³) - 40 CFR Part 51.165 (b)(2)				
	Annual Avg.	24 hr Avg.	8 hr Avg.	3 hr Avg.	1 hr Avg.
PM ₁₀	1.0	5	N/A	N/A	N/A

Calculated Contribution					
Pollutant	Calculated Contributions (µg/m ³)				
	Annual Avg.	24 hr Avg.	8 hr Avg.	3 hr Avg.	1 hr Avg.
PM ₁₀	50.0	30.0	N/A	N/A	N/A

As shown above, modeling results indicated that the calculated increase in the ambient PM₁₀ concentration from the cotton gin would exceed the District significance level, likewise the significance levels of PM_{2.5} are also exceeded. Therefore, the fugitive PM₁₀ and PM_{2.5} emissions from the cotton gin must be mitigated.

District Rule 2201 allows the District to consider offsets as mitigation when determining if there is a violation of the AAQS.

Section 4.14.1 of District Rule 2201 states:

Emissions from a new or modified Stationary Source shall not cause or make worse the violation of an Ambient Air Quality Standard. In making this determination, the APCO shall take into account the increases in minor and secondary source emissions as well as the mitigation of emissions through offsets obtained pursuant to this rule....

To mitigate potential adverse affects to Ambient Air Quality, Mid Valley Cotton has proposed to provide a sufficient amount of PM10 ERCs to fully offset the PM₁₀ and PM2.5 emission increases from the project. The amount of PM₁₀ emissions that need to be mitigated is 20,098 pounds. The ERCs used to offset the PM10 emissions are due to the original shutdown of the same operation, therefore, the provided ERCs also offset the increase in PM2.5 emissions.

The applicant has stated that the facility plans to use ERC certificate S-2989-4 to offset the increases in PM10 and PM2.5 emissions associated with this project. The above certificate has available quarterly NO_x credits as follows:

	<u>1st</u> <u>Quarter</u>	<u>2nd</u> <u>Quarter</u>	<u>3rd</u> <u>Quarter</u>	<u>4th</u> <u>Quarter</u>
ERC #S-2989-4	0	0	0	22,226

As seen above, the facility has sufficient credits to fully offset the quarterly PM10 emissions increases associated with this project.

Proposed Rule 2201 (offset) Conditions:

- Prior to operating equipment under this Authority to Construct, permittee shall surrender PM10 emission reduction credits for the following quantity of emissions: 1st quarter - 0 lb, 2nd quarter - 0 lb, 3rd quarter - 0 lb, and fourth quarter – 20,098 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11). [District Rule 2201]
- ERC Certificate Number S-2989-4 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

Since sufficient offsets will be provided to fully mitigate the PM₁₀ and PM2.5 emissions from this cotton gin, this project is not expected to cause or make worse a violation of an air quality standard.

Rule 2520 Federally Mandated Operating Permits

This facility is not a Major Source and therefore is not subject to the requirements of this rule.

Rule 4101 Visible Emissions

Section 5.0 prohibits visible emissions for a period of more than three minutes per hour that are darker than 20% or Ringelmann No. 1. Based on past inspections of similar cotton ginning facilities, emissions are not expected to exceed allowable limits when controlled by 1D-3D cyclones. Compliance with this rule is expected. Therefore, the following condition will be included to ensure compliance:

- 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

Section 4.0 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. Therefore, compliance with this rule is expected.

A permit condition will be listed on the permit as follows:

- {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 or equal to one. According to the Technical Services Memo for this project (**Appendix A**), the total facility prioritization score including this project was less than or equal to one. Therefore, no future analysis is required to determine the impact from this project and compliance with the District's Risk Management Policy is expected.

Rule 4201 Particulate Matter Concentration

According to Section 3.1 particulate matter (PM) emissions from each source operation should not exceed 0.1 grains per cubic foot of gas at dry standard conditions. The calculation is based on the bales/day ginning rate through each system and the airflow through the each cyclone. Emission factors are from Section VII.B of this evaluation. It is also conservatively assumed that two (2) lbs of particulate matter is emitted for every pound of PM10 emitted. The unmodified

systems will not be analyzed for compliance with this rule as continued compliance is expected.

The grain loading for the modified cyclone system is calculated as follows.

