

August 15, 1978

PLAINTIFF'S EXHIBIT

SH-2925

H. M. Hancock

Apache-Blast abrasive would be a suitable replacement for sand from an industrial hygiene standpoint. The TLV for the mixture is calculated on the attached page. This TLV is significantly greater than the OSHA PEL for sand. Air samples of this abrasive should be collected as early as possible. G. L. Buchanan will conduct the air sampling.

JDR:gri



J. D. RANDELL

cc: M. T. Anderson
G. L. Buchanan/
D. O. Chrismer

ABS-058471

LAM 030846

APACHE-BLAST ABRASIVE
Typical Chemical Analysis

<u>TLV</u>		
5	Iron.....	41.2% (FeO = 32.0, Fe ₃ O ₄ = 9.2%)
10	Silicon.....	38.5 (no free silica)
10	Aluminum.....	9.41 (oxide)
5	Calcium.....	6.1 (oxide)
10	Magnesium.....	1.51 (oxide)
5	Zinc	1.46
5(c)	Manganese.....	0.50
1	Copper.....	0.38
10	Titanium.....	0.18
.15	Lead.....	0.015
0.5	Barium.....	0.027
2	Tin.....	0.038
-	Gallium.....	0.011
.05	Chromium.....	0.035
1	Nickel.....	0.012
10	Molybdenum.....	0.032
.05(c)	Vanadium.....	0.006
.01	Silver.....	0.0011
0.1	Cobalt.....	0.015
-	Strontium.....	0.029
	Gold.....	0.001 (not detected, less than)
	Platinum.....	0.002 (not detected, less than)
	Palladium.....	0.002 (not detected, less than)
	Rhodium.....	0.010 (not detected, less than)
	Ruthenium.....	0.010 (not detected, less than)

all other elements nil.

Note: All the elements occur as complex silicates in the slag matrix.
Some variances will occur with copper production; the above is certified
as typical and representative.

$$\begin{aligned}
 \text{TLV for mixture} &= \frac{1}{\frac{f_{Fe}}{TLV_{Fe}} + \frac{f_{Si}}{TLV_{Si}} + \frac{f_{Al}}{TLV_{Al}} + \frac{f_{Ca}}{TLV_{Ca}} + \frac{f_{Mg}}{TLV_{Mg}} + \frac{f_{Zn}}{TLV_{Zn}} + \dots} \\
 &= \frac{1}{\frac{.412}{5} + \frac{.385}{10} + \frac{.0941}{10} + \frac{.061}{5} + \frac{.0151}{10} + \frac{.0146}{5} + \dots} \\
 &= \frac{1}{.1432} \\
 &= 6 \text{ mg/m}^3
 \end{aligned}$$

ABS-058472

LAM 030847

APACHE-BLAST ABRASIVE
Typical Chemical Analysis

<u>TLV</u>		
5	Iron.....	41.2% (FeO = 32.0, Fe ₃ O ₄ = 9.2%)
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.05(c)	Vanadium.....	0.006
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	Gold.....	0.001 (not detected, less than)
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Note: All the elements occur as complex silicates in the slag matrix.
Some variances will occur with copper production; the above is certified
as typical and representative.

$$\begin{aligned}
 \text{TLV for mixture} &= \frac{1}{\frac{f_{Fe}}{TLV_{Fe}} + \frac{f_{Si}}{TLV_{Si}} + \frac{f_{Al}}{TLV_{Al}} + \frac{f_{Ca}}{TLV_{Ca}} + \frac{f_{Mg}}{TLV_{Mg}} + \frac{f_{Zn}}{TLV_{Zn}} + \dots} \\
 &= \frac{1}{\frac{.412}{5} + \frac{.385}{10} + \frac{.0941}{10} + \frac{.061}{5} + \frac{.0151}{10} + \frac{.0146}{5} + \dots} \\
 &= \frac{1}{.1432} \\
 &= 6 \text{ mg/m}^3
 \end{aligned}$$

ABS-058473



INDUSTRIAL HYGIENE SAMPLING FORM

 SAMPLING FORM NO. **012548**

 ENTER THE SAMPLING FORM NO. FROM THE UPPER RIGHT CORNER OF
OTHER RELATED SAMPLING FORMS.

 FILL IN IF MORE THAN ONE FORM IS REQUIRED TO DOCUMENT A SAMPLE
OR TO ESTABLISH ONE TIME WEIGHTED AVERAGE EXPOSURE.

RELATED SAMPLING FORM NUMBERS

 PAGE **1** OF **1**

EMPLOYEE SAMPLED

EMPLOYEE'S COMPANY (e.g. SHELL CO. OR CONTRACTOR)

SAMPLE TYPE

☒ PERSONAL ☐ AREA ☐ BLANK ☐ SURF ☐ SOURCE

DATE SAMPLED

SHIFT

SAMPLE NO.

