

EVALUATION REPORT  
EMISSION REDUCTION CREDIT BANKING APPLICATION

PROPOSED CONDITIONAL APPROVAL

FOR

HAHN ESTATE  
dba HAHN FAMILY WINES  
P.O. Box C  
Soledad, CA 93960

BANKING TRANSACTION NO. 121  
Tracking No. ERC-23-001

PREPARED BY

Mary Giraudó  
Supervising Air Quality Engineer

MONTEREY BAY AIR RESOURCES DISTRICT  
24580 SILVER CLOUD COURT  
MONTEREY, CA 93940  
(831) 647-9411

November 17, 2023

End of Public Comment Period: December 21, 2023

Submit comments to: Mary Giraudó, [mgiraudó@mbard.org](mailto:mgiraudó@mbard.org) or via mail to the Monterey Bay Air Resources District address above.

Applicant: HAHN ESTATE  
dba HAHN FAMILY WINES

Mailing Address: P.O. Box C  
Soledad, CA 93960

Responsible Official: Paul Clifton  
Vice President of Operations/Director of Winemaking  
[pclifton@hahnfamilywines.com](mailto:pclifton@hahnfamilywines.com)  
(831) 970-8385

Facility Location: 40155 Walnut Avenue  
Greenfield, CA 93927

Banking Application:

Hahn Estate dba Hahn Family Wines (Hahn) has requested to bank volatile organic compound (VOC) emissions from the shutdown of their 5,250 Oak Barrel Capacity Wine Storage and Aging operations, as authorized under Monterey Bay Air Resources District (MBARD) Permit to Operate GNR-0018266. This type of emissions banking is allowed in MBARD Rule 215 Section 3.3.3, *Source Shutdowns or Curtailments*.

Banking of Emissions Reduction Credits (ERCs) from Source Shutdown or Curtailment:

Section 3.3.3 of Rule 215 requires the proposed emissions reductions to be banked from a source shutdown meet the following requirements:

Section 3.3.3.1 requires the reductions to be banked are real, enforceable, quantifiable, permanent, and surplus. The emission reductions proposed to be banked by Hahn are:

- **Real**, as these emission reductions have occurred due to the shutdown of the equipment since August 31, 2023;
- **Enforceable**, as these emission reductions have been verified by MBARD and the permit under which this equipment operated has been cancelled and removed from the site;
- **Permanent**, as these emission reductions do not diminish or disappear over time and the shutdown could only be reversed by re-installing equipment which would require a permit;
- **Quantifiable**, as these emission reductions have been calculated based on operation records and MBARD approved emission factors/calculation methods, and;
- **Surplus**, as these emission reductions are not required by any federal, State, Air Resources Board, District, or local agreement, law, order, plan, regulation, requirement, or rule.

Section 3.3.3.2 requires the reductions are not accounted for in the MBARD Air Quality Management Plan (AQMP). These proposed emission reductions are not accounted for in the MBARD AQMP and are surplus as described above.

Section 3.3.3.3 requires the reductions are not required by MBARD Regulations which limit emissions or define BACT for the source. MBARD does not have BACT guidelines for the storage and aging of wine in oak barrels. Nor does MBARD have a specific rule which limits emissions or defines BACT for wine storage and aging in oak barrels.

Section 3.3.3.4 requires the reductions represent emissions from a source had the source been applying BACT as defined in Rule 207. There are no MBARD BACT reductions to apply to the proposed emissions to be banked as evidenced by the equipment listed on cancelled permit GNR-0018266.

Section 3.3.3.5 requires the application for emission reduction credits be submitted to MBARD within 60 days of the surrender or cancellation of permits. The request to cancel Permit to Operate GNR-0018266 and the initial application to bank emissions were received by MBARD on September 13, 2023, and November 2, 2023, respectively.

