FILE NAME: Ford (FD)

DATE: 1978 Apr 6

DOC#: FD233

DOCUMENT DESCRIPTION: Unpublished Internal Report - Industrial Hygiene Survey - Clutch Assembly Area, Dept 4980

Inter Office

Personnel and
Organization Staff

April 6, 1978

Mr. C. J. Augey, Manager
Cleveland Engine Plant

cc E. F. Arscott, M.D.
R. J. Daragon
J. McBurney
J. Kirk
R. B. McGraw
R. J. Manthey
C. Nadig

Subject: Industrial Hygiene Survey - Clutch Assembly Area - Department 4980
Airborne Asbestos

As requested by Messrs. J. Kirk, Industrial Relations Supervisor, and J. McBurney, Senior Safety Engineer at Cleveland Engine Plant No. 2, an industrial hygiene survey was conducted for an evaluation of asbestos use and handling at the clutch assembly area. Material handling is limited to removal of the prefabricated clutch assembly from containers and installation of them on the 351 manual transmission engine block. Breathing zone and area air samples were taken from the assembly line and containers for assessing handling procedures relevant to regulations concerning asbestos containing wastes and cleaning procedures.

Sample analyses revealed breathing zone samples to be within current standards for airborne asbestos. While there were some settled dusts observed within clutch assembly boxes as well as upon assembly line railing, bulk samples revealed no asbestos present on assembly rails and less than one percent chrysotile present within clutch assembly boxes. Laboratory analyses and current regulations indicated asbestos usage in the clutch assembly area as measured on the date of the survey would present no health hazard. Employe work practices such as empty boxes being thrown into the air should be discouraged as with any process or practice which might cause asbestos containing dusts to become airborne.

If this department can be of further assistance, do not hesitate to call.

Roger Wabeke for
James M. Sproat
Industrial Hygienist
Industrial Hygiene & Toxicology Department

ms
Attachment

012976

Data Sheet

Industrial Hygiene Services Section - Industrial Hygiene & Toxicology Department - Employe Health Services

Cleveland Engine Plant #2 - Department 4980 - Clutch Assembly

March 10, 1978

Permissible Occupational Exposure Limits to Airborne Contaminants:

Fibers per cc = fibers (of asbestos) longer than 5 micrometers per cubic centimeter of (contaminated) breathing zone air

	8-Hr. Time-Weighted Avg. Exp. Limit	Ceiling Concentration	Short-Term Exposure Limit**
Asbestos	2.0 fibers/cc	10.0 fibers/cc	10.0 fibers/cc for 15 minutes

Results

Employe	Soc. Sec. #	Asbestos*	Location & Position
W. Bentley	299-44-4353	< 0.07	Clutch assembly operator
E. Scheuring	281-60-5539	< 0.06	" "
A. Georgopoulos	261-58-2521	< 1.45	" " (parts loading & unloading)
" "	" " "	< 0.093	" " " "
W. Bentley	299-44-4353	< 0.099	" " "
E. Scheuring	281-60-5539	0.093	
" "	" " "	< 0.093	
W. Bentley	299-44-4353	< 0.087	
Area sample		< 0.104	Directly across assembly line - opposite assembly operators
" "		< 0.09	Sample taken on rotating table where assembly housings are placed
Bulk (assembly line)		None detected	" of accumulated dusts and oil on engine line
Bulk		≤ 1% chrysotile	

* All samples are at or near minimum detection limits

** Ford Motor Company Standard

Sample data retrieval numbers: JMS 37 through JMS 48

Equipment and Instruments: Bendix personal sampling pumps, 0.8 micron membrane filters in 3 piece cassettes; sampling "open face filter"

Analyses: Analyses were performed by Clayton Environmental Consultants using approved NIOSH counting methods

012977

FORD MOTOR COMPANY
EMPLOYE HEALTH SERVICES

INDUSTRIAL HYGIENE
AIR ANALYSIS SAMPLING DATA SHEET

Date 03 10 78 Rec Type AR Laboratory No. _____

Source S Sample Designation & Data Retrieval No. JMS - 000031

Plant 1222 Cleveland Engine Plt #2 Building _____

Department 004980 Clutch Assy. Bay/Column No. _____

Work Station Location _____

Work Operation _____

Materials/By-products/Suppliers _____

Manufacturing _____

Standard Nos. _____

Production Rate: ☒ Normal ☐ Above Normal ☐ Below Normal Rate 2.5/hr

Employe Name W ☐ BENTLEY

Ident. No. 299 42 4353

Job Title 38 01 58 0 Clutch Assy (Engine Assy)

Shift 2 Length of Work Shift 9.40 Hours 9:31 - 9:52

Hours/Shift 08.0 & Days/Week 50 at this Job

Sample Type (Check BZ, GA or SZ and LS or FD)
☒ Breathing Zone ☐ General Area ☐ Source Zone
☒ Laboratory Sample ☐ Field Determination

FILTER REF 1

Air Sampling Method ☒ Filter ☐ Respirable Dust Filter
☐ Charcoal Tube ☐ Silica Gel Tube ☐ Dust Impinger
☐ Direct-Reading Instrument ☐ Detector Tube ☐ ESP
☐ Gas Sampling Bag ☐ Gas Bubbler ☐ Evacuated Flask
☐ Tape Sampler ☐ Other _____

