Note: This is a reference cited in *AP 42, Compilation of Air Pollutant Emission Factors, Volume I Stationary Point and Area Sources.* AP42 is located on the EPA web site at www.epa.gov/ttn/chief/ap42/

The file name refers to the reference number, the AP42 chapter and section. The file name "ref02_c01s02.pdf" would mean the reference is from AP42 chapter 1 section 2. The reference may be from a previous version of the section and no longer cited. The primary source should always be checked.

Background Report Reference

AP-42 Section Number: 9.10.2

Background Chapter: 4

Reference Number: 3

Title: Almond Huller Baghouse Emisisons Tests, Superior Farms

Truesdail Laboratories

Truesdail Laboratories

November 1980

AP-42 Section 9.10.2.1
Reference 9
Report Sect.
Reference

REPORT

TRUESDAIL LABORATORIES, INC.

DUPLICATE

CHEMISTS - MICROBIOLOGISTS - ENGINEERS
RESEARCH - DEVELOPMENT - TESTING

4101 N. FIGUEROA STREET
LOS ANGELES 90065
AREA CODE 213 • 225-1564
CABLE: TRUELABS

CLIENT Superior Farming Company
[illegible] Stockdale Highway
Bakersfield, California 93309
Attn: Mr. Dave Nelson

SAMPLE Almond Huller Baghouse emissions. Tests on 3 Baghouses, on October 1, 2, and 6, 1980
P. O. No. 98819

DATE November 5, 1980

RECEIVED September 12, 1980

LABORATORY NO. 34506

INVESTIGATION

Sampling and analysis of 3 Baghouse emissions for particulate matter concentration and emission rates.

RESULTS

On October 1, 2 and 6, 1980, representatives of Truesdail Laboratories, Inc., conducted tests on each of (three) baghouse serving almond hullers and precleaners owned by Superior Farming Company, located at their Bakersfield (Kern County), California, facility. The tests were conducted to determine particulate matter concentration and emission rates of the three baghouses.

The particulate matter sampling was performed according to EPA method 5. The maximum number of traverse points (24) was chosen because of the minimum allowable number of diameters from the nearest obstruction; both, upstream and downstream from the sampling ports.

The tests were run while the systems were under normal operating and load conditions.

Each of the baghouses has multiple exhaust fans. The Kern County APCD gave its approval to test only one exhaust outlet on each of the baghouses and to multiply the flow rates and particulate matter emission rates by the number of outlets per baghouse.

The exhaust fans had no provisions for testing the flue gas (no stacks), so a special portable manifold was attached to one of the fans. This permitted testing of the flue gas by exhausting it through a rectangular stack. Three sampling ports were positioned one-half of the effective diameter upstream and two effective diameters downstream of the nearest bend or obstruction.

[illegible] COUNTY HL

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of similar products. As a mutual protection to clients, the public and these Laboratories, this report is submitted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in advertising or publicity matter without prior written authorization from these Laboratories.

The results are tabulated below:

Summary of the Results

Source	Emission rate, lbs/hour
1) Huller #1 & #2 plus Precleaner #1	5.36
2) Precleaner #2	0.60
3) Huller line #3	0.16
TOTAL:	6.12
or in 24 hours -	146.9 lbs

SAUNCO

The Kern County APCD Regulations limit the particulate emissions to a maximum of 200 lbs/24 hours. The results of the tests show the emissions to be below this amount.

TRUESDAIL LABORATORIES, INC. -3- Laboratory No. 34506

Test Date: October 1, 1980

Precleaner No. 2

(Baghouse equipped with two exhausts)

Test No.		1	2
Testing time:	Start	1021	1340
	Finish	1235	1550
Flue Gas:	Temperature, °F	104	105
	Velocity, ft/sec	43.8	43.8
	*flue dimensions, inches	30x39x2	---"---
	*flue area, sq. ft.	16.25	16.25
	static pressure, in. H_2O	-0.02	-0.02
*Flow Rates:	CFM	42,670	43,390
	SCFM	39,320	39,140
	DSCFM	38,680	38,800
Water Vapor, % (by vol.)		1.55	1.6

Particulate Matter

	1		2
Sample collection, grams	0.0071		0.0055
Sample volume, DSCF	54.10		53.40
Percent isokinetic sampling	98.6		98.8
Concentration, grains/DSCF	0.0020		0.0016
*Emission rate, lbs/hour	0.67		0.53
Average, lbs/hour	---	0.60	---

*calculated for both exhausts

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NOV 7 1980
KERN COUNTY HEALTH DEPT.