PHONE

SHELL CO. OF TEXAS

ANALYSIS REQUIRED/CONTAMINANTS

10-16-78

5-5-16-16-15

5-5-16-16-15

5-5-16-16-15

SHELL CO. OF TEXAS

ANALYSIS REQUIRED/CONTAMINANTS

10-16-78

5-5-16-16-15

5-5-16-16-15

5-5-16-16-15

SHELL CO. OF TEXAS

ANALYSIS REQUIRED/CONTAMINANTS

10-16-78

5-5-16-16-15

5-5-16-16-15

5-5-16-16-15

SHELL CO. OF TEXAS

ANALYSIS REQUIRED/CONTAMINANTS

10-16-78

5-5-16-16-15

5-5-16-16-15

5-5-16-16-15

SHELL CO. OF TEXAS

ANALYSIS REQUIRED/CONTAMINANTS

10-16-78

5-5-16-16-15

5-5-16-16-15

5-5-16-16-15

SHELL CO. OF TEXAS

ANALYSIS REQUIRED/CONTAMINANTS

10-16-78

5-5-16-16-15

5-5-16-16-15

5-5-16-16-15

SHELL CO. OF TEXAS

ANALYSIS REQUIRED/CONTAMINANTS

10-16-78

5-5-16-16-15

5-5-16-16-15

5-5-16-16-15

SHELL CO. OF TEXAS

ANALYSIS REQUIRED/CONTAMINANTS

10-16-78

5-5-16-16-15

5-5-16-16-15

5-5-16-16-15

SHELL CO. OF TEXAS

ANALYSIS REQUIRED/CONTAMINANTS

10-16-78

5-5-16-16-15

5-5-16-16-15

5-5-16-16-15

SHELL CO. OF TEXAS

ANALYSIS REQUIRED/CONTAMINANTS

10-16-78

5-5-16-16-15

5-5-16-16-15

5-5-16-16-15

SHELL CO. OF TEXAS

ANALYSIS REQUIRED/CONTAMINANTS

10-16-78

5-5-16-16-15

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5-5-16-16-15

SHELL CO. OF TEXAS

ANALYSIS REQUIRED/CONTAMINANTS

10-16-78

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5-5-16-16-15

SHELL CO. OF TEXAS

ANALYSIS REQUIRED/CONTAMINANTS

10-16-78

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SHELL CO. OF TEXAS

ANALYSIS REQUIRED/CONTAMINANTS

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ANALYSIS REQUIRED/CONTAMINANTS

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SHELL CO. OF TEXAS

ANALYSIS REQUIRED/CONTAMINANTS

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SHELL CO. OF TEXAS

ANALYSIS REQUIRED/CONTAMINANTS

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SHELL CO. OF TEXAS

ANALYSIS REQUIRED/CONTAMINANTS

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SHELL CO. OF TEXAS

ANALYSIS REQUIRED/CONTAMINANTS

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SHELL CO. OF TEXAS

ANALYSIS REQUIRED/CONTAMINANTS

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5-5-16-16-15

SHELL CO. OF TEXAS

ANALYSIS REQUIRED/CONTAMINANTS

10-16-78

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5-5-16-16-15

SHELL CO. OF TEXAS

ANALYSIS REQUIRED/CONTAMINANTS

10-16-78

5-5-16-16-15

5-5-16-16-15

5-5-16-16-15

SHELL CO. OF TEXAS

ANALYSIS REQUIRED/CONTAMINANTS

10-16-78

5-5-16-16-15

5-5-16-16-15

5-5-16-16-15

ABS-058474

LAM 030849



INDUSTRIAL HYGIENE SAMPLING FORM

 ENTER THE SAMPLING FORM NO. FROM THE UPPER RIGHT CORNER OF
OTHER RELATED SAMPLING FORMS.

 SAMPLING FORM NO. **014193**

 FILL IN IF MORE THAN ONE FORM IS REQUIRED TO DOCUMENT A SAMPLE
OR TO ESTABLISH ONE TIME WEIGHTED AVERAGE EXPOSURE.

 RELATED SAMPLING
FORM NUMBERS

PAGE 1 OF 2

EMPLOYEE SAMPLED

EMPLOYEE'S COMPANY (e.g. SHELL CO. OR CONTRACTOR)

SHELL CO.

SHELL CO.

DATE SAMPLED

10-11-78

SAMPLE NO.

PHONE

EMPLOYEE NO.

AREA/UNIT (GIVE SPECIFIC NAME)

SHELL CO.

ANALYSIS REQUIRED/CONTAMINANTS

DATE SAMPLED

10-11-78

SAMPLE NO.

PHONE

JOB CLASSIFICATION

OPERATING CONDITIONS

ANALYSIS REQUIRED/CONTAMINANTS

DATE SAMPLED

DATE SAMPLED

10-11-78

SAMPLE NO.

PHONE

WIND

BAROMETER

TEMPERATURE

HUMIDITY

SPECIAL INSTRUCTIONS

DATE SAMPLED

DATE SAMPLED

10-11-78

TIME

WORK TASKS

PROT. EQUIP.

TIME AT TASK

INSTRUMENT READING

SKETCH AREA (AND/OR REMARKS)

DATE SAMPLED

DATE SAMPLED

10-11-78

1311

WORK TASKS

PROT. EQUIP.