Sample Basis (Circle One)
(A) Management Request B - Follow-up Study
C - Medical Department Request D - Union Request/Grievance
E - Subsequent to Regulatory Agency Study F - Research
G - General Survey H - Employe Complaint/Suggestion

Sketch of Work Station

012978

SAMPLE	CONTAMINANT	MAJOR	OTHER
	Total Dust/Fiber		
	Respirable Dust		
	Fume		
	Mist		
	Smoke		
	Gas		
	Vapor		

Air Sampling Device: BENKBDX-41

Serial No.: 1930 Filter Type & Size:

Final Filter Weight: mg

Initial Filter Weight: mg

Difference: mg

(= mcg)

Pump Air Flow Rate Scale Reading: Start 2.02 Stop 2.02

Average Air Flow Rate: 2.02 liters/minute

Sampling Time: Start 9:31 Stop 9:52 Unit of Measure: 1/1000

Elapsed Time: 21 minutes. Air Volume Sampled: 42.4 liters

Laboratory: Clayton Environmental Date Submitted: 3/13/98

CONTAMINANT BASE	CODE B1	CODE B2	S U F	ANALYSIS MCG	FACTOR	L T	TEST MEASUREMENT	PERMISSIBLE LIMIT
00133211				<3,000		L	0.00.00.00	

Engineering & Administrative Controls: NONE

Personal Protection: 0.1.1. N.95 RESPIRATORS

Other Potential Occupational Stress: ☐ Noise ☐ Vibration ☐ Biological ☒ Ergonomic
☐ Heat ☐ Radiation ☐ Cutaneous/Ocular ☐ Sanitation ☐ Illumination

Comments:

Industrial Hygienist: Jim SPROAT Maint. Cd. C D R

012979

FORD MOTOR COMPANY
EMPLOYE HEALTH SERVICES

INDUSTRIAL HYGIENE
AIR ANALYSIS SAMPLING DATA SHEET

Date 03 10 98 Rec Type A.C Laboratory No.

Source S Sample Designation & Data Retrieval No. JMS - 000038

Plant 1222 Building

Department 004980 Bay/Column No.

Work Station Location

Work Operation

Materials/By-products/Suppliers

Manufacturing

Standard Nos.

Production Rate: ☒ Normal ☐ Above Normal ☐ Below Normal Rate

Employe Name E ☐ SCHEURING

Ident. No. 281 60 5539

Job Title 380158 Chuter Assembler

Shift 2 Length of Work Shift 9.0 Hours 7:27 - 9:50

Hours/Shift 09.0 & Days/Week 5.0 at this Job

Sample Type (Check BZ, GA or SZ and LS or FD)
☒ Breathing Zone ☐ General Area ☐ Source Zone
☒ Laboratory Sample ☐ Field Determination

Air Sampling Method ☒ Filter ☐ Respirable Dust Filter
☐ Charcoal Tube ☐ Silica Gel Tube ☐ Dust Impinger
☐ Direct-Reading Instrument ☐ Detector Tube ☐ ESP
☐ Gas Sampling Bag ☐ Gas Bubbler ☐ Evacuated Flask
☐ Tape Sampler ☐ Other

Sample Basis (Circle One)
(A) Management Request B - Follow-up Study D - Union Request/Grievance
C - Medical Department Request F - Research
E - Subsequent to Regulatory Agency Study
G - General Survey H - Employe Complaint/Suggestion

Sketch of Work Station

T/Tec
CE#2
Fan off (9:32)
Union
Chuter
Station

012930

SAMPLE	CONTAMINANT	MAJOR	OTHER
	Total Dust/Fiber		
	Respirable Dust		
	Fume		
	Mist		
	Smoke		
	Gas		
	Vapor		

Air Sampling Device: BOUCK BDX 41

Serial No. T1189 Filter Type & Size

Final Filter Weight mg — Difference mg

Initial Filter Weight mg — (= mcg)

Pump Air Flow Rate Scale Reading: Start 2.15 Stop 2.15

Average Air Flow Rate: 2.15 liters/minute

Sampling Time: Start 9:27 Stop 9:50 Unit of Measure fibers/cc

Elapsed Time: 23 minutes. Air Volume Sampled 49.4 liters

Laboratory CLAYTON ENVIRONMENTAL Date Submitted 3/13/98

CONTAMINANT BASE	CODE B1	CODE B2	SUF	ANALYSIS MCG	FACTOR	LT	TEST MEASUREMENT	PERMISSIBLE LIMIT
0,0,1,3,3,2,2,1,4				<3,000		L	0,0,0,0,0,6,0,0	

Engineering & Administrative Controls NONE

Personal Protection 0.1 f. NO RESPIRATORS

Other Potential Occupational Stress: ☐ Noise ☐ Vibration ☐ Biological ☒ Ergonomic
☐ Heat ☐ Radiation ☐ Cutaneous/Ocular ☐ Sanitation ☐ Illumination

Comments

Industrial Hygienist JIM SPROAT Maint. Cd. C D R

012981

FORD MOTOR COMPANY
EMPLOYE HEALTH SERVICES

INDUSTRIAL HYGIENE
AIR ANALYSIS SAMPLING DATA SHEET

Date 03 10 98 Rec Type AC Laboratory No. _____
Source S Sample Designation & Data Retrieval No. IMS - 0 0 0 3 9