PM (gr/dscf):

$$= \frac{(EF, \text{ lb-PM}_{10}/\text{bale}) * (\text{throughput, bales/day}) * (7,000 \text{ gr/lb-PM}_{10}) * (2 \text{ lb-PM/lb-PM}_{10})}{(\text{flowrate, scf/min}) * (\text{operating hours, hr/day}) * (60 \text{ min/hr})}$$

a.) Unloading:

$$= \frac{(0.13 \text{ lb-PM}_{10}/\text{bale}) * (1,000 \text{ bales/day}) * (7,000 \text{ gr/lb-PM}_{10}) * (2 \text{ lb-PM/lb-PM}_{10})}{(25,600 \text{ scf/min}) * (24 \text{ hr/day}) * (60 \text{ min/hr})}$$

$$= 0.050 \text{ gr/dscf}$$

b.) #1 Precleaner:

$$= \frac{(0.13 \text{ lb-PM}_{10}/\text{bale}) * (1,000 \text{ bales/day}) * (7,000 \text{ gr/lb-PM}_{10}) * (2 \text{ lb-PM/lb-PM}_{10})}{(24,000 \text{ scf/min}) * (24 \text{ hr/day}) * (60 \text{ min/hr})}$$

$$= 0.053 \text{ gr/dscf}$$

c.) #2 Precleaner:

$$= \frac{(0.13 \text{ lb-PM}_{10}/\text{bale}) * (1,000 \text{ bales/day}) * (7,000 \text{ gr/lb-PM}_{10}) * (2 \text{ lb-PM/lb-PM}_{10})}{(20,000 \text{ scf/min}) * (24 \text{ hr/day}) * (60 \text{ min/hr})}$$

$$= 0.063 \text{ gr/dscf}$$

d.) #3 Precleaner:

$$= \frac{(0.12 \text{ lb-PM}_{10}/\text{bale}) * (1,000 \text{ bales/day}) * (7,000 \text{ gr/lb-PM}_{10}) * (2 \text{ lb-PM/lb-PM}_{10})}{(20,000 \text{ scf/min}) * (24 \text{ hr/day}) * (60 \text{ min/hr})}$$

$$= 0.058 \text{ gr/dscf}$$

e.) Overflow:

$$= \frac{(0.06 \text{ lb-PM}_{10}/\text{bale}) * (1,000 \text{ bales/day}) * (7,000 \text{ gr/lb-PM}_{10}) * (2 \text{ lb-PM/lb-PM}_{10})}{(11,200 \text{ scf/min}) * (24 \text{ hr/day}) * (60 \text{ min/hr})}$$

$$= 0.052 \text{ gr/dscf}$$

f.) Gin Stand and Feeder Trash:

$$= \frac{(0.08 \text{ lb-PM}_{10}/\text{bale}) * (1,000 \text{ bales/day}) * (7,000 \text{ gr/lb-PM}_{10}) * (2 \text{ lb-PM/lb-PM}_{10})}{(9,000 \text{ scf/min}) * (24 \text{ hr/day}) * (60 \text{ min/hr})}$$

$$= 0.086 \text{ gr/dscf}$$

g.) Lint Cleaning:

$$= \frac{(0.14 \text{ lb-PM}_{10}/\text{bale}) * (1,000 \text{ bales/day}) * (7,000 \text{ gr/lb-PM}_{10}) * (2 \text{ lb-PM/lb-PM}_{10})}{(78,000 \text{ scf/min}) * (24 \text{ hr/day}) * (60 \text{ min/hr})}$$

$$= 0.017 \text{ gr/dscf}$$

h.) Motes:

$$= \frac{(0.11 \text{ lb-PM}_{10}/\text{bale}) * (1,000 \text{ bales/day}) * (7,000 \text{ gr/lb-PM}_{10}) * (2 \text{ lb-PM/lb-PM}_{10})}{(25,500 \text{ scf/min}) * (24 \text{ hr/day}) * (60 \text{ min/hr})}$$

$$= 0.042 \text{ gr/dscf}$$

i.) Motes Trash:

$$= \frac{(0.04 \text{ lb-PM}_{10}/\text{bale}) * (1,000 \text{ bales/day}) * (7,000 \text{ gr/lb-PM}_{10}) * (2 \text{ lb-PM/lb-PM}_{10})}{(4,000 \text{ scf/min}) * (24 \text{ hr/day}) * (60 \text{ min/hr})}$$

$$= 0.100 \text{ gr/dscf}$$

j.) Motes Bypass:

$$= \frac{(0.03 \text{ lb-PM}_{10}/\text{bale}) * (1,000 \text{ bales/day}) * (7,000 \text{ gr/lb-PM}_{10}) * (2 \text{ lb-PM/lb-PM}_{10})}{(4,000 \text{ scf/min}) * (24 \text{ hr/day}) * (60 \text{ min/hr})}$$

$$= 0.073 \text{ gr/dscf}$$

k.) Battery Condenser:

$$= \frac{(0.05 \text{ lb-PM}_{10}/\text{bale}) * (1,000 \text{ bales/day}) * (7,000 \text{ gr/lb-PM}_{10}) * (2 \text{ lb-PM/lb-PM}_{10})}{(30,000 \text{ scf/min}) * (24 \text{ hr/day}) * (60 \text{ min/hr})}$$

$$= 0.016 \text{ gr/dscf}$$

Therefore, compliance with this rule is expected. The following condition will be placed on the permit to ensure compliance with this rule.

- Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

Rule 4202 Particulate Matter Emission Rate

Per section 4.1, particulate matter (PM) emissions from any source operation shall not exceed the allowable hourly emission rate (E) as calculated using the following applicable formulas:

$$E = 3.59 P^{0.62} \text{ (when, } P = \text{ process weight rate } \leq 30 \text{ tons/hr)}$$

$$E = 17.31 P^{0.16} \text{ (when, } P = \text{ process weight rate } > 30 \text{ tons/hr)}$$

Maximum Processing Rate

The maximum hourly processing rates cotton are:

$$\text{Process rate for cotton} = 1,000 \text{ bales/day} \times 0.25 \text{ ton/bale} \div 24 \text{ hours/day} = 10.4 \text{ tons/hour}$$

Maximum Allowable Emission Rate

The maximum allowable PM hourly emission rate from each truck unloading point at the sand and coarse aggregate receiving and storage operation is calculated as follows:

$$E = 3.59 \times 10.4^{0.62} = 15.3 \text{ lb-PM/hr}$$

Actual Emission Rate

Assuming Worst case cyclone from 4201 above

$$\text{PM}_{10} \text{ emission rate} = 32.5 \text{ lb-PM}_{10}/\text{day} / 24 \text{ hours} = 8.1 \text{ lb-PM}_{10}/\text{hr}$$

$$\text{PM} = 8.1 \text{ lb-PM/hr} < E = 15.3 \text{ lb-PM/hr}$$

Therefore compliance with this District Rule 4202 is expected for cement truck unloading and cement storage operation.

Rule 4204 Cotton Gins

Section 5.1 requires that all emission points be controlled by 1D-3D cyclones or rotary drum filters according to the compliance schedule in Section 7.1, as shown in the following table.

Compliance Schedule	
Control Requirement	Compliance Date
Install 1D3D cyclones on all unloading, #1 precleaning, #2 precleaning, and #3 precleaning emission points.	July 1, 2006
Install 1D3D cyclones on all overflow, gin stand/feeder trash, motes, motes cleaner trash, and trash stockpiler emission points.	July 1, 2007
Install 1D3D cyclones on all #1 and #2 lint cleaning, lint trash, robber systems, and battery condenser emission points.	July 1, 2008

The compliance deadlines have already passed on this table and compliance is expected.

Section 5.2 requires the inlet air velocity of a 1D-3D cyclone be maintained between 2,800 and 3,600 feet per minute. Compliance is assured as shown in Section VI of this evaluation.

Section 5.3 requires replacement parts of 1D-3D cyclones to meet the dimensional requirements of Figure 1 or Figure 2 of this rule. Since the replacement parts are enhanced 1D-3D, and the dimensions have been verified with Figure 1 - Enhanced 1D-3D Cyclone or Figure 2 - Enhanced 1D-3D Cyclone with Expansion Chamber, compliance is assured.

Sections 5.4 and 5.5 provide alternative options, which the applicant has not proposed. Therefore, no further discussion is necessary.

Section 5.6 requires an owner using a drive-under or pull-through trash collection system for load-out purposes to utilize one or more of the following, which will be included on the ATC to ensure compliance:

- The trash loading area shall be enclosed with four sides that are higher than the trash auger. Two sides shall be solid. The remaining sides shall have flexible wind barriers that extend below the top of the trash trailer sides, or have solid doors that remain shut while trash trailers are being loaded, except as necessary to accommodate trailer movement. [District Rule 4204]

Section 5.7 specifies requirements for trash conveyance systems dumping directly into piles. However, this permit unit does not use trash piling systems and is therefore not subject to this section .

Section 6.1 requires that the owner/operator conduct daily visual inspections of the material handling system for leaks and equipment malfunctions, and maintain records of these inspections and source tests. The following conditions ensure compliance:

- Permittee shall conduct daily visual inspections of the material handling systems for leaks, breaks, or other visible signs of equipment malfunctions. [District Rule 4204]
- Permittee shall maintain a record of the daily inspections of the material handling systems, including any equipment malfunctions discovered and corrective action taken to repair the malfunction, and any source test results. [District Rule 4204]

- All records shall be retained on site for at least five years and made available to the District upon request. [District Rules 1070 and 4204]

Section 6.2 requires source testing of air inlet velocity when installing or modifying control equipment to comply with District Rule 4204 using approved source test methods.

