



LABORATORY ANALYSIS REPORT

National Loss Control Service Corporation
Long Grove, Illinois 60049 (312) 540-2488

ENVIRONMENTAL SCIENCES LABORATORY, K-2

REPORT DATE MAR. 20, 1986

SAMPLES REC'D MAR. 18, 1986

REQUEST NUMBER 44335

PAGE NUMBER 1 OF REQUEST.

TO:

CAROLINE TUTTLE
SOUTHWESTERN REFINERY
P.O. BOX 9217
CORPUS CHRISTI TX 78469

SAMPLE NUMBER	ANALYSIS REQUESTED	RESULTS	
		Fibers/100 Flds	Fibers/cc
86-07	ASBESTOS	1	0.02
08	ASBESTOS	1	0.02
09	ASBESTOS	4.5	0.16
10	ASBESTOS	8	0.30
11	ASBESTOS	0.5	<0.01
12	ASBESTOS	<0.5	<0.01
13	ASBESTOS	2	0.20
BLANK	BLANK.... ASBESTOS		SUBTRACTED
BLANK	BLANK.... ASBESTOS		SUBTRACTED
BLANK	BLANK.... ASBESTOS		SUBTRACTED

< MEANS LESS THAN
METHODS: PHASE CONTRAST MICROSCOPY
Respectfully submitted,

Joan A. Wronski

Joan A. Wronski, CIH, Manager
Environmental Sciences Laboratory

ACCREDITED BY THE AMERICAN INDUSTRIAL HYGIENE ASSOCIATION

SWRf/Asbestos 1388

1B 000522

**NATLSCO**

National Loss Control Service Corporation

ENVIRONMENTAL SCIENCES LABORATORY, K-2
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Name Caroline Tuttle
Title Industrial Hygienist
Firm Southwestern Refinery
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Corpus Christi, TX 78469
Bus. Tel. No. 512-884-8863

Nº 44335

ANALYSIS REQUEST

FIELD NUMBER	SAMPLING VOLUME	ANALYZE FOR—	LABORATORY NO.	RESULTS
86-07	43.5L	asbestos		
86-08	43.4L	asbestos		
86-09	30L	asbestos		
86-10	29.4L	asbestos		
86-11	352.5	asbestos		
86-12	327.6L	asbestos		
86-13	11.02L	asbestos		
Blank	—	asbestos		
Blank	—	asbestos		
Blank	—	asbestos		

DATE SAMPLES TAKEN

DATE RECEIVED BY
LABORATORY

DATE COMPLETED

ANALYTICAL METHOD:

COMMENTS:

SWRf/Asbestos 1389

1B 000523

INDUSTRIAL HYGIENE SURVEY DATA - WORKPLACE AIR MONITORING KM-4293

DATE 2/13/86

FACILITY SOUTHWESTERN	DEPARTMENT MAINT
OPERATION/JOB TITLE AREA SAMPLE UNDERNEATH JOB	NUMBER OF SHIFTS 1
EMPLOYEE —	EMPLOYEE NUMBER

SURVEYOR M ZIMMER	
SAMPLE NUMBER 86-07	SAMPLE TYPE ☐ Breathing Zone ☒ General Air
FILTER TYPE MILITORE 0.8 μ	SPECIAL
IMPINGER ☐ Midget ☐ Bubbler	TUBE ☐ Detector ☐ Silgel ☐ Charcoal
CONTAMINANT ASBESTOS	PUMP NUMBER BENDIX # 3
TIME ON 1:46	FLOWRATE 1.5
TIME OFF 2:15	FLOWRATE

Minutes 29 X 1.5 Flowrate = Sample Volume 47.5 L

SAMPLING CONDITIONS

TEMPERATURE 60° F	HUMIDITY 100 %	AIR VELOCITY SE 7 MPH	BAROMETRIC PRESSURE 30.16 ↓
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CONTROL MEASURES
N/A