TIME AT TASK

INSTRUMENT READING

SKETCH AREA (AND/OR REMARKS)

DATE SAMPLED

DATE SAMPLED

10-11-78

1113

WORK TASKS

PROT. EQUIP.

TIME AT TASK

INSTRUMENT READING

SKETCH AREA (AND/OR REMARKS)

DATE SAMPLED

DATE SAMPLED

10-11-78

1113

WORK TASKS

PROT. EQUIP.

TIME AT TASK

INSTRUMENT READING

SKETCH AREA (AND/OR REMARKS)

DATE SAMPLED

DATE SAMPLED

10-11-78

1113

WORK TASKS

PROT. EQUIP.

TIME AT TASK

INSTRUMENT READING

SKETCH AREA (AND/OR REMARKS)

DATE SAMPLED

DATE SAMPLED

10-11-78

1113

WORK TASKS

PROT. EQUIP.

TIME AT TASK

INSTRUMENT READING

SKETCH AREA (AND/OR REMARKS)

DATE SAMPLED

DATE SAMPLED

10-11-78

1113

WORK TASKS

PROT. EQUIP.

TIME AT TASK

INSTRUMENT READING

SKETCH AREA (AND/OR REMARKS)

DATE SAMPLED

DATE SAMPLED

10-11-78

1113

WORK TASKS

PROT. EQUIP.

TIME AT TASK

INSTRUMENT READING

SKETCH AREA (AND/OR REMARKS)

DATE SAMPLED

DATE SAMPLED

10-11-78

1113

WORK TASKS

PROT. EQUIP.

TIME AT TASK

INSTRUMENT READING

SKETCH AREA (AND/OR REMARKS)

DATE SAMPLED

DATE SAMPLED

10-11-78

1113

WORK TASKS

PROT. EQUIP.

TIME AT TASK

INSTRUMENT READING

SKETCH AREA (AND/OR REMARKS)

DATE SAMPLED

DATE SAMPLED

10-11-78

1113

WORK TASKS

PROT. EQUIP.

TIME AT TASK

INSTRUMENT READING

SKETCH AREA (AND/OR REMARKS)

DATE SAMPLED

DATE SAMPLED

10-11-78

1113

WORK TASKS

PROT. EQUIP.

TIME AT TASK

INSTRUMENT READING

SKETCH AREA (AND/OR REMARKS)

DATE SAMPLED

DATE SAMPLED

10-11-78

1113

WORK TASKS

PROT. EQUIP.

TIME AT TASK

INSTRUMENT READING

SKETCH AREA (AND/OR REMARKS)

DATE SAMPLED

DATE SAMPLED

10-11-78

1113

WORK TASKS

PROT. EQUIP.

TIME AT TASK

INSTRUMENT READING

SKETCH AREA (AND/OR REMARKS)

DATE SAMPLED

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10-11-78

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WORK TASKS

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INSTRUMENT READING

SKETCH AREA (AND/OR REMARKS)

DATE SAMPLED

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1113

WORK TASKS

PROT. EQUIP.

TIME AT TASK

INSTRUMENT READING

SKETCH AREA (AND/OR REMARKS)

DATE SAMPLED

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10-11-78

1113

WORK TASKS

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SKETCH AREA (AND/OR REMARKS)

DATE SAMPLED

DATE SAMPLED

10-11-78

1113

WORK TASKS

PROT. EQUIP.

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SKETCH AREA (AND/OR REMARKS)

DATE SAMPLED

DATE SAMPLED

10-11-78

1113

WORK TASKS

PROT. EQUIP.

TIME AT TASK

INSTRUMENT READING

SKETCH AREA (AND/OR REMARKS)

DATE SAMPLED

DATE SAMPLED

10-11-78

1113

WORK TASKS

PROT. EQUIP.

TIME AT TASK

INSTRUMENT READING

SKETCH AREA (AND/OR REMARKS)

DATE SAMPLED

DATE SAMPLED

10-11-78

ABS-058475

LAM 030850



ABS-058476



INDUSTRIAL HYGIENE SAMPLING FORM

 ENTER THE SAMPLING FORM NO. FROM THE UPPER RIGHT CORNER OF
OTHER RELATED SAMPLING FORMS.

 FILL IN IF MORE THAN ONE FORM IS REQUIRED TO DOCUMENT A SAMPLE
OR TO ESTABLISH ONE TIME WEIGHTED AVERAGE EXPOSURE.