Plant 1222 Cleveland Engine Plt #2 Building _____
Department 00498.0 Clutch Assy Bay/Column No. _____
Work Station Location _____
Work Operation Handling heavy of clutches & stacking
housing
Materials/By-products/Suppliers _____
Manufacturing _____
Standard Nos. _____
Production Rate: ☒ Normal ☐ Above Normal ☐ Below Normal Rate _____
Employe Name A GEORGOPOULOS
Ident. No. 269 58 2521
Job Title 38015800 Clutch Assy (contact dermo.
Shift 2 Length of Work Shift 9.0 Hours
Hours/Shift 090 & Days/Week 50 at this Job

Opening for clutch assy
CO# = clutch assy

Sample Type (Check BZ, GA or SZ and LS or FD)
☐ Breathing Zone ☐ General Area ☒ Source Zone
☒ Laboratory Sample ☐ Field Determination

Air Sampling Method ☒ Filter ☐ Respirable Dust Filter
☐ Charcoal Tube ☐ Silica Gel Tube ☐ Dust Impinger
☐ Direct-Reading Instrument ☐ Detector Tube ☐ ESP
☐ Gas Sampling Bag ☐ Gas Bubbler ☐ Evacuated Flask
☐ Tape Sampler ☐ Other _____

1 MM

9:37

Sample Basis (Circle One)
(A) Management Request B - Follow-up Study
C - Medical Department Request D - Union Request/Grievance
E - Subsequent to Regulatory Agency Study F - Research
G - General Survey H - Employe Complaint/Suggestion

Sketch of Work Station

012982

SAMPLE	CONTAMINANT	MAJOR	OTHER
	Total Dust/Fiber		
	Respirable Dust		
	Fume		
	Mist		
	Smoke		
	Gas		
	Vapor		

Air Sampling Device: Bendix (30*41)

Serial No.: 11122 (rotator) Filter Type & Size:

Final Filter Weight: ____ mg

Initial Filter Weight: ____ mg

Difference: ____ mg

(= ____ mcg)

Pump Air Flow Rate Scale Reading: Start ____ Stop ____

Average Air Flow Rate: 2.06 liters/minute

Sampling Time: Start 9:36 Stop 9:31 Unit of Measure

Elapsed Time: 1.0 minutes; Air Volume Sampled 2.06 liters

Laboratory: Clayton Environmental Date Submitted: 3/13/18

CONTAMINANT BASE	CODE B1	CODE B2	SUF	ANALYSIS MCG	FACTOR	LT	TEST MEASUREMENT	PERMISSIBLE LIMIT
0,0,1,3,3,2,2,1,1,4				<3000		L	0,0,0,1,4,5,0,0	

Engineering & Administrative Controls: None

Personal Protection: 0,1,1 No Respirator

Other Potential Occupational Stress: ☐ Noise ☐ Vibration ☐ Biological ☒ Ergonomic ☐ Heat ☐ Radiation ☐ Cutaneous/Ocular ☐ Sanitation ☐ Illumination

Comments: Smoke taken during actual sampling of shots. Dose higher. Crew leader putting shells on shelves. Not representative

Industrial Hygienist: Dan Sigrist Maint. Cd. C D R

012983

FORD MOTOR COMPANY
EMPLOYE HEALTH SERVICES

INDUSTRIAL HYGIENE
AIR ANALYSIS SAMPLING DATA SHEET

Date 03 10 18 Rec Type A C Laboratory No.

Source S Sample Designation & Data Retrieval No. IMS - 00004 0

Plant 1222 Cleveland Engine Plt #2 Building

Department 00498 0 Bay/Column No.

Work Station Location

Work Operation

Materials/By-products/Suppliers

Manufacturing

Standard Nos.

Production Rate: ☐ Normal ☐ Above Normal ☐ Below Normal Rate

Employe Name A GEORGOPOULOS T

Ident. No. 269 58 2521

Job Title 380158 0 Cutter Operator, Machine Tool Set-up

Shift 2 Length of Work Shift 9.0 Hours Cont'd - 00490.

Hours/Shift 09.0 & Days/Week 5.0 at this Job

Sample Type (Check BZ, GA or SZ and LS or FD)

☒ Breathing Zone ☐ General Area ☐ Source Zone

☒ Laboratory Sample ☐ Field Determination

Air Sampling Method ☒ Filter ☐ Respirable Dust Filter

☐ Charcoal Tube ☐ Silica Gel Tube ☐ Dust Impinger

☐ Direct-Reading Instrument ☐ Detector Tube ☐ ESP

☐ Gas Sampling Bag ☐ Gas Bubbler ☐ Evacuated Flask

☐ Tape Sampler ☐ Other

Sample Basis (Circle One)

(A) Management Request B – Follow-up Study

C – Medical Department Request D – Union Request/Grievance

E – Subsequent to Regulatory Agency Study F – Research

G – General Survey H – Employe Complaint/Suggestion

Sketch of Work Station

012984

SAMPLE	CONTAMINANT	MAJOR	OTHER
	Total Dust/Fiber		
	Respirable Dust		
	Fume		
	Mist		
	Smoke		
	Gas		
	Vapor		

Air Sampling Device: Bendix (BDX-41)

Serial No.: 7122 Filter Type & Size: _____

Final Filter Weight: _____ mg

Initial Filter Weight: _____ mg

Difference: _____ mg (= _____ mcg)