- Source testing for volumetric airflow (acfm) and PM10 emissions shall be conducted on one cyclone from each of the following systems: the #1 Pre-cleaning system, the overflow system, the ginstand/feeder trash system, the lint cleaning system, the mote lint cleaning system and the battery condenser system. [District Rule 2201] N
- Selection of sampling ports and traverses for source testing shall be according to EPA Method 1. Stack gas velocity and volumetric flow rate shall be determined using EPA Method 2. [District Rule 4202] N
- PM10 emissions shall be determined using EPA Methods 5, 201A, CARB Method 501 or, alternative test methods approved by the APCO and EPA. [District Rule 4202] N
- Cyclone inlet air velocity V (feet/min) shall be measured by source testing or calculated as the volumetric airflow, Q (acfm), measured by source testing, times eight, divided by the square of the cyclone diameter, D (ft), or: $V=8Q/D^2$. [District Rules 2201 and 4204] N

California Environmental Quality ACT (CEQA)

The California Environmental Quality Act (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 San Joaquin Valley Unified Air Pollution Control District (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.
- 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.

The District determined that no other agency has broader discretionary approval power over the project and that the District is the first agency to act on the project, therefore establishing the District as the Lead Agency for the project (CEQA Guidelines §15051(b)).

The project consists of issuance of air permits, allowing a cotton gin which was voluntarily taken out of service in 2008, to resume operations at the existing facility, using existing equipment. The District performed an Engineering Evaluation (this document) for the proposed project and determined that through a combination of project design elements and permit conditions, increases in criteria pollutant emissions will be below the District's thresholds of significance.

Greenhouse gas emissions from the cotton drying operation are proportional to cotton production. During the 2002-2004 baseline period cotton production at the facility was limited to 11,401 tons of baled cotton per year. A new permit condition will be imposed that limits the annual ginning rate of the saw gin stand to 4,696 tons of baled cotton per year. This permit condition reduces baled cotton production by about a 59% and concomitantly reduces GHG emissions, as compared to the baseline period. Per the District's policy for determining significance of project specific GHG emission increases, Projects achieving at least a 29% GHG emission reduction compared to business as usual would be determined to have a less than significant individual and cumulative impact for GHG emissions. Thus, the District concludes that project specific stationary source GHG emissions would have a less than significant impact on global climate change.

Delivery of raw materials (cotton) and shipment of finished goods (cotton bales) generates greenhouse gas emissions in proportion to vehicle miles traveled (VMT). It is expected that the imposed limitation on cotton production will result in a corresponding decrease in VMT and that VMT could be further reduced because growers would not have to transport cotton to gins outside the area being served. However, the District conservatively assumes that there is no change in VMT and concludes that mobile source GHG emissions would have a less than significant impact on global climate change.

The proposed project will occur at an existing facility and approval of the project would not result in an increase in activities, as compared to those which existed when the facility was operational. Furthermore, there is no evidence before the District that the project could have a significant effect on the environment. The District finds that the project is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15301 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)). Issuance of the Authority to Construct (ATC) constitutes the final decision to approve the project. Pursuant to CCR §15061(d) and §15062(c) a Notice of Exemption will be filed after the issuance of the ATC.

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.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Issue Authority to Construct S-199-2-0 subject to the permit conditions on the attached draft Authority to Construct in Appendix D.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-199-2.0	3020-02-H	18,000 kBtu/hr	\$1030.00

Appendixes

- A: HRA and AAQA
- B: BACT
- C: QNEC
- D: Draft ATCs and Emission Profile

APPENDIX A
HRA and AAQA

San Joaquin Valley Air Pollution Control District Risk Management Review

To: Thom Maslowski, AQE – Permit Services
 From: Ester Davila, SAQS – Technical Services
 Date: September 22, 2011
 Facility Name: Mid Valley Cotton
 Location: 645 N Hamlin, Tipton CA
 Application #(s): S-193-2-0
 Project #: S-1112063

A. RMR SUMMARY

RMR Summary			
Categories	Cotton Ginning Operation (Unit 2-0)	Project Totals	Facility Totals
Prioritization Score	1.01	1.01	1.01
Acute Hazard Index	0.02	0.02	0.00
Chronic Hazard Index	0.003	0.003	0.00
Maximum Individual Cancer Risk	3.32E-07	3.32E-07	3.32E-07
T-BACT Required?	No		
Special Permit Conditions?	No		

Proposed Permit Conditions

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

Unit 2-0

- 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]

B. RMR REPORT

I. Project Description

Technical Services received a request on September 15, 2011, to perform a Risk Management Review for the start-up of a new cotton gin with four saw gin stands, cotton unloading system, cotton cleaning system consisting of six inclined and four impact cleaners, six 3.0 MMBtu/hr dryers, lint cleaning system, battery condenser system, mores system, overflow system and trash system, primarily controlled by cyclones. The cotton gin will process 1000 (500lb) bales per day and 45,604 bales per year.

II. Analysis

Toxic emissions, the acute and chronic indices, and the individual cancer risk for this proposed unit were calculated using the District developed Cotton Refined Risk Assessment spreadsheet and the PM10 emissions factor supplied by the processing engineer.

