

Page 2, SN 41878AH
Southwestern Refinery
May 26, 1989

Discussion: Hager Laboratories, Inc., has been accredited by the American Industrial Hygiene Association (AIHA) since 1977 and is enrolled in the AIHA Proficiency Analytical Testing (PAT) Program for phase contrast microscopy. Microscopists have completed the NIOSH 582 course "Sampling and Evaluating Airborne Asbestos Dust".

Laboratory data are filed and available upon request. A portion of each sample is retained for subsequent review and future analysis.

If you have any questions, please contact John Kroll or Nancy Dow, of our Technical Services Department, at (303)790-2727 or toll free at (800)282-1835.

Bulk Sample
Analyzed by:

Thomas A. Sweet

Date Analyzed:

5/17/89

Submitted by:

Sandra L. McCarty for
Patricia G. Manning
Microscopy Supervisor

PM/agg

SN 89115AH
May 26, 1989

TABLE 2

Sample Number	Counted (fibers)	Counted (fields)	Total (fibers)	Air Volume (liters)	Air Concentration (fibers/cc)
89115	102.	41.	122000.	305.	0.40

1B 002116

TABLE 1

Sample ID	Sample Description
9117	
Y	Homogeneous (Y/N)
grey white	Sample Color
1	No. of Layers
Y	Asbestos Present (Y/N)
5-15	Chrysotile (%)
	Amosite (%)
	Crocidolite (%)
	Anthophyllite (%)
	Tremolite/ Actinolite (%)
5-15	Total Asbestos (%)
30-50	Fibrous Glass (%)
trace	Cellulose Fibers (%)
trace mineral	Other Fibers (Type/%)
50-75	Non-Fibrous Material (Type/%)

SWRt/Asbestos 2256

OTE: trace = less than or equal to 1%.

1B 002114

41878 AN

Service Number

Client Name

SOUTH WEST, CAN

Client Address

Client Address
Cayos Christi, TX

[illegible]

Signature of Sampler

Print Last Name

Date of Sampling

Samples Shipped to Lab By

Date Shipped

Samples Relinquished to Lab By

Date _____

5/18/85

Sample Received at Lab By

VTSR

○

Transfer Number	Received By	Date	Time
1.	<i>[Signature]</i>	5/17/88	1355
2.			
3.			
4.			
5.			

Form Log-1

109

SWRf/Asbestos	2260	1B 002118
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HAGER

LABORATORIES, INC.

11234 E. Caley Avenue
Englewood, Colorado 80111

HAGER SERVICE NUMBER

(lab use only)

IH EN AH AN BT

YOUR CUSTOMER ID CODE

(optional)

2034

Samples Submitted By:

Company
Name

SOUTHWESTERN

Address

P.O. Box 9217

City, State

CORPUS CHRISTI, TX

Zipcode

78406

Telephone

512-884-8863

Contact

STEPHANIE SETTLES

() Mr (X) Ms () Mrs () Dr

Please check one

() Check here if above info has changed

Original of Report Same (X) or To:

Invoice Same (X) or To:

Company
Name

Address

City, State

Zipcode

Contact

Purchase Order #

Office Use Only M () A ()

Prepaid () check #

Additional Copy of Report To:

Send mailers (), data sheets (), labels (), Other (X) FED X FORMS.

Special Instructions

SP #

Asbestos Analyses

- (X) Standard Service
- () 48-Hour Rush Service*
- () 24-Hour Rush Service*
- () 2-Hour Rush Plus Service*
- () Phone Results
- () Special Report Format or Information (see back).

May require additional fee.

* Additional Fee

Other Analyses

- () Standard Service
- () Rush Service*
- () Rush Plus Service*
- () Phone Results
- () GC/Mass Spectroscopy*
- () Special Report Format or Information (see back).

May require additional fee.

* Additional Fee

Sample Information

1. Samples were mailed in 3 1 on 5-9-89
(number mailers/boxes) (date)
2. If sampling media is not standard charcoal tube, cellulose or PVC filters please describe _____
3. If samples for hydrocarbon mixtures (petroleum distillates, Solvesso 100 etc.) or oil mist, a 2-3cc bulk sample is required. This should be sent in a separate mailer. List any bulk sent _____

TOLL FREE 1-800-282-1835 or inside COLORADO (303) 790-2727

110687

1B 002115

INSTRUCTIONS: Originator attaches Part 2 to laboratory results and forwards to Medical Services.