#### Calculation of Emission Reductions Eligible for Emission Reduction Credits:

Per Section 3.2 of Rule 215, the emissions available to be banked shall be the historical emissions from the source. MBARD Rule 207, Section 7.2 establishes historical emissions as emissions based on the actual operating conditions of the source, averaged over the three consecutive years immediately preceding the date of application. A shorter period or three consecutive years within the five-year period immediately preceding the date of application may be utilized, if deemed to represent normal operations. Wine fermentation is a seasonal activity, with the peak fermentation cycle between August and October. Since the facility did not ferment wine during the peak season of 2023, the 3-year window of January 1, 2020, to December 31, 2022, was utilized to determine the 3-year baseline (normal operations) period.

MBARD created a spreadsheet of historical emissions from the abovementioned time period. The calculations were reviewed and approved by the applicant. The final spreadsheet estimates a total quantity of bankable VOC emissions of 3.33 tons per year. Emissions were estimated using MBARD's March 4, 2016, Winery Emission Factor Guidance Document. For barrel aging and storage operations, the document references the San Joaquin Valley Air Pollution Control District Rule 4695 emission factors. The calendar quarter actual emission reductions are shown in tons per year, pounds per year, and by percentage in Table 1. The supporting documentation is summarized in the calculation spreadsheet contained in Attachment 2, and the reported monthly wine oak barrel aging and storage process rates for calendar years 2020-2022 is provided in Attachment 3.

Table 1. Actual VOC Emission Reductions by Calendar Quarter				
Quarter	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Allocation in tons per year (tons/yr)	0.66	0.85	0.94	0.88
Allocation in pounds per year (lbs/yr)	1318.97	1707.54	1880.83	1753.85
Allocation in percentage <sup>1</sup> (%)	20	26	28	26

<sup>1</sup>. Percent allocations rounded to the nearest whole number.

Bankable Emissions:

Based upon Part 5 of Rule 215, the emissions available to bank are reduced by 10%. This 10% reduction is deposited into the Community ERC Account. The amount of emissions deposited into the Community ERC Account for VOC is 0.33 tons per year. The quantity of bankable VOC emissions from the equipment shutdown after the 10% community bank reduction for VOCs is 3.00 tons per year.

Allocation of Banked Emissions After Funding for the Community ERC Account:

The 3.0 tons per year of banked emissions will be allocated in emissions per calendar quarter. The calendar quarter allocation values after the 10% community bank reduction are shown in tons per year, pounds per year, and by percentage in Table 2.

Table 2. Allocation of Banked VOC Emission Reduction Credits by Calendar Quarter				
Quarter	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Allocation in tons per year (tons/yr)	0.59	0.77	0.85	0.79
Allocation in pounds per year (lbs/yr)	1187.07	1536.79	1692.75	1578.47
Allocation in percentage <sup>1</sup> (%)	20	26	28	26

<sup>1</sup>. Percent allocations rounded to the nearest whole number.

Finally, Section 6.2.1.2 of Rule 215 requires banked emissions utilized as offsets at Major Sources be reduced by Reasonably Available Control Technology (RACT) at the time of use. Therefore, the potential value of these offsets when utilized at a Major Source would be determined at the time of use.

## **References**

Engineering Evaluation for Application GNR-018435

MBARD [Winery Emission Factor Guidance](#)

San Joaquin Valley Air Pollution Control District [Rule 4695](#), Brandy Aging and Wine Aging Operations

## **Attachments**

Attachment 1 – Banking Application

Attachment 2 – Actual VOC Emission Reduction Calculations

Attachment 3 – Monthly Wine Process Throughput Rates for CY 2022, 2021 and 2022

Attachment 4 – Permit to Operate GNR-0018266

Attachment 5 – Request to Cancel Permit to Operate GNR-0018266

# ATTACHMENT 1



## APPLICATION FOR EMISSION REDUCTION CREDITS

This application must be filled out completely. Emission reductions proposed to be transferred must meet the requirements of District Rule 215.