The following parameters were used for the review:

Analysis Parameters Unit 2-0			
Source Type	Point	Closest Receptor (m)	145
Stack Height (m)	11.28	Receptor Type	Business
Stack Inside Diameter (m)	0.305	Throughput (MMscf/yr)	25.92
Stack Exit Velocity (m/s)	18.58	Throughput (bales/yr)	45,604
Stack Exit Temp (°K)	304.26	Max Hours per Year	2880

Technical Services performed modeling for criteria pollutants CO, NO_x, SO_x, PM₁₀, and PM_{2.5}; as well as a RMR. The emission rates used for criteria pollutant modeling were 1032 lb/yr CO, 5184 lb/yr NO_x, 420 lb/yr SO_x, 20,098 lb/yr PM₁₀, and 6400 lb/yr PM_{2.5}. The engineer supplied the emissions rates.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

Values are in $\mu\text{g}/\text{m}^3$

Diesel ICE	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO _x	Pass	X	X	X	Pass
SO _x	Pass	Pass	X	Pass	Pass
PM ₁₀	X	X	X	Fail ¹	Fail ¹
PM _{2.5}	X	X	X	Fail ²	Fail ²

*Results were taken from the attached PSD spreadsheet.

¹The PM10 concentrations are above the EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

²The PM2.5 concentrations are above the EPA's SIL's of; $1.2 \mu\text{g}/\text{m}^3$ (24hrs) & $0.3 \mu\text{g}/\text{m}^3$ (Annual)

III. Conclusion

The emissions from the proposed equipment will cause or contribute significantly to a violation of the State and National AAQS.

The acute and chronic indices are below 1.0; and the cancer risk is **3.32E-07**, which is less than the 1 in a million threshold. In accordance with the District's Risk Management Policy, the project is approved **without** Toxic Best Available Control Technology (T-BACT).

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.

APPENDIX B
BACT

Per » B A C T » Bact Guideline.asp?category Level1=5&category Level2=3&category Level3=2&last Update=6 » 30 :

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**Best Available Control Technology (BACT) Guideline 5.3.2
Last Update: 6/30/2000**

Cotton Gin - Natural Gas-Fired Dryer, = or < 8 MMBtu/hr Burner

Pollutant	Achieved in Practice or in the SIP	Technologically Feasible	Alternate Basic Equipment
NOx	Natural gas/LPG burner (0.1 lb/MMBtu)	1. Natural gas/LPG with ultra Low-NOx Burner (0.011 lb/MMBtu) 2. 1. Natural gas/LPG with Low-NOx Burner (0.024 lb/MMBtu)	
PM10	1D/3D cyclone		

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 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. For background information, see Permit Specific BACT Determinations on Details Page.

BACT Analysis for NO_x Emissions:

BACT Guideline 5.3.2 Cotton Gine - Natural Gas-Fired Dryer, = or < 8 MMBtu/hr Burner

Step 1 - Identify All Possible Control Technologies

The following control technology is applicable for control of NO_x for this class of source:

- Ultra Low-NO_x Burner (0.011 lb/MMBtu)
- Low-NO_x Burner (0.024 lb/MMBtu)
- NO_x emissions of 0.1 lb/MMBtu

Step 2 - Eliminate Technologically Infeasible Options

All control technology cited in Step 1 is technologically feasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

In order to determine the control efficiency, the uncontrolled emissions must first be determined. The control efficiency is equal to the uncontrolled emission factor minus the controlled emission factor divided by the uncontrolled emission factor.

1. District identified BARCT for existing process heaters and dryers is 0.1 lb/MMBtu. This limit will be used as the industry standard emission factor in this BACT analysis.

The resulting control efficiency calculations are summarized in the following table:

Control Method	% Control	Calculation	Achieved-in-practice
Ultra Low-NO _x Burner	89	$\frac{0.1 - 0.011}{0.1}$	No
Low-NO _x Burner	76	$\frac{0.1 - 0.024}{0.1}$	No
NO _x emissions of 0.1 lb/MMBtu	0	$\frac{0.1 - 0.1}{0.1}$	Yes

Step 4 - Cost Effectiveness Analysis

As Low Temperature Oxidation (LTO) is technologically feasible, a cost effectiveness analysis is required.

Step 4 - Cost Effectiveness Analysis (Continued)

1. Design Parameters and Emission Reduction

- 6.0 MMBtu/hr burner system
- Operation of 24 hr/day, 120 day/yr
- District identified BARCT for existing process heaters and dryers is 82 ppmv @ 3% O₂. This limit will be used as the industry standard emission factor in this BACT analysis.