Pump Air Flow Rate Scale Reading: Start 2.06 Stop _____

Average Air Flow Rate: 2.06 liters/minute

Sampling Time: Start 9:31 Stop 10:08 Unit of Measure _____

Elapsed Time: 31 minutes. Air Volume Sampled 63.86 liters

Laboratory: Clayton Environmental Date Submitted: 3/13/98

CONTAMINANT BASE	CODE B1	CODE B2	SUF	ANALYSIS MCG	FACTOR	L/T	TEST MEASUREMENT	PERMISSIBLE LIMIT
0,0,1,3,3,2	2	1	4	6,000			0.0.0.0.9 3 0	

Engineering & Administrative Controls: None

Personal Protection: 0.1.1 RESPIRATOR

Other Potential Occupational Stress: ☐ Noise ☐ Vibration ☒ Biological ☐ Ergonomic ☐ Heat ☐ Radiation ☐ Cutaneous/Ocular ☐ Sanitation ☐ Illumination

Comments: _____

Industrial Hygienist: Jim Sprout Maint. Cd. C D R

012985

FORD MOTOR COMPANY
EMPLOYE HEALTH SERVICES

INDUSTRIAL HYGIENE
AIR ANALYSIS SAMPLING DATA SHEET

Date 03/10/18 Rec Type AR Laboratory No. _____
Source S Sample Designation & Date Retrieval No. SMS-000041

Plant 122 Cleveland Engine #2 Building _____
Department 004980 Clutch Assy Bay/Column No. _____

Work Station Location _____

Work Operation Operator positions clutch assy & housing.

Materials/By-products/Suppliers _____

Manufacturing _____
Standard Nos. _____

Production Rate: ☐ Normal ☐ Above Normal ☐ Below Normal Rate _____

Employe Name W ☐ BENTLEY

Ident. No. 299 44 4353

Job Title 380158 Clutch Assy

Shift 2 Length of Work Shift 9.0 Hours 9.50 – 1205

Hours/Shift 09.0 & Days/Week 5.0 at this Job

Sample Type (Check BZ, GA or SZ and LS or FD) Sample C0.5
☒ Breathing Zone ☐ General Area ☐ Source Zone
☒ Laboratory Sample ☐ Field Determination

Air Sampling Method ☒ Filter ☐ Respirable Dust Filter
☐ Charcoal Tube ☐ Silica Gel Tube ☐ Dust Impinger
☐ Direct-Reading Instrument ☐ Detector Tube ☐ ESP
☐ Gas Sampling Bag ☐ Gas Bubbler ☐ Evacuated Flask
☐ Tape Sampler ☐ Other _____

Sample Basis (Circle One)
A – Management Request B – Follow-up Study
C – Medical Department Request D – Union Request/Grievance
E – Subsequent to Regulatory Agency Study F – Research
G – General Survey H – Employe Complaint/Suggestion

Sketch of Work Station

012986

SAMPLE	CONTAMINANT	MAJOR	OTHER
	Total Dust/Fiber		
	Respirable Dust		
	Fume		
	Mist		
	Smoke		
	Gas		
	Vapor		

Air Sampling Device: Sidekick (BDX 41)

Serial No.: 1136 Filter Type & Size:

Final Filter Weight: mg — Difference: mg

Initial Filter Weight: mg — (= mcg)

Pump Air Flow Rate Scale Reading: Start: Stop:

Average Air Flow Rate: 2.02 liters/minute

Sampling Time: Start 9:50 Stop 10:05 Unit of Measure: Mass/cc

Elapsed Time: 15 minutes. Air Volume Sampled: 30.3 liters

Laboratory: Clayton Environmental Date Submitted: 3/13/18

CONTAMINANT BASE	CODE B1	CODE B2	SUF	ANALYSIS MCG	FACTOR	LT	TEST MEASUREMENT	PERMISSIBLE LIMIT
00133221			4	<3pco		L	0.0000.0000	

Engineering & Administrative Controls: None

Personal Protection: 0,1,1 No Respirator

Other Potential Occupational Stress: ☐ Heat ☐ Radiation ☐ Noise ☐ Cutaneous/Ocular ☐ Vibration ☐ Sanitation ☒ Biological ☐ Illumination ☐ Ergonomic

Comments:

Industrial Hygienist: Jim Spratt Maint. Cd.: C D R

012987

FORD MOTOR COMPANY
EMPLOYE HEALTH SERVICES

INDUSTRIAL HYGIENE
AIR ANALYSIS SAMPLING DATA SHEET

Date 03 10 98 Rec Type AC Laboratory No.
Source S Sample Designation & Data Retrieval No. IMS - 000042

Plant 122 Cleveland Engine Plant #2 Building
Department 004980 Clutch Assy Bay/Column No.
Work Station Location
Work Operation Operator - Clutch assy (bottom assy)
Materials/By-products/Suppliers
Manufacturing:
Standard Nos.
Production Rate: ☐ Normal ☐ Above Normal ☐ Below Normal Rate
Employe Name F SCHERING
Ident. No. 281 60 5539
Job Title 380158 Clutch Assembler
Shift 2 Length of Work Shift 9.0 Hours
Hours/Shift 9.0 & Days/Week 5.0 at this job

Sample Type (Check BZ, GA or SZ and LS or FD)
☒ Breathing Zone ☐ General Area ☐ Source Zone
☒ Laboratory Sample ☐ Field Determination

Air Sampling Method ☒ Filter ☐ Respirable Dust Filter
☐ Charcoal Tube ☐ Silica Gel Tube ☐ Dust Impinger
☐ Direct-Reading Instrument ☐ Detector Tube ☐ ESP
☐ Gas Sampling Bag ☐ Gas Bubbler ☐ Evacuated Flask
☐ Tape Sampler ☐ Other