ID/SAMPLE NO.	1792
DATE	5-8-89

INDUSTRIAL HYGIENE SURVEY DATA - AIR MONITORING KM-4293-A

FACILITY	Southwestern	WORK LOCATION	CAT I
EMPLOYEE NAME (LAST, FIRST)	VALLEJO, VICTOR	EMPLOYEE NUMBER	464 - 58 - 2722
JOB TITLE	INSULATOR	SURVEYOR	S. SETTLES

TYPE OF PERSONAL PROTECTIVE EQUIPMENT	RESPIRATOR	MSA - Half face w/ HEPA	SAMPLING CONDITIONS	TEMPERATURE	86 °F	CALIBRATION RECORD	PUMP MANUFACTURER/S/N	MSH 1
	BODY	TYVEK		RELATIVE HUMIDITY	61 %		PRE FLOW RATE	2.04 l/min
	GLOVES	PVC		BAROMETRIC PRESSURE	29.97 "Hg		POST FLOW RATE	2.02 l/min
	OTHER	H. HAT / S. GLASSES		AIR VELOCITY	SE 16 fpm (mph)		DIFFERENCE FLOW	0.02

SAMPLING DATA	Lab Sample Number	89115			
	I.D. Number	1792			
	Time On	0836	0954		
	Time Off	0920	1140		
	Total Time (min.)	150	90 min		TOTAL TIME
	Flow Rate (LPM)	2.03 l/min			
	Sample Media	MCEF - 25mm (can)			
	Volume (Liters)	183 305			TOTAL VOLUME
Net Sample Wt.					

LABORATORY RESULTS	1.	ASBESTOS	0.4 f/cc		
	2.				
	3.				
	4.				
	5.				
	6.				

FOR MEDICAL SERVICES USE ONLY SAMPLE ANALYSIS	SUBSTANCE	TWA (Time)	TWA 8(hr)	UNITS	AUTHORITY	STND. NO.	SEVERITY	ANALYTICAL METHOD
	1. ASBESTOS	ONBM	0.13	f/cc				NIOSH 7400
	2.							
	3.							
	4.							
	5.							
	6.							

LABORATORY USED: HAGER

WORK ACTIVITIES, OPERATION, LOCATION, VENTILATION, CONTROLS:
REMOVING INSULATION FROM I-BEAMS USING GLOVE BAG METHOD.

REVIEWED BY	DATE	BLANKS (No.)	ONE
		BULKS (No.)	ONE

COMMENTS

INSTRUCTIONS: Originator attaches Part 2 to laboratory results and forwards to Medical Services.

ID/SAMPLE NO.	1340
DATE	5-8-89

INDUSTRIAL HYGIENE SURVEY DATA - AIR MONITORING KM-4293-A

FACILITY	Southwestern	WORK LOCATION	Cat I
EMPLOYEE NAME (LAST, FIRST)	TERRELL, BENNIE	EMPLOYEE NUMBER	454 - 04 - 0503
JOB TITLE	insulator	SURVEYOR	S. Settles

TYPE OF PERSONAL PROTECTIVE EQUIPMENT	RESPIRATOR	MSA - HALF - FACE	SAMPLING CONDITIONS	TEMPERATURE	86	°F	CALIBRATION RECORD	PUMP MANUFACTURER/S/N	MSA # 2
	BODY	TYVEK		RELATIVE HUMIDITY	61	%		PRE FLOW RATE	2.01 l/min
	GLOVES	PVC		BAROMETRIC PRESSURE	29.97	"Hg		POST FLOW RATE	1.98 l/min
	OTHER	H-HAT / S. GLASSES		AIR VELOCITY	SE 16	fpm (mph)		DIFFERENCE FLOW	0.03

SAMPLING DATA	Lab Sample Number	8916	BENNIE
	I.D. Number	1840	1840A
	Time On	1005	
	Time Off	1140	
	Total Time (min.)	95	
	Flow Rate (LPM)	2.00 l/min	
	Sample Media	MCEF - 25mm EXT. COUPL	
	Volume (Liters)	190 L	
Net Sample Wt.			

LABORATORY RESULTS	1.	ASBESTOS
	2.	
	3.	
	4.	
	5.	
	6.	

FOR MEDICAL SERVICES USE ONLY SAMPLE ANALYSIS	SUBSTANCE	TWA (Time)	TWA 8(hr)	UNITS	AUTHORITY	STD. NO.	SEVERITY	ANALYTICAL METHOD
	1.							
	2.							
	3.							
	4.							
	5.							
	6.							

LABORATORY USED	HAGER
(WORK ACTIVITIES, OPERATION, LOCATION, VENTILATION, CONTROLS)	

REVIEWED BY	DATE	COMMENTS	BLANKS (No.)	ONE
		SAMPLE FILTER WAS TORN AND LAB WAS UNABLE TO ANALYSE.	BULKS (No.)	ONE

INSTRUCTIONS: Originator attaches Part 2 to laboratory results and forwards to Medical Services.