Industry standard NO_x emissions:

$$0.1 \text{ lb/MMBtu} \times 6.0 \text{ MMBtu/hr} \times 24 \text{ hr/day} = 14.4 \text{ lb/day}$$

LTO controlled NO_x emissions:

$$0.011 \text{ lb/MMBtu (9 ppmv)} \times 6.0 \text{ MMBtu/hr} \times 24 \text{ hr/day} = 1.584 \text{ lb/day}$$

$$\text{NO}_x \text{ reduction} = 14.4 - 1.584 = 12.816 \text{ lb/day, } \mathbf{0.77 \text{ ton/yr}^*}$$

$$0.024 \text{ lb/MMBtu (20 ppmv)} \times 6.0 \text{ MMBtu/hr} \times 24 \text{ hr/day} = 3.456 \text{ lb/day}$$

$$\text{NO}_x \text{ reduction} = 14.4 - 3.456 = 10.944 \text{ lb/day, } \mathbf{0.66 \text{ ton/yr}^*}$$

2. Cost-Effectiveness of LTO

Ultra Low-NO_x Burner:

Capital cost of LTO = \$140,500 plus the installation cost of \$35,000 (reference: e-mail dated 11/15/05 from R.F. MacDonald to the District).

Low-NO_x Burner:

Capital cost of LTO = \$102,300 plus the installation cost of \$25,000 (reference: e-mail dated 11/15/05 from R.F. MacDonald to the District).

Per District BACT policy, the Annualized Capital Cost is calculated as follows:

$$A = (P)[I * (1 + I)^n] / [(1 + I)^n - 1]$$

where, A = Equivalent annual cost of the control equipment

* 2.34 ton/yr = (365 day/yr x 12.8 lb/day x ton/2,000 lb)
1.99 ton/yr = (365 day/yr x 10.9 lb/day x ton/2,000 lb)

P = Present capital cost of the control equipment
I = Interest rate = 10%
n = Equipment = 10 years

Step 4 - Cost Effectiveness Analysis (Continued)

Ultra Low-NO_x Burner:

$$\begin{aligned} A &= (\$140,500 + \$35,000)[0.10 * (1 + 0.10)^{10}] / [(1 + 0.10)^{10} - 1] \\ &= (\$175,500) * (0.1627) \\ A &= \$28,554/\text{year} \end{aligned}$$

Low-NO_x Burner:

$$\begin{aligned} A &= (\$102,300 + \$25,000)[0.10 * (1 + 0.10)^{10}] / [(1 + 0.10)^{10} - 1] \\ &= (\$127,300) * (0.1627) \\ A &= \$20,712/\text{year} \end{aligned}$$

Calculation of Control Cost per Ton of Air Pollutants Reduced (NO_x):

Ultra Low-NO_x:

$$\begin{aligned} \text{Cost per Ton} &= (\$28,554) / (0.77 \text{ ton/yr}) \\ &= \$37,070/\text{ton} \end{aligned}$$

As the calculated cost of \$37,070/ton is higher than the District's cost effectiveness threshold for NO_x of \$24,500/ton, the use of Ultra Low-NO_x is not cost effective for this operation.

Low-NO_x:

$$\begin{aligned} \text{Cost per Ton} &= (\$20,712) / (0.66 \text{ ton/yr}) \\ &= \$31,382/\text{ton} \end{aligned}$$

As the calculated cost of \$31,382/ton is higher than the District's cost effectiveness threshold for NO_x of \$24,500/ton, the use of Low-NO_x is not cost effective for this operation.

Step 5 - Select BACT

The applicant has proposed the use of a NO_x emissions of 0.1 lb/MMBtu. As the applicant is proposing the most effective control technology listed in Step 1 above, BACT requirements for NO_x are met.

II. BACT Analysis for PM₁₀ Emissions:

Particulate matter emissions occur from the processing of raw cotton from wagons or modules. PM₁₀ is the only emission created by this operation. Therefore, relevant information will be cited from the referenced BACT Guideline without further analysis.

Step 1 - Identify All Possible Control Technologies

The following control technology is applicable for control of PM₁₀ from this class of source:

1D-3D Cyclone collectors

Step 2 - Eliminate Technologically Infeasible Options

The control technology cited in Step 1 is technologically feasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

There is only one applicable control technology. Therefore, ranking is not necessary.

Step 4 - Cost Effectiveness Analysis

The applicant is proposing the most stringent control technology for this emissions unit and class of source. Therefore, a cost effectiveness analysis is not necessary.

Step 5 - Select BACT

BACT for control of PM₁₀ emissions from this emissions unit and class of source is the use 1D-3D cyclone collectors. The applicant is proposing the use of 1D-3D cyclones to control PM₁₀ emissions from all new emissions points. This proposal satisfies BACT requirements.

APPENDIX C
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. The QNEC shall be calculated as follows:

QNEC = PE2 - PE1, where:

- QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.
- PE2 = Post Project Potential to Emit for each emissions unit, lb/qtr.
- PE1 = Pre-Project Potential to Emit for each emissions unit, lb/qtr.