**Applicant Information:** Hahn Estate

Legal Name of Applicant: Hahn Estate dba Hahn Family Wines

Business Mailing Address: PO Box C Soledad CA 93960

Phone Number and Email Address: 831-970-8385 pclifton@hahnfamilywines.com

Contact Person and Title: Paul Clifton - VP of Operations

Pursuant to the provisions of the Health and Safety Code of the State of California and the Rules and Regulations of the Air Pollution Control District, application is hereby made to register emission reductions. Attach a letter describing the how the proposed emission reduction was achieved, when the reduction occurred, the amount and method of quantifying each pollutant reduced, operating logs, surrender of permit for the equipment that is subject to the ERC application.

I hereby request that the Monterey Bay Air Resources District begin processing this application. I agree to pay any and all fees required by District rules for processing this application and for the transfer of any emission reduction credits. I agree that the obligation to compensate the District for time spent processing my application exists even if I abandon the project and withdraw my application or should my application subsequently be disapproved.

Signature of Responsible Official, Partner, or Sole Proprietor of Organization:

Print Name and Official Title of Person Signing This Application: Paul Clifton, V.P. of Operations/Director of Winemaking

Date: 11/1/2023

# ATTACHMENT 2



## WINE FERMENTATION AND OAK BARREL AGING/STORAGE EMISSION CALCUATIONS

**Winery Name:** Hahn Estate dba Hahn Family Wines

**Contact Name & Email:** Liz Ellis (831-678-2132 x625)

**Permit Number (If known):** GNR-0018266 (Cancel request 9/13/2023)

Quarterly Wine Fermentation Inputs		
Information <sup>1</sup>	Value	Reference
1st Quarter Red Wine Fermentation (gal)		Permit Application
2nd Quarter Red Wine Fermentation (gal)		Permit Application
3rd Quarter Red Wine Fermentation (gal)		Permit Application
4th Quarter Red Wine Fermentation (gal)		Permit Application
1st Quarter White Wine Fermentation (gal)		Permit Application
2nd Quarter White Wine Fermentation (gal)		Permit Application
3rd Quarter White Wine Fermentation (gal)		Permit Application
4th Quarter White Wine Fermentation (gal)		Permit Application

<sup>1</sup> Please input combined values for both tank and oak barrel fermentation

Quarterly Wine Storage/Aging Inputs (Units In # Of Physical Barrels Stored)		
Information	Value	Reference
1st Quarter Red Wine Storage/Aging (barrels)	3,258	Permit Application
2nd Quarter Red Wine Storage/Aging (barrels)	4,171	Permit Application
3rd Quarter Red Wine Storage/Aging (barrels)	4,545	Permit Application
4th Quarter Red Wine Storage/Aging (barrels)	4,238	Permit Application
1st Quarter White Wine Storage/Aging (barrels)		Permit Application
2nd Quarter White Wine Storage/Aging (barrels)		Permit Application
3rd Quarter White Wine Storage/Aging (barrels)		Permit Application
4th Quarter White Wine Storage/Aging (barrels)		Permit Application

Annual Wine Inputs & Properties		
Information	Value	Reference
Red Wine Production (gal/yr)	0	Calculated Value
White Wine Production (gal/yr)	0	Calculated Value
Red Wine Barrel Storage (barrel/yr)		Permit Application
White Wine Barrel Storage (barrel/yr)		Permit Application
Percent Wine Loss by Volume (gal/gal-wine)	3.00%	MBARD Default/ Permit Application

Emission Factors		
Information	Value	Reference
Red Wine Fermentation (lb/1000 gal)	6.2	CARB March 2005
Red Wine Aging/Storage (lb/1000 gal-yr)	27.83	Calculated Value
White Wine Fermentation (lb/1000 gal)	2.5	CARB March 2005
White Wine Aging/Storage (lb/1000 gal-yr)	25.83	Calculated Value

Wine Fermentation & Oak Barrel Aging/Storage VOC Potential To Emit <sup>1</sup>		
Information	lb/day	tons/year
Red Wine Fermentation	0.00	0.00
White Wine Fermentation	0.00	0.00
Red Wine Aging/Storage	20.44	3.33
White Wine Aging/Storage	0.00	0.00
Total	20.44	3.33

<sup>1</sup> PTE from fermentation and aging/storage reflects the emissions from the total highest emitting quarter.