Sample Basis (Circle One)
A - Management Request B - Follow-up Study
C - Medical Department Request D - Union Request/Grievance
E - Subsequent to Regulatory Agency Study F - Research
G - General Survey H - Employe Complaint/Suggestion I - Location of Work Station

012988

SAMPLE	CONTAMINANT	MAJOR	OTHER
	Total Dust/Fiber		
	Respirable Dust		
	Fume		
	Mist		
	Smoke		
	Gas		
	Vapor		

Air Sampling Device Bendix BDX 41

Serial No. 7789 Filter Type & Size

Final Filter Weight ____ mg } Difference ____ mg

Initial Filter Weight ____ mg } (= ____ mcg)

Pump Air Flow Rate Scale Reading: Start ____ Stop ____

Average Air Flow Rate: 2.15 liters/minute

Sampling Time: Start 9:50 Stop 10:05 Unit of Measure liters/cc

Elapsed Time: 15 minutes. Air Volume Sampled 32.25 liters

Laboratory Clayton Environmental Date Submitted 3/13/78

CONTAMINANT BASE	CODE B1	B2	SUF	ANALYSIS MCG	FACTOR	LT	TEST MEASUREMENT	PERMISSIBLE LIMIT
0,0,1,3,3,2,2,1,4				3,000			0.0.0.0.9.3.0	

Engineering & Administrative Controls None

Personal Protection 0.1.1 to respirator

Other Potential Occupational Stress: ☐ Noise ☐ Vibration ☒ Biological ☒ Ergonomic
☐ Heat ☐ Radiation ☐ Cutaneous/Ocular ☐ Sanitation ☐ Illumination

Comments

Industrial Hygienist Jim Spratt Maint. Cd. C D R

FORD MOTOR COMPANY
EMPLOYE HEALTH SERVICES

INDUSTRIAL HYGIENE
AIR ANALYSIS SAMPLING DATA SHEET

Date 03 10 78 Rec Type A C Laboratory No.
Source S Sample Designation & Data Retrieval No. S.N.S - 0 0 0 0 13

Plant 1222 Cleveland Engine Plt #2 Building
Department 0 0 4 9 8 0 Clutch Assy Bay/Column No.

Work Station Location

Work Operation

Materials/By-products/Suppliers 351 engine (MANUAL TRANSMISSION)

Manufacturing
Standard Nos.

Production Rate: ☐ Normal ☐ Above Normal ☐ Below Normal Rate (167/hr) # 16.9/hour

Employe Name E S.C.H.E.U.R.I.N.G
Ident. No. 2 8 1 6 0 5 5 3 9
Job Title 3 8 0 1 5 8 0 Clutch Assy

Shift 2 Length of Work Shift 9.0 Hours
Hours/Shift 09.0 & Days/Week 5.0 at this Job

Sample Type (Check BZ, GA or SZ and LS or FD)
☒ Breathing Zone ☐ General Area ☐ Source Zone
☒ Laboratory Sample ☐ Field Determination

Air Sampling Method ☒ Filter ☐ Respirable Dust Filter
☐ Charcoal Tube ☐ Silica Gel Tube ☐ Dust Impinger
☐ Direct-Reading Instrument ☐ Detector Tube ☐ ESP
☐ Gas Sampling Bag ☐ Gas Bubbler ☐ Evacuated Flask
☐ Tape Sampler ☐ Other

Sample Basis (Circle One)
(A) Management Request B – Follow-up Study
C – Medical Department Request D – Union Request/Grievance
E – Subsequent to Regulatory Agency Study F – Research
G – General Survey H – Employe Complaint/Suggestion

Sketch of Work Station

SAMPLE	CONTAMINANT	MAJOR	OTHER
	Total Dust/Fiber		
	Respirable Dust		
	Fume		
	Mist		
	Smoke		
	Gas		
	Vapor		

Air Sampling Device Bendix BDX 41

Serial No. 1789 Filter Type & Size

Final Filter Weight ____ mg } Difference ____ mg

Initial Filter Weight ____ mg } (= ____ mcg)

Pump Air Flow Rate Scale Reading: Start ____ Stop ____

Average Air Flow Rate: 2.15 liters/minute

Sampling Time: Start 10:05 Stop 10:20 Unit of Measure Fibers/cc

Elapsed Time: 15 minutes Air Volume Sampled 32.25 liters

Laboratory Clayton Environmental Date Submitted 3/13/78

CONTAMINANT BASE	CODE B1	CODE B2	SUF	ANALYSIS MCG	FACTOR	LT	TEST MEASUREMENT	PERMISSIBLE LIMIT
0,0,1,3,3,2,2,1,4				<3,000		L	0.00.00.93.0	

Engineering & Administrative Controls None

Personal Protection 0,1,1 No respirator

Other Potential Occupational Stress: ☐ Noise ☐ Vibration ☑ Biological ☒ Ergonomic
☐ Heat ☐ Radiation ☑ Cutaneous/Ocular ☐ Sanitation ☐ Illumination

Comments Loose material seems to be coming from edge of clutch assy - having loose debris on hands & arms — use of soap, lotion & water —

Industrial Hygienist Lindquist Maint. Cd. C D R

FORD MOTOR COMPANY
EMPLOYE HEALTH SERVICES

INDUSTRIAL HYGIENE
AIR ANALYSIS SAMPLING DATA SHEET

Date 03 10 18 Rec Type AL Laboratory No.