 SAMPLING FORM NO. **014198**

RELATED SAMPLING FORM NUMBERS

 PAGE 1 OF 1

EMPLOYEE SAMPLED		EMPLOYEE'S COMPANY (e.g. SHELL CO. OR CONTRACTOR)		SAMPLING TYPE ☐ PERSONAL ☒ AREA ☐ BLANK ☐ SURFACE		DATE SAMPLED 10-10-78		SAMPLE NO. 5-10-10-10	
SOCIAL SECURITY NO.		SHELL LOCATION (e.g. DEER PARK M.C.)		ANALYSIS REQUIRED/CONTAMINANTS F-10-10-10		SHIFT 10-10-10		PHONE 5-10-10-10	
EMPLOYEE NO.		AREA/UNIT (GIVE SPECIFIC NAME)		POSSIBLE INTERFERENCES		SAMPLER BY 10-10-10		RETURN RESULTS TO (ADDRESS)	
JOB CLASSIFICATION		OPERATING CONDITIONS		SPECIAL INSTRUCTIONS					
WIND 10-10-10	BAROMETER 10-10-10	TEMPERATURE 10-10-10	HUMIDITY 10-10-10						
TIME	WORK TASKS	PROT. EQUIP.	TIME AT TASK	INSTRUMENT READING	SKETCH AREA (AND/OR REMARKS)				
08:15	STATIONARY		10-10-10						
09:35	STATIONARY								
10:01	STATIONARY								
11:11	STATIONARY								
* CHECK IN THIS COL. FOR EACH TASK WHERE PROTECTIVE EQUIP. WAS WORN TYPE: GIVE EQUIPMENT USED (e.g. RESPIRATOR, GLOVES, ETC.) MANUFACTURER, MODEL NO. ETC.									
INSTRUMENT TYPE & MODEL NO.		SERIAL NO.		CALIBRATED BY		DATE		METHOD	
10-10-10		10-10-10		10-10-10		10-10-10		10-10-10	
FLOW RATE	SAMPLING TIME	COUNTER READING	INITIAL	FINAL	NET	VOLUME PER COUNT	SAMPLE VOLUME		
10-10-10	10-10-10	10-10-10	10-10-10	10-10-10	10-10-10	10-10-10	10-10-10		
SAMPLE COLLECTOR: ☐ CHARCOAL TUBE ☐ FILTER (TOTAL) ☐ FILTER (RESPIRABLE) ☐ IMPINGER ☐ OTHER DESCRIBE, MANUFACTURER, MODEL NO. AND COMPOSITION OF ABSORBING SOLUTION (e.g. 10cc OF 0.1 N NaOH)									

ABS-058477

LAM 030852



INDUSTRIAL HYGIENE SAMPLING FORM

 ENTER THE SAMPLING FORM NO. FROM THE UPPER RIGHT CORNER OF
OTHER RELATED SAMPLING FORMS.

 SAMPLING FORM NO. **014199**

 RELATED SAMPLING
FORM NUMBERS

 PAGE 1 OF 1

 FILL IN IF MORE THAN ONE FORM IS REQUIRED TO DOCUMENT A SAMPLE
OR TO ESTABLISH ONE TIME WEIGHTED AVERAGE EXPOSURE.

IHL NO.

EMPLOYEE SAMPLED		EMPLOYEE'S COMPANY (e.g. SHELL CO. OR CONTRACTOR)		SAMPLE TYPE ☐ PERSONAL ☐ AREA ☐ BLANK		DATE SAMPLED 11-11-78		SHIFT 10:00-16:00		SAMPLE NO. 5610-16-11	
SOCIAL SECURITY NO.		SHELL LOCATION (e.g. DEER PARK M.C.)		☐ PERSONAL ☐ AREA ☐ BLANK		ANALYSIS REQUIRED/CONTAMINANTS		SHIFT		SAMPLE NO.	
EMPLOYEE NO.		AREA/UNIT (GIVE SPECIFIC NAME)		☐ PERSONAL ☐ AREA ☐ BLANK		ANALYSIS REQUIRED/CONTAMINANTS		SHIFT		SAMPLE NO.	
JOB CLASSIFICATION		OPERATING CONDITIONS		☐ PERSONAL ☐ AREA ☐ BLANK		ANALYSIS REQUIRED/CONTAMINANTS		SHIFT		SAMPLE NO.	
WIND		BAROMETER		TEMPERATURE		HUMIDITY		SPECIAL INSTRUCTIONS		RETURN RESULTS TO (ADDRESS)	
TIME		WORK TASKS		PROT. EQUIP.		TIME AT TASK		INSTRUMENT READING		SKETCH AREA (AND/OR REMARKS)	
1310		ST. 101 at 10:00 AM				4:00				Sketch of area with hatched regions and labels 'Z' and '1'.	
1405		ST. 101 at 10:00 AM									
1410		ST. 101 at 10:00 AM									
1415		ST. 101 at 10:00 AM									
1420		ST. 101 at 10:00 AM									
1425		ST. 101 at 10:00 AM									
1430		ST. 101 at 10:00 AM									
1435		ST. 101 at 10:00 AM									
1440		ST. 101 at 10:00 AM									
1445		ST. 101 at 10:00 AM									
1450		ST. 101 at 10:00 AM									
1455		ST. 101 at 10:00 AM									
1460		ST. 101 at 10:00 AM									
1465		ST. 101 at 10:00 AM									
1470		ST. 101 at 10:00 AM									
1475		ST. 101 at 10:00 AM									
1480		ST. 101 at 10:00 AM									
1485		ST. 101 at 10:00 AM									
1490		ST. 101 at 10:00 AM									
1495		ST. 101 at 10:00 AM									
1500		ST. 101 at 10:00 AM									
1505		ST. 101 at 10:00 AM									
1510		ST. 101 at 10:00 AM									
1515		ST. 101 at 10:00 AM									
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1595		ST. 101 at 10:00 AM									
1600		ST. 101 at 10:00 AM									
1605		ST. 101 at 10:00 AM									
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1685		ST. 101 at 10:00 AM									
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1695		ST. 101 at 10:00 AM									
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1795		ST. 101 at 10:00 AM									
1800		ST. 101 at 10:00 AM									
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1815		ST. 101 at 10:00 AM									
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1845		ST. 101 at 10:00 AM									
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1855		ST. 101 at 10:00 AM									
1860		ST. 101 at 10:00 AM									
1865		ST. 101 at 10:00 AM									
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1885		ST. 101 at 10:00 AM									
1890		ST. 101 at 10:00 AM									
1895		ST. 101 at 10:00 AM									
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1905		ST. 101 at 10:00 AM									
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1915		ST. 101 at 10:00 AM									
1920		ST. 101 at 10:00 AM									
1925		ST. 101 at 10:00 AM									
1930		ST. 101 at 10:00 AM									
1935		ST. 101 at 10:00 AM									
1940		ST. 101 at 10:00 AM									
1945		ST. 101 at 10:00 AM									
1950		ST. 101 at 10:00 AM									
1955		ST. 101 at 10:00 AM									
1960		ST. 101 at 10:00 AM									
1965		ST. 101 at 10:00 AM									
1970		ST. 101 at 10:00 AM									
1975		ST. 101 at 10:00 AM									
1980		ST. 101 at 10:00 AM									
1985		ST. 101 at 10:00 AM									
1990		ST. 101 at 10:00 AM									
1995		ST. 101 at 10:00 AM									
2000		ST. 101 at 10:00 AM									