## WINE FERMENTATION AND OAK BARREL AGING/STORAGE EMISSION CALCUATIONS

**Winery Name:** Hahn Estate dba Hahn Family Wines

**Contact Name & Email:** Liz Ellis (831-678-2132 x625)

**Permit Number (If known):** GNR-0018266 (Cancel request 9/13/2023)

Wine Properties		
Information	Value	Reference
Barrel Conversion Factor (gal/yr)	59	Standard/ Permit Application
Specific Gravity of Ethanol	0.79	MSDS
Density of Water (lb/gal)	8.34	Standard
Density of Ethanol (lb/gal)	6.59	Calculated Value
Red Wine Ethanol Volume Percent (gal/gal-wine)	14.00%	MBARD Default/Permit Application
White Wine Ethanol Volume Percent (gal/gal-wine)	13.00%	MBARD Default/Permit Application
Red Wine Ethanol Weight Percent (lb/lb-wine)	11.40%	Calculated Value
White Wine Ethanol Weight Perent (lb/lb-wine)	10.56%	Calculated Value
Red Wine Density (lb/gal)	8.14	Calculated Value
White Wine Density (lb/gal)	8.16	Calculated Value

Quarterly Fermentation Emissions				
Process	1 <sup>st</sup> Quarter	2 <sup>nd</sup> Quarter	3 <sup>rd</sup> Quarter	4 <sup>th</sup> Quarter
Fermentation Red	0	0	0	0
Daily VOC (lb/day)	0	0	0	0
Fermentation White	0	0	0	0
Daily VOC (lb/day)	0	0	0	0

Quarter Barrel Emissions				
Process	1 <sup>st</sup> Quarter	2 <sup>nd</sup> Quarter	3 <sup>rd</sup> Quarter	4 <sup>th</sup> Quarter
Red Storage	1318.97	1707.54	1880.83	1753.85
Daily VOC (lb/day)	14.66	18.76	20.44	19.06
White Storage	0	0	0	0
Daily VOC (lb/day)	0	0	0	0

Total Quarterly Wine Fermentation & Storage Emissions (lb/day)				
Total	1 <sup>st</sup> Quarter	2 <sup>nd</sup> Quarter	3 <sup>rd</sup> Quarter	4 <sup>th</sup> Quarter
	14.66	18.76	20.44	19.06
Process	1 <sup>st</sup> Quarter	2 <sup>nd</sup> Quarter	3 <sup>rd</sup> Quarter	4 <sup>th</sup> Quarter
Fermentation Red	0	0	0	0
Fermentation White	0	0	0	0
Red Storage	14.66	18.76	20.44	19.06
White Storage	0	0	0	0

<b>Total Quarterly Maximum Emissions</b>	20.44	lb/day
<b>Which Quarter Has The Maximum Emissions?</b>	3rd Quarter	

# ATTACHMENT 3

**Jekel - 40155 Walnut Ave., Greenfield**

**Jekel - Maximum Oak Barrels 5,250**

2020	Red Wine Gals	White Wine Gals	
JAN	269,085		
FEB	172,868		
MAR	194,326	212,093	QTR1 Average
APR	246,246		
MAY	230,847		
JUN	267,468	248,187	QTR 2 Average
JUL	261,745		
AUG	294,732		
SEP	289,363	281,947	QTR3 Average
OCT	304,585		
NOV	295,322		
DEC	281,634	293,847	QTR4 Average