As discussed in Section VII.A, this facility is a seasonal source that only operates during the 2nd and 3rd quarters. Using the values in Sections VII.C.2 and VII.C.6 in the evaluation above, quarterly PE2 and quarterly PE1 can be calculated as follows:

$$\begin{aligned} \text{PE2}_{\text{quarterly}} &= \text{PE2}_{\text{annual}} \div 1 \text{ quarters/year} \\ &= 5,184 \text{ lb/year} \div 1 \text{ qtr/year} \\ &= 5,184 \text{ lb NOx/qtr} \end{aligned}$$

$$\begin{aligned} \text{PE1}_{\text{quarterly}} &= \text{PE1}_{\text{annual}} \div 1 \text{ quarters/year} \\ &= 0 \text{ lb/year} \div 1 \text{ qtr/year} \\ &= 0 \text{ lb NOx/qtr} \end{aligned}$$

Quarterly NEC [QNEC]					
	NO _x (lb/qtr)	SO _x (lb/qtr)	PM ₁₀ (lb/qtr)	CO (lb/qtr)	VOC (lb/qtr)
PE2	0	0	0	0	0
PE1	0	0	0	0	0
1 st Quarter	0	0	0	0	0
PE2	0	0	0	0	0
PE1	0	0	0	0	0
2 nd Quarter	0	0	0	0	0
PE2	0	0	0	0	0
PE1	0	0	0	0	0
3 rd Quarter	0	0	0	0	0
PE2	5,184	420	20,098	1,032	312
PE1	0	0	0	0	0
4 th Quarter	5,184	420	20,098	1,032	312

APPENDIX D
Draft ATC and Emission Profile

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: S-193-2-0

LEGAL OWNER OR OPERATOR: MID-VALLEY COTTON GROWERS INC
MAILING ADDRESS: P O BOX 149
TULARE, CA 93275

LOCATION: 645 N HAMLIN
TIPTON, CA

EQUIPMENT DESCRIPTION:

TIPTON COTTON GIN #1 WITH FOUR SAW GIN STANDS, COTTON UNLOADING SYSTEM, COTTON CLEANING SYSTEM CONSISTING OF SIX INCLINED AND FOUR IMPACT CLEANERS, SIX 3.0 MMBTU/HR DRYERS, LINT CLEANING SYSTEM, BATTERY CONDENSER SYSTEM, MOTES SYSTEM, OVERFLOW SYSTEM AND TRASH SYSTEM

CONDITIONS

1. Prior to operating equipment under this Authority to Construct, permittee shall surrender PM10 emission reduction credits for the following quantity of emissions: 1st quarter - 0 lb, 2nd quarter - 0 lb, 3rd quarter - 0 lb, and fourth quarter - 20,098 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11). [District Rule 2201]
2. ERC Certificate Number S-2989-4 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]
3. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. {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]
5. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
6. {1935} Material removed from dust collector(s) shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 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