Test Date: October 2, 1980

Huller Line No. 3

(Baghouse equipped with two exhausts)

Test No.	1	2
Testing time: Start	1040	1500
Finish	1311	1710
Flue gas: Temperature, °F	103	109
Velocity, ft/sec	48.1	48.5
*flue dimensions, inches	30x39x2	---"---
*flue area, sq. ft.	16.25	16.25
static pressure, in. H_2O	-0.5	-0.5
*Flow Rate: CFM	46,890	47,300
SCFM	43,510	43,450
DSCFM	42,810	42,890
Water Vapor, % (by vol.)	1.6	1.3

Particulate Matter

Sample collection, grams	0.0017		0.0018
Sample volume, DSCF	60.03		60.11
Percent isokinetic sampling	99.6		99.6
Concentration, grains/DSCF	0.0004		0.0004
*Emission Rate, lbs/hour	0.16		0.15
Average, lbs/hour	---	0.16	---

*calculated for both exhausts

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NOV 1980
KERN COUNTY HEALTH DEPT

Test Date: October 6, 1980

Baghouse Serving
Mullers #1 and #2
and Precleaner #1

(Baghouse equipped with six exhausts)

Test No.	1	2
Testing time: Start	1105	1307
Finish	1224	1425
Flue Gas: Temperature, °F	97	101
Velocity, ft/sec	43.9	47.0
*flue dimensions, inches	30x39x6	---"---
*flue area, sq. ft.	48.75	48.75
static pressure, in. H_2O	-0.19	-0.19
*Flow Rate: CFM	128,500	137,600
SCFM	120,500	130,400
DSCFM	118,400	128,200
Water Vapor, % (by vol.)	1.7	1.7

Particulate Matter

Sample collection, grams	0.0099		0.0132
Sample volume, DSCF	34.66		35.76
Percent isokinetic sampling	102.		101.
Concentration, grains/DSCF	0.0045		0.0057
*Emission rate, lbs/hour	4.56		6.15
Average, lbs/hour	---	5.36	---

*calculated for six exhausts

Photocopies of field data and calculation sheets are appended to this report.

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

James Bandziulis
Supervisor, Air Pollution Testing

Company: Superior Farming Co.
Permit No: 3032005
Equipment: Precleaner #2 fabric collector
Test Date: Oct. 1, 1980

SUMMARY OF SOURCE TEST RESULTS

Prepared By: Joe O'Bannon

Date: 12-3-80

L. Landis

POLLUTANTS	EMISSIONS								Removal Efficiency %	Emission Factor lb/ton	
	Inlet				Outlet						
	Concentration			Mass Flow Rate lb/hr	Concentration			Mass Flow Rate lb/hr			
	gr/scf	@12% CO_2	ppmv		gr/scf	@12% CO_2	ppmv			Inlet	Outlet
Particulate mean					0.0020 0.0016 0.0018			0.67 0.53 0.60			0.032
Sulfate											
SO_2											
NO_x as NO_2											
Fuel Rate/ Process Rate	18.67 t/h										
Operating Conditions	Normal										
Remarks	The source test was conducted by Truesdail Labs, Inc. to determine initial compliance. This baghouse had two stacks. The test was conducted on one stack and the mass flow rate results and emission factor results are calculated for both. 0.02 GR/SCF IS NSPS LIMIT. OK FOR PERMITS JT 1-16-81										

Company: Superior Farming Co.
Permit No: 3032003A
Equipment: Huller line #3 fabric collector
Test Date: October 2, 1980

SUMMARY OF SOURCE TEST RESULTS

Prepared By: Joe O'Bannon
Date: 12-3-80

L. Landis

POLLUTANTS	EMISSIONS – Inlet – Concentration gr/scf	Inlet – Concentration @12% CO_2	Inlet – Concentration ppmv	Inlet – Mass Flow Rate lb/hr	Outlet – Concentration gr/scf	Outlet – Concentration @12% CO_2	Outlet – Concentration ppmv	Outlet – Mass Flow Rate lb/hr	Removal Efficiency %	Emission Factor lb/ton – Inlet	Emission Factor lb/ton – Outlet
Particulate mean					0.0004 0.0004 0.0004			0.16 0.15 0.16			.015
Sulfate											
SO_2											
NO_x as NO_2											
Fuel Rate/ Process Rate	10.63 t/h										
Operating Conditions	Normal										
Remarks	The source test was conducted by Truesdail Labs., Inc. to determine initial compliance. This baghouse had two stacks. The test was conducted on one stack and the mass flow rate results and the emission factor results are calculated for both. 0.007 GR/SCF IS NSR LIMIT. CK [illegible] RESULTS. TT 1-16-81										

Company: Superior Farming Co.
Permit No: 3032002A
Equipment: ICA Fabric collector
Test Date: October 6, 1980

SUMMARY OF SOURCE TEST RESULTS

Prepared By: Joe O'Bannon

Date: 12-3-80

F. Jandis

POLLUTANTS	EMISSIONS										
	Inlet Concentration			Mass Flow Rate lb/hr	Outlet Concentration			Mass Flow Rate lb/hr	Removal Efficiency %	Emission Factor lb/ton	
	gr/scf	@12% CO_2	ppmv		gr/scf	@12% CO_2	ppmv			Inlet	Outlet
Particulate mean					.0045 .0057 .0051			4.56 6.15 5.36			0.16
Sulfate											
SO_2											
NO_x as NO_2											
Fuel Rate/ Process Rate	Precleaner #1 = 16.30 t/h; huller #1 = 7.84 t/h; huller #2 = 9.08 t/h.										
Operating Conditions	Normal. Hullers # 1 & 2 and precleaner #1 share this fabric collector.										
Remarks	The source test was conducted by Truesdail Labs to determine initial compliance. The fabric collector is common to the three lines, with six stacks. The test was run on one stack and the mass flow rate and emission factor results are calculated for all six.										

.01 gr/scf IS NSR LIMIT. OK FOR PERMITS F 1-16-81