Source S Sample Designation & Data Retrieval No. SMS - 00004.4

Plant 1222 Vue Land Engine Plt #2 Building

Department 004980 Clutch Assy Bay/Column No.

Work Station Location

Work Operation

Materials/By-products/Suppliers

Manufacturing

Standard Nos.

Production Rate: ☒ Normal ☐ Above Normal ☐ Below Normal Rate

Employe Name W ☐ BENTLEY

Ident. No. 299 44 4353

Job Title 380158 Clutch Assy

Shift 2 Length of Work Shift 9.0 Hours 1205 - 1622

Hours/Shift 09.0 & Days/Week 50 at this Job 008 (Booth #1135)

Sample Type (Check BZ, GA or SZ and LS or FD)

☒ Breathing Zone ☐ General Area ☐ Source Zone

☒ Laboratory Sample ☐ Field Determination

Air Sampling Method ☒ Filter ☐ Respirable Dust Filter

☐ Charcoal Tube ☐ Silica Gel Tube ☐ Dust Impinger

☐ Direct-Reading Instrument ☐ Detector Tube ☐ ESP

☐ Gas Sampling Bag ☐ Gas Bubbler ☐ Evacuated Flask

☐ Tape Sampler ☐ Other

Sample Basis (Circle One)

(A) Management Request B - Follow-up Study

C - Medical Department Request D - Union Request/Grievance

E - Subsequent to Regulatory Agency Study F - Research

G - General Survey H - Employe Complaint/Suggestion

Sketch of Work Station

012992

SAMPLE	CONTAMINANT	MAJOR	OTHER
	Total Dust/Fiber		
	Respirable Dust		
	Fume		
	Mist		
	Smoke		
	Gas		
	Vapor		

Air Sampling Device: Bendix BDX 41

Serial No.: 7930 Filter Type & Size:

Final Filter Weight: mg — Initial Filter Weight: mg — Difference: mg (= mcg)

Pump Air Flow Rate Scale Reading: Start Stop

Average Air Flow Rate: 2.02 liters/minute

Sampling Time: Start 10:05 Stop 10:22 Unit of Measure:

Elapsed Time: 17 minutes. Air Volume Sampled: 34.34 liters

Laboratory: Clayton Environmental Date Submitted: 3/13/78

CONTAMINANT BASE	CODE B1	CODE B2	SUF	ANALYSIS MCG	FACTOR	LT	TEST MEASUREMENT	PERMISSIBLE LIMIT
0,0,1,3,3,2,2,1,4				<3,000		L	0.0.0.0.8.7.0	

Engineering & Administrative Controls: None

Personal Protection: 0,1,1 No respirator

Other Potential Occupational Stress: ☐ Heat ☐ Radiation ☐ Noise ☐ Cutaneous/Ocular ☐ Vibration ☐ Sanitation ☐ Biological ☐ Illumination ☑ Ergonomic

Comments:

Industrial Hygienist: Jim Sprout Maint. Cd. C D R

FORD MOTOR COMPANY
EMPLOYE HEALTH SERVICES

INDUSTRIAL HYGIENE
AIR ANALYSIS SAMPLING DATA SHEET

Date 03 10 18 Rec Type AR Laboratory No.

Source S Sample Designation & Data Retrieval No. IMS - 000045

Plant 122 Clutch Assy Equipment #2 Building

Department 004980 Clutch Assy Bay/Column No.

Work Station Location

Work Operation

Materials/By-products/Suppliers Cleveland engine (3 EA) MANUAL TRANS. Clutch Assy DITA-7550-A1B, A2B Engine # DITA-7563-A1A, A2A

Manufacturing

Standard Nos.

Production Rate: ☐ Normal ☐ Above Normal ☐ Below Normal Rate

Employe Name W BENTLEY

Ident. No. 299 44 4353

Job Title 380158 0 - ALSA SAMPLE

Shift D Length of Work Shift 9.0 Hours

Hours/Shift 09.0 & Days/Week 5.0 at this Job CSF 9

Sample Type (Check BZ, GA or SZ and LS or FD)
☐ Breathing Zone ☒ General Area ☐ Source Zone
☒ Laboratory Sample ☐ Field Determination

0948 - 1104

Across from B-54 NOA

Air Sampling Method ☒ Filter ☐ Respirable Dust Filter
☐ Charcoal Tube ☐ Silica Gel Tube ☐ Dust Impinger
☐ Direct-Reading Instrument ☐ Detector Tube ☐ ESP
☐ Gas Sampling Bag ☐ Gas Bubbler ☐ Evacuated Flask
☐ Tape Sampler ☐ Other

Sample Basis (Circle One)
(A) Management Request B – Follow-up Study
C – Medical Department Request D – Union Request/Grievance
E – Subsequent to Regulatory Agency Study F – Research
G – General Survey H – Employe Complaint/Suggestion

Sketch of Work Station

012994

SAMPLE	CONTAMINANT	MAJOR	OTHER
	Total Dust/Fiber		
	Respirable Dust		
	Fume		
	Mist		
	Smoke		
	Gas		
	Vapor		

Air Sampling Device: BDX 41

Serial No.: 9722 Filter Type & Size:

Final Filter Weight: mg Difference: mg

Initial Filter Weight: mg (= mcg)