**Condition 1 - The maximum annual average oak barrel wine aging/storage capacity shall not exceed 309,750 gallons per year, based upon calendar year quarterly averages**

**Jekel - Maximum Oak Barrels 5,250**

**2021 Jekel - 40155 Walnut Ave., Greenfield**

	Red Wine Gals	White Wine Gals	BBLs	
JAN	269,085		4563	
FEB	220,782		3744	
MAR	216,593		3673	235,487 QTR1 Average
APR	223,042		3782	
MAY	248,400		4212	
JUN	278,729		4726	250,057 QTR 2 Average
JUL	271,531		4604	
AUG	227,945		3865	
SEP	282,555		4791	260,677 QTR3 Average
OCT	287,965		4883	
NOV	195,403		3314	
DEC	171,372		2907	218,247 QTR4 Average

**Condition 1 - The maximum annual average oak barrel wine aging/storage capacity shall not exceed 309,750 gallons per year, based upon calendar year quarterly averages**

2022 Jekel - 40155 Walnut Ave., Greenfield

	Red Wine Gals	White Wine Gals	BBLs	Quarterly Average
JANUARY	130326		2211	
FEBRUARY	126196		2141	
MARCH	130739		2218	129087 QTR 1
APRIL	218209		3701	
MAY	254335		4313	
JUNE	247768		4202	240104 QTR 2
JULY	269480		4570	
AUGUST	263285		4465	
SEPTEMBER	252683		4285	261816 QTR 3
OCTOBER	247963		4205	
NOVEMBER	247491		4197	
DECEMBER	218646		3708	238033 QTR 4
<b>Total</b>				
	2607121		44216	

# ATTACHMENT 4



MONTEREY BAY AIR RESOURCES DISTRICT

PERMIT TO OPERATE

GNR-0018266

24580 SILVER CLOUD CT., MONTEREY, CA 93940 TELEPHONE (831) 647-9411 • FAX (831) 647-8501
OPERATION UNDER THIS PERMIT MUST BE CONDUCTED IN COMPLIANCE WITH ALL DATA AND SPECIFICATIONS INCLUDED WITH THE
APPLICATION UNDER WHICH THIS PERMIT IS ISSUED. THE EQUIPMENT MUST BE PROPERLY MAINTAINED AND KEPT IN GOOD
CONDITION AT ALL TIMES. THIS PERMIT TO OPERATE MUST BE POSTED OR ACCESSIBLE.

LEGAL OWNER HAHN ESTATE
OR OPERATOR: dba HAHN FAMILY WINES

EQUIPMENT 40155 Walnut Avenue
LOCATED AT: Greenfield, CA 93927

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

OAK BARREL STORAGE AND AGING:

A Maximum Of 5,250 Oak Barrels, 59 Gallons Capacity Each, Used For The Aging And Storage Of Wine.

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

Conditions:

- 1. By March 1 of each year Hahn Estate dba Hahn Family Wines shall report to the District the
annual (calendar year) amount of red wine aged/stored in oak barrels, reported by month in
units of gallons. The report shall be submitted electronically to reports@mbard.org. [Basis:
District Rule 207]
2. The maximum annual average oak barrel wine aging/storage capacity shall not exceed
309,750 gallons per year, based upon calendar year quarterly averages. [Basis: District Rule
207]
3. Hahn Estate dba Hahn Family Wines shall track the amount of red wine aged/stored in oak
barrels, and record by month in units of gallons. [Basis: District Rule 207]
4. Hahn Estate dba Hahn Family Wines shall maintain the following information. This data shall
be maintained on-site for a minimum of three (3) years from the date of entry and made
available to the District upon request.
a. The monthly US Department of the Treasury Alcohol and Tobacco Tax and Trade
Bureau (TTB) "Report of Wine Premises Operations" reports.

THIS PERMIT BECOMES VOID UPON ANY CHANGE OF OWNERSHIP OR ADDRESS, OR ANY ALTERATION.