 * CHECK IN THIS COL. FOR EACH TASK WHERE PROTECTIVE EQUIP. WAS WORN
TYPE: GIVE EQUIPMENT USED (e.g. RESPIRATOR, GLOVES, ETC.) MANUFACTURER, MODEL NO. ETC.

INSTRUMENT TYPE & MODEL NO.		SERIAL NO.		CALIBRATED BY		DATE		REFERENCE		METHOD	
1000		1000		1000		1000		1000		1000	
FLOW RATE		SAMPLING TIME		COUNTER READING		INITIALS		FINAL		NET	
1000		1000		1000		1000		1000		1000	
SAMPLE COLLECTOR		CHARCOAL TUBE		FILTER (TOTAL)		FILTER (RESPIRABLE)		IMPINGER		VOLUME PER COUNT	
1000		1000		1000		1000		1000		1000	

ABS-058478

LAM 030853





INDUSTRIAL HYGIENE

SAMPLING FORM

ENTER THE SAMPLING FORM NO. FROM THE UPPER RIGHT CORNER OF
OTHER RELATED SAMPLING FORMS.

RELATED SAMPLING
FORM NUMBERS

PAGE 1 OF 1

IF MORE THAN ONE FORM IS REQUIRED TO DOCUMENT A SAMPLE
ON TO ESTABLISH ONE TIME WEIGHTED AVERAGE EXPOSURE.

S. IHL NO. 5-2-10-11-18

EMPLOYEE SAMPLED	EMPLOYEE'S COMPANY (e.g. SHELL CO. OR CONTRACTOR)		SHELL LOCATION (e.g. DEER PARK M.C.)		SAMPLE TYPE ☐ PERSONAL ☐ AREA ☐ BLANK ☐ BULK ☐ SOURCE	DATE SAMPLED	SAMPLE NO.	
SOCIAL SECURITY NO.	SHELL LOCATION (GIVE SPECIFIC NAME)		ANALYSIS REQUIRED/CONTAMINANTS			SHIFT		
EMPLOYEE NO.	OPERATING CONDITIONS		POSSIBLE INTERFERENCES		SAMPLED BY RETURN RESULTS TO (ADDRESS)		PHONE	
JOB CLASSIFICATION	WIND	BAROMETER	TEMPERATURE	HUMIDITY	SPECIAL INSTRUCTIONS			
TIME	WORK TASKS				PRO. EQUIP. #	TIME AT TASK	INSTRUMENT READING	
* CHECK IN THIS COL. FOR EACH TASK WHERE PROTECTIVE EQUIP. WAS WORN TYPE: GIVE EQUIPMENT USED (e.g. RESPIRATOR, GLOVES, ETC.) MANUFACTURER, MODEL NO. ETC.					SKETCH AREA (AND/OR REMARKS)			
FLOW RATE	SAMPLING TIME	COUNTER READING	CALIBRATED BY	DATE	REFERENCE	METHOD		
INITIAL	FINAL	NET	VOLUME PER COUNT	SAMPLE VOLUME				

SAMPLE COLLECTOR

☐ CHARCOAL TUBE ☐ FILTER (TOTAL) ☐ FILTER (RESPIRABLE)

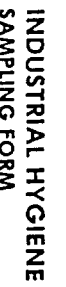
DESCRIBE: (MFR/TYPER/NO./COMPOSITION)
IF AN IMPINGER/BUCKET IS USED GIVE COMPOSITION OR ABSORBING SOLUTION (e.g. 10cc 0.5% N MOON).