Pump Air Flow Rate Scale Reading: Start Stop

Average Air Flow Rate: 2.06 liters/minute

Sampling Time: Start 10:48 Stop 11:04 Unit of Measure

Elapsed Time: 16 minutes. Air Volume Sampled 28.84 liters

Laboratory: CLAYTON ENVIRONMENTAL Date Submitted: 3/13/18

CONTAMINANT BASE	CODE B1	CODE B2	SUF	ANALYSIS MCG	FACTOR	L/T	TEST MEASUREMENT	PERMISSIBLE LIMIT
0,0,1,3,3,2,2,1,4				<3000		L	0.0.0.0.1.0.4.0	

Engineering & Administrative Controls: None

Personal Protection: 0.1.1 No respirator

Other Potential Occupational Stress: ☐ Noise ☐ Vibration ☐ Biological ☑ Ergonomic
☐ Heat ☐ Radiation ☐ Cutaneous/Ocular ☐ Sanitation ☐ Illumination

Comments:

Industrial Hygienist: Jim Sprout Maint Cd: C D R

012995

FORD MOTOR COMPANY
EMPLOYE HEALTH SERVICES

INDUSTRIAL HYGIENE
AIR ANALYSIS SAMPLING DATA SHEET

Date 03 10 98 Rec Type AQ Laboratory No.

Source S Sample Designation & Data Retrieval No. JMS - 00.00.4.6

Plant 1.2.2.2 Cleveland Engine Plant #2 Building

Department 0.0.4.9.8.0 Clutch Assy. Bay/Column No.

Work Station Location

Work Operation Hand on table when clutch housings are placed (rotating table next to earthmoving station) Noise: 2.5' hearing (Legal H.W. limit)

Materials/By-products/Suppliers

Manufacturing

Standard Nos.

Production Rate: ☐ Normal ☐ Above Normal ☐ Below Normal Rate

Employe Name W BENTLEY

Ident. No. 2.9.9 4.4 4.3.5.3 (Area Sample)

Job Title 3.8.0.1.5.8.0

Shift 2 Length of Work Shift 9.0 Hours CE# ID

Hours/Shift 0.9.0 & Days/Week 5.0 at this Job 10:38 - 1:54

Pump #1 1.30

Sample Type (Check BZ, GA or SZ and LS or FD)

☐ Breathing Zone ☒ General Area: ☐ Source Zone

☒ Laboratory Sample ☐ Field Determination

Air Sampling Method ☒ Filter ☐ Respirable Dust Filter

☐ Charcoal Tube ☐ Silica Gel Tube ☐ Dust Impinger

☐ Direct-Reading Instrument ☐ Detector Tube ☐ ESP

☐ Gas Sampling Bag ☐ Gas Bubbler ☐ Evacuated Flask

☐ Tape Sampler ☐ Other

Sample Basis (Circle One)

A - Management Request B - Follow-up Study

C - Medical Department Request D - Union Request/Grievance

E - Subsequent to Regulatory Agency Study F - Research

G - General Survey H - Employe Complaint/Suggestion

Sketch of Work Station

012996

SAMPLE	CONTAMINANT	MAJOR	OTHER
	Total Dust/Fiber		
	Respirable Dust		
	Fume		
	Mist		
	Smoke		
	Gas		
	Vapor		

Air Sampling Device: Bouidr BDX41

Serial No.: 7M36 Filter Type & Size:

Final Filter Weight: mg

Initial Filter Weight: mg

Difference: mg (= mcg)

Pump Air Flow Rate Scale Reading: Start Stop

Average Air Flow Rate: 2.02 liters/minute

Sampling Time: Start 10:38 Stop 10:54 Unit of Measure Hoses/pp

Elapsed Time: 16 minutes. Air Volume Sampled 32.32 liters

Laboratory: Clayton Environmental Date Submitted: 3/13/19

CONTAMINANT BASE	CODE B1	CODE B2	S U F	ANALYSIS MCG	FACTOR	L T	TEST MEASUREMENT	PERMISSIBLE LIMIT
00,133,221,4				<3000		L	0.0.0.0.9.20	

Engineering & Administrative Controls: None

Personal Protection: D,1,1 No respirator

Other Potential Occupational Stress: ☐ Heat ☐ Radiation ☐ Noise ☐ Cutaneous/Ocular ☐ Vibration ☐ Sanitation ☐ Biological ☐ Illumination ☑ Ergonomic

Comments:

Industrial Hygienist: Jim Sprout Maint. Cd. C D R

012997

FORD MOTOR COMPANY
EMPLOYE HEALTH SERVICES

INDUSTRIAL HYGIENE
AIR ANALYSIS SAMPLING DATA SHEET

Date 03 10 98 Rec Type AC Laboratory No. _____

Source S Sample Designation & Date Retrieval No. SMS - 000047

Plant 1222 Cleveland Engine Plant #2 Building _____

Department 004980 Clutch Assy. Bay/Column No. _____

Work Station Location _____

Work Operation _____

Materials/By-products/Suppliers _____

Manufacturing _____

Standard Nos. _____

Production Rate: ☐ Normal ☐ Above Normal ☐ Below Normal Rate _____

Employe Name W ☐ BENTLEY

Ident. No. 299 44 4353

Job Title 380158.0 Bulk

Shift 2 Length of Work Shift 9.0 Hours

Hours/Shift 09.0 & Days/Week 5.0 at this Job

Sample Type (Check BZ, GA or SZ and LS or FD)
☐ Breathing Zone ☐ General Area ☐ Source Zone
☒ Laboratory Sample ☐ Field Determination