S-193-2-0 : Sep 22 2011 2:57PM - MASLOWST : Joint Inspection NOT Required

7. {1934} All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
8. Cotton gin facility dryers shall include four (4) 3 MMBtu/hr heaters with Continental burners and two (2) 3 MMBtu/hr heaters with Mitchell burners. [District Rule 2201]
9. Operation shall include cotton unloading system with trash separation including separator, feed control and eight (8) 1D-3D type cyclones. [District Rule 2201]
10. The #1 precleaning system of the saw ginning operation shall be controlled by two 46" 1D-3D cyclones with enhanced bottom cones and two 46" 1D-3D cyclones. [District Rules 2201 and 4204]
11. The #2 precleaning system of the saw ginning operation shall be controlled by three 42" enhanced 1D-3D cyclones and one 42" 1D-3D cyclone. [District Rules 2201 and 4204]
12. The #3 precleaning system of the saw ginning operation shall be controlled by two 42" 1D-3D cyclones with enhanced bottom cones and two 42" 1D-3D cyclones. [District Rules 2201 and 4204]
13. The gin stand/feeder trash system shall be controlled by two 42" 1D-3D cyclones. [District Rule 2201]
14. Operation shall include lint cleaning system with lint cleaners and twelve (12) 1D-3D type cyclones. [District Rule 2201]
15. Operation shall include battery condenser system with battery condenser, humidifier unit, bale press and three (3) 1D-3D type cyclones. [District Rule 2201]
16. The overflow system including distributor conveyor, overflow bin, and separators shall be controlled by one 42" 1D-3D cyclone with enhanced bottom cone and one 42" 1D-3D cyclones. [District Rule 2201 and 4202]
17. Operation shall include mote lint cleaning system including two mote cleaners, condenser mote press, one (3) 1D-3D type cyclone. [District Rule 2201]
18. Operation shall include mote fan trash system serving mote lint cleaning operation including one (1) 1D-3D type cyclone. [District Rule 2201]
19. Operation shall include mote trash bypass system including one (1) 1D-3D type cyclone. [District Rule 2201]
20. All 1D-3D cyclones shall operate at a cyclone inlet air velocity of 3200 + or - 400 ft/min. [District Rule 4204]
21. Particulate collection equipment shall be in operation when process equipment is in operation. [District Rule 2201]
22. All exhaust ducts shall be vented to appropriate dust collection equipment. [District Rule 2201]
23. Dust collection cyclones shall be appropriately-sized standard design 1D-3D type with long round-to-rectangular inlet transitions. [District Rule 2201]
24. There shall be no baffles or other projections inside cyclones. [District Rule 2201]
25. Total PM10 emissions from the saw cotton gin operation shall not exceed 4.28 pounds per ton of baled cotton (1.12 pound per bale, corrected to 500 pound bales). [District Rule 2201]
26. Daily ginning rate of the saw gin stand shall not exceed 250 tons of baled cotton per day (1,000 bales per day, based on 500 pound bales). [District Rule 2201]
27. Annual ginning rate of the saw gin stand shall not exceed 4,696 tons of baled cotton per year (18,783 bales per year, based on 500 pound bales). [District Rule 2201]
28. Emissions from the natural gas-fired burners shall not exceed 0.1 lb-NOx/MMBtu, 0.008 lb-SOx/MMBtu, 0.006 lb-VOC/PM10 or 0.02 lb-CO/MMBtu. [District Rule 2201]
29. Cotton gin trash shall be handled and disposed of in a manner preventing spontaneous ignition and/or fire hazard. [District Rule 2201]
30. Fugitive particulate matter emissions shall be controlled including, but not limited to the following: paving, watering, or treating with District approved dust reducing compound, all areas on the grounds subject to vehicular traffic. [District Rule 2201]

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CONDITIONS CONTINUE ON NEXT PAGE

31. Fugitive particulate matter emissions shall be controlled including, but not limited to the following: facility grounds shall be kept free of accumulations of trash and spilled cotton. [District Rule 2201]
32. Permittee shall conduct daily visual inspections of the material handling systems for leaks, breaks, or other visible signs of equipment malfunctions. [District Rule 4204]
33. The trash loading area shall be enclosed with four sides that are higher than the trash auger. Two sides shall be solid. The remaining sides shall have flexible wind barriers that extend below the top of the trash trailer sides, or have solid doors that remain shut while trash trailers are being loaded, except as necessary to accommodate trailer movement. [District Rule 4204]
34. Permittee shall maintain a record of the daily inspections of the material handling systems, including any equipment malfunctions discovered and corrective action taken to repair the malfunction, and any source test results. [District Rule 4204]
35. Permittee shall maintain daily and annual records of number and weight of bales produced, corrected to 500 pound bales, and the fuel type and volume of fuel burned. [District Rules 2201 and 4204]
36. Source testing for volumetric airflow (acfm) and PM10 emissions shall be conducted on one cyclone from each of the following systems: the #1 Pre-cleaning system, the overflow system, the ginstand/feeder trash system, the lint cleaning system, the mote lint cleaning system and the battery condenser system. [District Rule 2201]
37. {109} Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]
38. {1945} Source testing shall be conducted within 60 days of start-up of the equipment authorized by this ATC. [District Rule 2201]
39. {110} The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
40. Selection of sampling ports and traverses for source testing shall be according to EPA Method 1. Stack gas velocity and volumetric flow rate shall be determined using EPA Method 2. [District Rule 4202]
41. PM10 emissions shall be determined using EPA Methods 5, 201A, CARB Method 501 or, alternative test methods approved by the APCO and EPA. [District Rule 4202]
42. Cyclone inlet air velocity V (feet/min) shall be measured by source testing or calculated as the volumetric airflow, Q (acfm), measured by source testing, times eight, divided by the square of the cyclone diameter, D (ft), or: $V=8Q/D^2$. [District Rules 2201 and 4204]
43. All records shall be retained on site for five years and made available to the District upon request. [District Rule 4204]

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Permit #: S-193-2-0	Last Updated
Facility: MID-VALLEY COTTON GROWERS INC	09/29/2011 MASLOWST

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	5184.0	420.0	20098.0	1032.0	312.0
Daily Emis. Limit (lb/Day)	43.2	3.5	1070.0	8.6	2.6
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	0.0
Q2:	0.0	0.0	0.0	0.0	0.0
Q3:	0.0	0.0	0.0	0.0	0.0
Q4:	5184.0	420.0	20098.0	1032.0	312.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio			1.0		
Quarterly Offset Amounts (lb/Qtr)					
Q1:			0.0		
Q2:			0.0		
Q3:			0.0		
Q4:			20098.0		