IMPINGER

DATE

ABS-058479

LAM 030854



INDUSTRIAL HYGIENE SAMPLING FORM

FILL IN IF MORE THAN ONE FORM IS REQUIRED TO DOCUMENT A SAMPLE

51

RELATED SAMPLING FORM NUMBERS

PAGE 9

EMPLOYEE SAMPLED	EMPLOYEE'S COMPANY (e.g. SELLER CO. OR CONTRACTOR)	SAMPLE TYPE	DATE SAMPLED
SOCIAL SECURITY NO.	SHELL LOCATION (e.g. DEER PARK M.C.)	ANALYSIS REQUIRED/CONTAMINANTS	SHIFT
EMPLOYEE NO.	AREA/UNIT (GIVE SPECIFIC NAME)	POSSIBLE INTERFERENCES	SAMPLE NO.
JOB CLASSIFICATION	OPERATING CONDITIONS	SPECIAL INSTRUCTIONS	PHONE
WIND	BAROMETER	TEMPERATURE	HUMIDITY
TIME	WORK TASKS	PROB. FOR	TIME AT TASK
INSTRUMENT READING	SKETCH AREA (AND/OR REMARKS)		
FLOW RATE	SAMPLING TIME	COUNTER READING	DATE
INITIAL	SERIAL NO.	CALIBRATED BY	REFERENCE
NET	VOLUME PER COUNT	METHOD	
* CHECK IN THIS COL. FOR EACH TASK WHERE PROTECTIVE EQUIP. WAS WORN TYPE: GIVE EQUIPMENT USED (e.g. RESPIRATOR, GLOVES, ETC.) MANUFACTURER, MODEL NO. ETC.			
CHARCOAL TUBE ☐ FILTER (TOTAL) ☐ FILTER (RESPIRABLE) ☐ IMPINGER ☐ DESCRIBE: (MFR/TYPER/NO./COMPOSITION) IF AN IMPINGER/BUBBLER IS USED GIVE COMPOSITION OF ABSORBING SOLUTION (e.g. 10cc of 0.1N NaOH)			

ABS-058480

LAM 030855



INDUSTRIAL HYGIENE SAMPLING FORM

ENTER THE SAMPLING FORM NO. FROM THE UPPER RIGHT CORNER OF
OTHER RELATED SAMPLING FORMS.

SAMPLING FORM NO. **014002**

ILL. NO.

RELATED SAMPLING
FORM NUMBERS

PAGE 1 OF 1

EMPLOYEE SAMPLED

EMPLOYEE'S COMPANY (e.g. SHELL CO. OR CONTRACTOR)

SOCIAL SECURITY NO.

SHELL LOCATION (e.g. DEER PARK M.C.)

EMPLOYEE NO.

AREA/UNIT (GIVE SPECIFIC NAME)

JOB CLASSIFICATION

OPERATING CONDITIONS

POSSIBLE INTERFERENCES

RETURN RESULTS TO (ADDRESS)

WIND

BAROMETER

TEMPERATURE

HUMIDITY

SPECIAL INSTRUCTIONS

TIME

WORK TASKS

PROT. EQUIP.

TIME AT TASK

INSTRUMENT READING

SKETCH AREA (AND/OR REMARKS)

DATE SAMPLED

SHIFT

SAMPLE NO.

SAMPLED BY

PHONE

TIME	WORK TASKS	PROT. EQUIP.	TIME AT TASK	INSTRUMENT READING	SKETCH AREA (AND/OR REMARKS)
08:30	STATIONARY				
09:00	STATIONARY				
09:30	STATIONARY				
10:00	STATIONARY				
10:30	STATIONARY				
11:00	STATIONARY				
11:30	STATIONARY				
12:00	STATIONARY				
12:30	STATIONARY				
13:00	STATIONARY				

* CHECK IN THIS COL. FOR EACH TASK WHERE PROTECTIVE EQUIP. WAS WORN
TYPE: GIVE EQUIPMENT USED (e.g. RESPIRATOR, GLOVES, ETC.) MANUFACTURER, MODEL NO. ETC.

INSTRUMENT TYPE & MODEL NO.

SERIAL NO.

CALIBRATED BY

DATE

REFERENCE

METHOD

FLOW RATE

SAMPLING TIME

COUNTER READING

INITIAL

FINAL

NET

VOLUME PER COUNT

SAMPLE VOLUME

SAMPLE COLLECTOR

☐ CHARCOAL TUBE
☐ FILTER (TOTAL)
☐ FILTER (RESPIRABLES)

☐ DESCALIB. (MFR/TYPER/LOT NO./COMPOSITION)
☐ IF AN IMPINGER/BUBBLER IS USED GIVE COMPOSITION OF ABSORBING SOLUTION (e.g. 10cc OF 0.1N NaOH)

☐ IMPINGER
☐

ABS-058481

LAM 030856

[illegible]

ABS-058482

LAM 030857



INDUSTRIAL HYGIENE SAMPLING FORM

SAMPLING FORM NO. **011750**

ENTER THE SAMPLING FORM NO. FROM THE UPPER RIGHT CORNER OF
OTHER RELATED SAMPLING FORMS.