Air Sampling Method ☐ Filter ☐ Respirable Dust Filter ☐ Charcoal Tube ☐ Silica Gel Tube ☐ Dust Impinger ☐ Direct-Reading Instrument ☐ Detector Tube ☐ ESP ☐ Gas Sampling Bag ☐ Gas Bubbler ☐ Evacuated Flask ☐ Tape Sampler ☒ Other Bulk

Sample Basis (Circle One)
(A) – Management Request B – Follow-up Study
C – Medical Department Request D – Union Request/Grievance
E – Subsequent to Regulatory Agency Study F – Research
G – General Survey H – Employe Complaint/Suggestion

Sketch of Work Station

Foam Assy 4WD (oil + debris)

Not detected

012998

SAMPLE	CONTAMINANT	MAJOR	OTHER
	Total Dust/Fiber		
	Respirable Dust		
	Fume		
	Mist		
	Smoke		
	Gas		
	Vapor		

Air Sampling Device _____

Serial No. _____ Filter Type & Size _____

Final Filter Weight _____ mg

Initial Filter Weight _____ mg

Difference _____ mg

(= _____ mcg)

Pump Air Flow Rate Scale Reading: Start _____ Stop _____ Bulk sample

Average Air Flow Rate: _____ liters/minute

Sampling Time: Start _____ Stop _____ Unit of Measure _____

Elapsed Time: _____ minutes. Air Volume Sampled _____ liters

Laboratory Clayton Environmental Date Submitted 3/13/98

CONTAMINANT BASE	CODE B1	CODE B2	SUF	ANALYSIS MCG	FACTOR	L/T	TEST MEASUREMENT	PERMISSIBLE LIMIT
0,9,1,3,3,2,2,1,4							0,0,0,0,0,0,0	

Engineering & Administrative Controls None

Personal Protection D,1,1

Other Potential Occupational Stress: ☐ Noise ☐ Vibration ☐ Biological ☒ Ergonomic
☐ Heat ☐ Radiation ☐ Cutaneous/Ocular ☐ Sanitation ☐ Illumination

Comments _____

Industrial Hygienist Jim Sproat Maint. Cd. C D R

012999

FORD MOTOR COMPANY
EMPLOYE HEALTH SERVICES

INDUSTRIAL HYGIENE
AIR ANALYSIS SAMPLING DATA SHEET

Date 03 10 98 Rec Type AC Laboratory No.

Source S Sample Designation & Date Retrieval No. JMS - 000048

Plant 1222 Cleveland Engine Plant #2 Building

Department 004980 Clutch Assy. Bay/Column No.

Work Station Location

Work Operation

Materials/By-products/Suppliers

Manufacturing

Standard Nos.

Production Rate: ☐ Normal ☐ Above Normal ☐ Below Normal Rate

Employe Name E SCHEURING

Ident. No. 281 60 5539

Job Title 380580 Bulk

Shift 2 Length of Work Shift 9.0 Hours

Hours/Shift 09.0 & Days/Week 50 at this Job

From Assy. boxes

Sample Type (Check BZ, GA or SZ and LS or FD)
☐ Breathing Zone ☐ General Area ☐ Source Zone
☒ Laboratory Sample ☐ Field Determination

≤ 1% chrysotile

Air Sampling Method ☐ Filter ☐ Respirable Dust Filter
☐ Charcoal Tube ☐ Silica Gel Tube ☐ Dust Impinger
☐ Direct-Reading Instrument ☐ Detector Tube ☐ ESP
☐ Gas Sampling Bag ☐ Gas Bubbler ☐ Evacuated Flask
☐ Tape Sampler ☒ Other Bulk

Sample Basis (Circle One)
(A) Management Request B – Follow-up Study
C – Medical Department Request D – Union Request/Grievance
E – Subsequent to Regulatory Agency Study F – Research
G – General Survey H – Employe Complaint/Suggestion

Sketch of Work Station

013000

SAMPLE	COMTAMINANT	MAJOR	OTHER
	Total Dust/Fiber		
	Respirable Dust		
	Fume		
	Mist		
	Smoke		
	Gas		
	Vapor		

Air Sampling Device

Serial No. Filter Type & Size

Final Filter Weight mg

Initial Filter Weight mg

Difference mg

= mcg/

Pump Air Flow Rate Scale Reading: Start Stop

Average Air Flow Rate: liters/minute

Sampling Time: Start Stop

Elapsed Time: minutes. Air Volume Sampled liters

Laboratory Chytan Environmental

BULK SAMPLE

Unit of Measure

Date Submitted 3/13/18

CONTAMINANT BASE	CODE B1 B2	SUF	ANALYSIS MCG	FACTOR	L T	TEST MEASUREMENT	PERMISSIBLE LIMIT
0,0,1,3,3,2,1,4			≤ 1%			0,0,0,0,0,0,0,0	

Engineering & Administrative Controls None

Personal Protection 0,1,1

Other Potential Occupational Stress: ☐ Noise ☐ Vibration ☐ Biological ☒ Ergonomic
☐ Heat ☐ Radiation ☐ Cutaneous/Ocular ☐ Sanitation ☐ Illumination

Comments

Industrial Hygienist Jim Sprat Maint. Cd. C D R

013001