JOB DESCRIPTION
AREA SAMPLE OF ASBESTOS REMOVAL BY OUTSIDE CONTRACTORS

ANALYTICAL TECHNIQUE

EXPOSURE CONCENTRATION CALCULATION

Lab Results = .02 f/cc

TWA = .004 f/cc

SWRf/Asbestos 1381

1B 000515

INDUSTRIAL HYGIENE SURVEY DATA - WORKPLACE AIR MONITORING KM-4293

DATE

2/13/86

FACILITY

SOUTHWESTERN

DEPARTMENT

MAINT

OPERATION/JOB TITLE

AREA SAMPLE DOWNWIND

NUMBER OF SHIFTS

1

EMPLOYEE

EMPLOYEE NUMBER

SURVEYOR

M ZIMMER

SAMPLE NUMBER

86-08

SAMPLE TYPE

☐ Breathing Zone☒ General Air

SPECIAL

FILTER TYPE

MILIPORE 0.8 μ ☐ Resp.☐ Total

TUBE

☐ Detector☐ Silgel☐ Charcoal

IMPINGER

SOLUTION

☐ Midget☐ Bubbler

CONTAMINANT

ASBESTOS

PUMP NUMBER

BENDIX # 4

CALIBRATION DATE

TIME ON

1:44

FLOWRATE

1.4

TIME OFF

2:15

FLOWRATE

Minutes 31 X 1.4 Flowrate = Sample Volume 43.4 L

SAMPLING CONDITIONS

TEMPERATURE

60° F

HUMIDITY

100 %

AIR VELOCITY

SE 7 MPH

BAROMETRIC PRESSURE

30.16 $\downarrow$

CONTROL MEASURES

N/A

JOB DESCRIPTION

AREA SAMPLE OF ASBESTOS REMOVAL BY OUTSIDE CONTRACTOR

ANALYTICAL TECHNIQUE

EXPOSURE CONCENTRATION CALCULATION

Lab Results = .02 f/cc

TWA = .60 f/cc

SWRf/Asbestos 1382

1B 000516

INDUSTRIAL HYGIENE SURVEY DATA - WORKPLACE AIR MONITORING KM-4293

DATE

2-19-86

FACILITY

SOUTHWESTERN REFINING

DEPARTMENT

MAINT

OPERATION/JOB TITLE

INSULATOR

NUMBER OF SHIFTS

1

EMPLOYEE

ROY WOLFORD

EMPLOYEE NUMBER

SURVEYOR

M ZIMMER

SAMPLE NUMBER

86-09

SAMPLE TYPE

☒ Breathing Zone☐ General Air

SPECIAL

FILTER TYPE

MILLIPORE 0.8 μ ☐ Resp.☐ Total

TUBE

☐ Detector☐ Silgel☐ Charcoal

IMPINGER

SOLUTION

☐ Midget☐ Bubbler

CONTAMINANT

ASBESTOS

PUMP NUMBER

BENDIX # 3

CALIBRATION DATE

TIME ON

1:20

FLOWRATE

1.5

TIME OFF

1:40

FLOWRATE

Minutes 20×1.5 Flowrate = Sample Volume 30 L

SAMPLING CONDITIONS

TEMPERATURE

91°F

HUMIDITY

40%

AIR VELOCITY

SW 21 MPH

BAROMETRIC PRESSURE

29.74 $\downarrow$

CONTROL MEASURES

RESPIRATOR - DISPOSABLE COVERALLS, GLOVES HANDLED WET

JOB DESCRIPTION

ASBESTOS REMOVAL CAT 1 SURGE DRUM

ANALYTICAL TECHNIQUE

EXPOSURE CONCENTRATION CALCULATION

Lab Results = .16 f/cc

TWA = .01 f/cc

SWRf/Asbestos 1383

1B 000517

INDUSTRIAL HYGIENE SURVEY DATA - WORKPLACE AIR MONITORING KM-4293

DATE

2-18-86

FACILITY

SOUTHWESTERN REFINING

DEPARTMENT

MAINT

OPERATION/JOB TITLE

INSULATOR

NUMBER OF SHIFTS

1

EMPLOYEE

KAREN TELGE

EMPLOYEE NUMBER

SURVEYOR

M ZIMMER

SAMPLE NUMBER

86-10

SAMPLE TYPE

☒ Breathing
☒ Zone☐ General
☐ Air

SPECIAL

FILTER TYPE

MILLIPORE 0.8 μ ☐ Resp.☐ Total

TUBE

☐ Detector☐ Silgel☐ Charcoal

IMPINGER

☐ Midget☐ Bubbler

SOLUTION

CONTAMINANT

ASBESTOS

PUMP NUMBER

BENDIX #4

CALIBRATION DATE

TIME ON

1:19

FLOWRATE

1.4

TIME OFF

1:40

FLOWRATE

Minutes 21 X 1.4 Flowrate = Sample Volume 29.4 L

SAMPLING CONDITIONS

TEMPERATURE

91° F

HUMIDITY

40%

AIR VELOCITY

SW 21 MPH

BAROMETRIC PRESSURE

29.74 ψ

CONTROL MEASURES

RESPIRATOR - DISPOSABLE GENERALLY, GLOVES, HANDLED WET

JOB DESCRIPTION

ASBESTOS REMOVAL CAT 1 SURGE DRAIN

ANALYTICAL TECHNIQUE

EXPOSURE CONCENTRATION CALCULATION

Lab Results = .30 f/cc

TWA = .01 f/cc

SWRf/Asbestos 1384

1B 000518

INDUSTRIAL HYGIENE SURVEY DATA - WORKPLACE AIR MONITORING KM-4293

DATE 2/20/86

FACILITY SOUTHWESTERN REFINING		DEPARTMENT MAINT	
OPERATION/JOB TITLE INSULATOR		NUMBER OF SHIFTS 1	
EMPLOYEE KAREN TELLE		EMPLOYEE NUMBER	
SURVEYOR C TUTTLE			
SAMPLE NUMBER 86-11	SAMPLE TYPE ☒ Breathing Zone ☐ General Air	SPECIAL	
FILTER TYPE MILLIPORE 0.8 μ	☐ Resp. ☐ Total	TUBE ☐ Detector ☐ Silgel ☐ Charcoal	
IMPINGER ☐ Midget ☐ Bubbler	SOLUTION		
CONTAMINANT ASBESTOS	PUMP NUMBER BENDIX # 3	CALIBRATION DATE	
TIME ON 10:35	FLOWRATE 1.5		
TIME OFF 2:20	FLOWRATE		