FILL IN IF MORE THAN ONE FORM IS REQUIRED TO DOCUMENT A SAMPLE
OR TO ESTABLISH ONE TIME WEIGHTED AVERAGE EXPOSURE.

INITIALS

RELATED SAMPLING FORM NUMBERS

PAGE 1 OF 1

EMPLOYEE SAMPLED

EMPLOYEE'S COMPANY (e.g. SHELL CO. OR CONTRACTOR)

SOCIAL SECURITY NO.

SHELL LOCATION (e.g. ODER PARK M.C.)

EMPLOYEE NO.

AREA/UNIT (GIVE SPECIFIC NAME)

JOB CLASSIFICATION

OPERATING CONDITIONS

WIND

BAROMETER

TEMPERATURE

HUMIDITY

SPECIAL INSTRUCTIONS

TIME

WORK TASKS

PROT. EQUIP.

TIME AT TASK

INSTRUMENT READING

SKETCH AREA (AND/OR REMARKS)

DATE SAMPLED

SHIFT

SAMPLE NO.

PHONE

RETURN RESULTS TO (ADDRESS)

* CHECK IN THIS COL. FOR EACH TASK WHERE PROTECTIVE EQUIP. WAS WORN
TYPE: GIVE EQUIPMENT USED (e.g. RESPIRATOR, GLOVES, ETC.) MANUFACTURER, MODEL NO. ETC.

INSTRUMENT TYPE & MODEL NO.

SERIAL NO.

CALIBRATED BY

DATE

REFERENCE

METHOD

FLOW RATE

SAMPLING TIME

COUNTER READING

INITIAL:

NET:

VOLUME PER COUNT

SAMPLE VOLUME

SAMPLE COLLECTOR

☐ CHARCOAL TUBE ☐ FILTER (TOTAL) ☐ FILTER (RESPIRABLE) ☐ IMPINGER ☐ SOLUTION (e.g. 10cc of 0.1N NaOH)

FINAL: ☐ IMPINGER ☐

ABS-058484

LAM 030859



PAGE ____ OF ____

FILL IN IF MORE THAN ONE FORM IS REQUIRED TO DOCUMENT A SAMPLE OR TO ESTABLISH ONE TIME WEIGHTED AVERAGE EXPOSURE.

W.H. & C.

[illegible]

ABS-058485

LAM 030860



INDUSTRIAL HYGIENE SAMPLING FORM

ENTER THE SAMPLING FORM NO. FROM THE UPPER RIGHT CORNER OF
OTHER RELATED SAMPLING FORMS.

FILL IN IF MORE THAN ONE FORM IS REQUIRED TO DOCUMENT A SAMPLE OR TO ESTABLISH ONE TIME WEIGHTED AVERAGE EXPOSURE.

ILL. O.

**RELATED SAMPLING
FORM NUMBERS**

PAGE 1 OF 1

[illegible]

ABS-058486

LAM 030861



-058487

LAM 030862



INDUSTRIAL HYGIENE SAMPLING FORM

 SAMPLING FORM NO. **011841**

 ENTER THE SAMPLING FORM NO. FROM THE UPPER RIGHT CORNER OF
OTHER RELATED SAMPLING FORMS.

 FIL IN IF MORE THAN ONE FORM IS REQUIRED TO DOCUMENT A SAMPLE
OR TO ESTABLISH ONE TIME WEIGHTED AVERAGE EXPOSURE.

I.H. NO.