ID/SAMPLE NO	1851
DATE	5-8-89

INDUSTRIAL HYGIENE SURVEY DATA - AIR MONITORING KM-4293-A

FACILITY	SOUTHWESTERN	WORK LOCATION	CAT I - (I-Beams)
EMPLOYEE NAME (LAST, FIRST)	BULK SAMPLE	EMPLOYEE NUMBER	
JOB TITLE		SURVEYOR	Settles

TYPE OF PERSONAL PROTECTIVE EQUIPMENT	RESPIRATOR	SAMPLING CONDITIONS	TEMPERATURE	CALIBRATION RECORD	PUMP MANUFACTURER/S.N.
	BODY		RELATIVE HUMIDITY		PRE FLOW RATE
	GLOVES		BAROMETRIC PRESSURE		POST FLOW RATE
	OTHER		AIR VELOCITY		DIFFERENCE FLOW

SAMPLING DATA	Lab Sample Number	89117			
	I.D. Number	1851			
	Time On	—			
	Time Off	—			
	Total Time (min.)	—			TOTAL TIME
	Flow Rate (LPM)	—			
	Sample Media	—			
	Volume (Liters)	—			TOTAL VOLUME
	Net Sample Wt.	—			

LABORATORY RESULTS	1.	ASBESTOS	5-15 % CHRYSOTILE		
	2.		30-50% FIBROUS GLASS		
	3.				
	4.				
	5.				
	6.				

FOR MEDICAL SERVICES USE ONLY SAMPLE ANALYSIS	SUBSTANCE	TWA (Time)	TWA 8(hr)	UNITS	AUTHORITY	STND. NO.	SEVERITY	ANALYTICAL METHOD
	1.							
	2.							
	3.							
	4.							
	5.							
	6.							

LABORATORY USED

(WORK ACTIVITIES, OPERATION LOCATION, VENTILATION CONTROLS)

Bulk Sample of Asbestos Removal - Personal		BLANKS (No.)	
sample #'s 89115, 89116			
REVIEWED BY	DATE	BULKS (No.)	
COMMENTS			

1B 002113

SWRf/Asbestos 2255

CALIBRATION OF PERSONAL SAMPLING EQUIPMENT KM-5260-A

MONITORING CONDITIONS							
PRE	DATE	INITIALS	AIR TEMPERATURE	BAROMETRIC PRESSURE	RELATIVE HUMIDITY		
	5-8-89	8/5	86 °F	29.97 "Hg	61 %		
POST	DATE	INITIALS	AIR TEMPERATURE	BAROMETRIC PRESSURE	RELATIVE HUMIDITY		
			°F	"Hg	%		
SAMPLING EQUIPMENT Mnfg/SN	ROSETTES	SETTING	*Δ T (SEC.)		SAMPLING MEDIA	FLOW RATE	
	PRE	POST	PRE	POST		PRE	POST
MSA # 1	14.80						
	14.88						
	14.88						
	14.88						
	14.94						
	<u>14.88</u>						
						2.02 l/min	
MSA # 2	15.17						
	15.14						
	<u>15.16</u>						
	15.16						
						1.98 l/min	

*Δ T - amount of time for bubble to travel length of buret.

NOTE: To determine flowrate, calculate as follows:

a/b X 60 sec./min. = flowrate

a - volume expressed as cc or ml

b - time expressed as seconds

To determine liters per minute, divide above calculation by 1000.

1B 002121

CALIBRATION OF PERSONAL SAMPLING EQUIPMENT

KM-5260-A

Victor Valerio Cat # I

MONITORING CONDITIONS

PRE	DATE	INITIALS	AIR TEMPERATURE	BAROMETRIC PRESSURE	RELATIVE HUMIDITY				
	5-8-89	SE B	73 °F	29.96 "Hg	100 %				
POST	DATE	INITIALS	AIR TEMPERATURE	BAROMETRIC PRESSURE	RELATIVE HUMIDITY				
	5-8-89	SE B	86 °F	29.97 "Hg	61 %				
SAMPLING EQUIPMENT		ROTAMETER SETTING		*Δ T (SEC.)		SAMPLING MEDIA		FLOW RATE	
Mnfg/SN		PRE POST		PRE POST		PRE POST		PRE POST	
MSA # 1		15.72 14.80							
		14.71 14.88							
		14.75 14.88							
		14.77 14.88							
		14.77 14.94							
0.500 ml		AVG 14.74 14.88						2.02 l/min	
								AVG: 2.03	
max sample time		1 HR 57 min						1B 002122	

*Δ T - amount of time for bubble to travel length of buret.

NOTE: To determine flowrate, calculate as follows:

a/b X 60 sec./min. = flowrate

a - volume expressed as cc or ml

b - time expressed as seconds

To determine liters per minute, divide above calculation by 1000.

12.04

$$\frac{2.04 \text{ l}}{\text{min}} \times (X) = 242 \text{ l}$$

$$X = \frac{242 \text{ l}}{2.04 \text{ l/min}}$$

$$X = 117 \text{ min}$$