Minutes 235 X 1.5 Flowrate = Sample Volume 352.5 L

SAMPLING CONDITIONS

TEMPERATURE	HUMIDITY	AIR VELOCITY	BAROMETRIC PRESSURE
CONTROL MEASURES			

HANDLED WET, DISPOSABLE COVERALLS & GLOVES, RESPIRATORS
SHOWER AFTER JOB IS COMPLETE

JOB DESCRIPTION

REMOVE ASBESTOS INSULATION FOR PIPING IN BTX AND REMOVE
ASBESTOS FROM TOWER IN CRUDE II

ANALYTICAL TECHNIQUE

EXPOSURE CONCENTRATION CALCULATION

Lab Results = 4.01 f/cc

TWA = .00 f/cc

SWRF/Asbestos 1385

1B 000519

INDUSTRIAL HYGIENE SURVEY DATA - WORKPLACE AIR MONITORING KM-4293

DATE 2/20/86

FACILITY Southwestern Refining		DEPARTMENT MAINT	
OPERATION/JOB TITLE Insulator		NUMBER OF SHIFTS 1	
EMPLOYEE Roy Wolford		EMPLOYEE NUMBER	
SURVEYOR C. Tuttle			
SAMPLE NUMBER 86-12	SAMPLE TYPE ☒ Breathing Zone ☐ General Air	SPECIAL	
FILTER TYPE millipore 0.8u	☐ Resp. ☐ Total	TUBE ☐ Detector ☐ Silgel ☐ Charcoal	
IMPINGER ☐ Midget ☐ Bubbler	SOLUTION		
CONTAMINANT Asbestos		PUMP NUMBER BENDIX # 4	CALIBRATION DATE
TIME ON 10:34		FLOWRATE 1.4	
TIME OFF 2:20		FLOWRATE	

Minutes 234 x 1.4 Flowrate = Sample Volume 327.6 L

SAMPLING CONDITIONS

TEMPERATURE 72°	HUMIDITY 79%	AIR VELOCITY 10 mph S.W.	BAROMETRIC PRESSURE 29.83
CONTROL MEASURES Handled wet, Disposable coveralls + gloves. Respirators shower after job is complete			

JOB DESCRIPTION
Remove asbestos insulation in BTX and remove
asbestos from tower in crude II

ANALYTICAL TECHNIQUE

EXPOSURE CONCENTRATION CALCULATION

Lab Results = 2.01 f/cc

TWA = .005 f/cc

SWRf/Asbestos 1386

1B 000520

INDUSTRIAL HYGIENE SURVEY DATA - WORKPLACE AIR MONITORING KM-4293

DATE 3/6/86

FACILITY Southwestern		DEPARTMENT Maintenance	
OPERATION/JOB TITLE Insulator		NUMBER OF SHIFTS 1	
EMPLOYEE Karen Telge		EMPLOYEE NUMBER	
SURVEYOR Ctattle			
SAMPLE NUMBER 86-13	SAMPLE TYPE ☒ Breathing Zone ☐ General Air	SPECIAL	
FILTER TYPE millipore 0.8µ	☐ Resp. ☐ Total	TUBE ☐ Detector ☐ Silgel ☐ Charcoal	
IMPINGER ☐ Midget ☐ Bubbler	SOLUTION		
CONTAMINANT Asbestos	PUMP NUMBER Dendix #4	CALIBRATION DATE 3/6/86	
TIME ON 11:40	FLOWRATE 1.9 lpm		
TIME OFF 12:38	FLOWRATE		

Minutes 58 x 1.9 Flowrate = Sample Volume 11.02 l

SAMPLING CONDITIONS

TEMPERATURE 74°	HUMIDITY 33%	AIR VELOCITY NE 17 mph	BAROMETRIC PRESSURE 30.18 in
CONTROL MEASURES Handled wet, disposable coveralls, gloves, respirators, Shower after job is complete			

JOB DESCRIPTION
Remove asbestos insulation from 1" line (3 location) from crude I

ANALYTICAL TECHNIQUE

EXPOSURE CONCENTRATION CALCULATION

Lab Results = .2 f/cc

TWA = .02 f/cc

SWRf/Asbestos 1387

1B 000521