THIS PERMIT DOES NOT AUTHORIZE THE EMISSIONS OF AIR
CONTAMINANTS IN EXCESS OF THOSE ALLOWED BY ARTICLE 1, CHAPTER 3,
PART 4, DIVISION 26 OF THE HEALTH & SAFETY CODE OF THE STATE OF
CALIFORNIA OR THE RULES AND REGULATIONS OF THE AIR POLLUTION
CONTROL DISTRICT. THIS PERMIT CANNOT BE CONSIDERED AS
PERMISSION TO VIOLATE EXISTING LAWS, ORDINANCES, REGULATION OR
STATUTES OF OTHER GOVERNMENTAL AGENCIES.

Mary Miranda, Esq.
AIR POLLUTION CONTROL OFFICER

DATE 2/24/2020



- b. The annual (calendar year) amount of red wine aged/stored in oak barrels shall be maintained in a clear and legible log in units of gallons.
- c. The average annual weighted alcohol content for red wine production.

[Basis: District Rule 207]

- 5. The District may review the emission factors should Hahn Estate dba Hahn Family Wines exceed 14.32% weighted average alcohol content based on a cumulative weighted average of three (3) or more consecutive years of data. [Basis: District Rule 207]
- 6. 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 or darker than Ringelmann 1, or equivalent 20 percent opacity. [Basis: District Rule 400]
- 7. No emissions shall constitute a public nuisance. [Basis: District Rule 402]

**Note:** The annual renewal date of this permit is 2/5.

# ATTACHMENT 5



## Request to Cancel a Permit to Operate

<b>Section A - Permit Information</b>	
Company Name (Business Name of Operator As It Appears On The Permit): Hahn Estate	
Permit Number: GNR-0018266	Date Issued: 2/24/2020
Equipment : Oak Barrel Storage and Aging	
<b>Section B - Equipment Location Address</b>	<b>Section C - Permit Mailing Address</b>
Select One: <input checked="" type="radio"/> Fixed Location <input type="radio"/> Various Location (For equipment operated at various locations, provide address of initial site.) 40155 Walnut Avenue Street Address Greenfield, CA 93927 City Zip Paul Clifton VP of Operations Contact Name Title 831-970-8385 Phone # Ext. Fax # pclifton@hahnfamilywines.com email	<b>Permit and Correspondence Information:</b> <input type="checkbox"/> Check here if same as equipment location address PO Box C Address Soledad, CA 93960 City Zip Paul Clifton VP of Operations Contact Name Title 831-970-8385 Phone # Ext. Fax # pclifton@hahnfamilywines.com email
<b>Section D - Reason for Request</b>	
Cancellation of the Permit to Operate described above is hereby requested for the following reason(s):	
<input type="checkbox"/> Equipment: <input type="radio"/> Sold <input type="radio"/> Destroyed or <input type="radio"/> Removed from site. Effective Date: _____ <input type="checkbox"/> Equipment was replaced. New Permit Number: _____ <input checked="" type="checkbox"/> Equipment will no longer be operated. Date Operation Ended: 8/31/2023 <input type="checkbox"/> Equipment is exempt from permit requirements by Rule 201. Indicate Rule Section: _____ <input type="checkbox"/> Business & Equipment Sold. Effective Date: _____ Name and Address of new owner: Name: _____ Address: _____ Phone #: _____ <input type="checkbox"/> Other (explain): _____	
It is understood that any future use of this equipment may require a new permit application in accordance with the laws then in effect.	
<b>Section E - Authorization/Signature</b>	
I hereby certify that all information contained herein and information submitted with this application is true and correct.	
Signature of Responsible Official:	Title of Responsible Official: VP of Operations
Print Name of Responsible Official: Paul Clifton	Date: 9/13/23
Phone #: 831-970-8385	Fax #:

**Return form by mail to address above "Attn: Engineering" or email to [jduran@mbard.org](mailto:jduran@mbard.org).**