 RELATED SAMPLING
FORM NUMBERS

 PAGE **1** OF **1**

EMPLOYEE'S COMPANY (e.g. SHELL CO. OR CONTRACTOR)		SHELL CO. OF INDIA		SAMPLE TYPE ☒ PERSONAL ☐ AREA ☐ BLANK ☐ SOURCE		DATE SAMPLED		SHIFT		SAMPLE NO.	
OFFICIAL SECURITY NO.		SHELL LOCATION (e.g. OILER PARK M.C.)		ANALYSIS REQUIRED/CONTAMINANTS		FRESH AIR		SAMPLER BY		PHONE	
EMPLOYEE NO.		AREA/UNIT (GIVE SPECIFIC NAME)		OPERATING CONDITIONS		POSSIBLE INTERFERENCES		RETURN RESULTS TO (ADDRESS)			
OB CLASSIFICATION		BAROMETER		TEMPERATURE		HUMIDITY					
WIND		30.5		43.0		41.6%					
TIME		WORK TASKS		PROT. EQUIP.		TIME AT TASK		INSTRUMENT READING		SKETCH AREA (AND/OR REMARKS)	
0200		STATION 1		X		10.00		10.00		STATION 1, 1137/105, 1000K, 1000K, 1000K	
0230		STATION 2				10.00		10.00		STATION 2, 1137/105, 1000K, 1000K, 1000K	
0300		STATION 3				10.00		10.00		STATION 3, 1137/105, 1000K, 1000K, 1000K	
0330		STATION 4				10.00		10.00		STATION 4, 1137/105, 1000K, 1000K, 1000K	
0400		STATION 5				10.00		10.00		STATION 5, 1137/105, 1000K, 1000K, 1000K	
0430		STATION 6				10.00		10.00		STATION 6, 1137/105, 1000K, 1000K, 1000K	
0500		STATION 7				10.00		10.00		STATION 7, 1137/105, 1000K, 1000K, 1000K	
0530		STATION 8				10.00		10.00		STATION 8, 1137/105, 1000K, 1000K, 1000K	
0600		STATION 9				10.00		10.00		STATION 9, 1137/105, 1000K, 1000K, 1000K	
0630		STATION 10				10.00		10.00		STATION 10, 1137/105, 1000K, 1000K, 1000K	
0700		STATION 11				10.00		10.00		STATION 11, 1137/105, 1000K, 1000K, 1000K	
0730		STATION 12				10.00		10.00		STATION 12, 1137/105, 1000K, 1000K, 1000K	
0800		STATION 13				10.00		10.00		STATION 13, 1137/105, 1000K, 1000K, 1000K	
0830		STATION 14				10.00		10.00		STATION 14, 1137/105, 1000K, 1000K, 1000K	
0900		STATION 15				10.00		10.00		STATION 15, 1137/105, 1000K, 1000K, 1000K	
0930		STATION 16				10.00		10.00		STATION 16, 1137/105, 1000K, 1000K, 1000K	
1000		STATION 17				10.00		10.00		STATION 17, 1137/105, 1000K, 1000K, 1000K	
1030		STATION 18				10.00		10.00		STATION 18, 1137/105, 1000K, 1000K, 1000K	
1100		STATION 19				10.00		10.00		STATION 19, 1137/105, 1000K, 1000K, 1000K	
1130		STATION 20				10.00		10.00		STATION 20, 1137/105, 1000K, 1000K, 1000K	
1200		STATION 21				10.00		10.00		STATION 21, 1137/105, 1000K, 1000K, 1000K	
1230		STATION 22				10.00		10.00		STATION 22, 1137/105, 1000K, 1000K, 1000K	
1300		STATION 23				10.00		10.00		STATION 23, 1137/105, 1000K, 1000K, 1000K	
1330		STATION 24				10.00		10.00		STATION 24, 1137/105, 1000K, 1000K, 1000K	
1400		STATION 25				10.00		10.00		STATION 25, 1137/105, 1000K, 1000K, 1000K	
1430		STATION 26				10.00		10.00		STATION 26, 1137/105, 1000K, 1000K, 1000K	
1500		STATION 27				10.00		10.00		STATION 27, 1137/105, 1000K, 1000K, 1000K	
1530		STATION 28				10.00		10.00		STATION 28, 1137/105, 1000K, 1000K, 1000K	
1600		STATION 29				10.00		10.00		STATION 29, 1137/105, 1000K, 1000K, 1000K	
1630		STATION 30				10.00		10.00		STATION 30, 1137/105, 1000K, 1000K, 1000K	
1700		STATION 31				10.00		10.00		STATION 31, 1137/105, 1000K, 1000K, 1000K	
1730		STATION 32				10.00		10.00		STATION 32, 1137/105, 1000K, 1000K, 1000K	
1800		STATION 33				10.00		10.00		STATION 33, 1137/105, 1000K, 1000K, 1000K	
1830		STATION 34				10.00		10.00		STATION 34, 1137/105, 1000K, 1000K, 1000K	
1900		STATION 35				10.00		10.00		STATION 35, 1137/105, 1000K, 1000K, 1000K	
1930		STATION 36				10.00		10.00		STATION 36, 1137/105, 1000K, 1000K, 1000K	
2000		STATION 37				10.00		10.00		STATION 37, 1137/105, 1000K, 1000K, 1000K	
2030		STATION 38				10.00		10.00		STATION 38, 1137/105, 1000K, 1000K, 1000K	
2100		STATION 39				10.00		10.00		STATION 39, 1137/105, 1000K, 1000K, 1000K	
2130		STATION 40				10.00		10.00		STATION 40, 1137/105, 1000K, 1000K, 1000K	
2200		STATION 41				10.00		10.00		STATION 41, 1137/105, 1000K, 1000K, 1000K	
2230		STATION 42				10.00		10.00		STATION 42, 1137/105, 1000K, 1000K, 1000K	
2300		STATION 43				10.00		10.00		STATION 43, 1137/105, 1000K, 1000K, 1000K	
2330		STATION 44				10.00		10.00		STATION 44, 1137/105, 1000K, 1000K, 1000K	
2400		STATION 45				10.00		10.00		STATION 45, 1137/105, 1000K, 1000K, 1000K	
2430		STATION 46				10.00		10.00		STATION 46, 1137/105, 1000K, 1000K, 1000K	
2500		STATION 47				10.00		10.00		STATION 47, 1137/105, 1000K, 1000K, 1000K	
2530		STATION 48				10.00		10.00		STATION 48, 1137/105, 1000K, 1000K, 1000K	
2600		STATION 49				10.00		10.00		STATION 49, 1137/105, 1000K, 1000K, 1000K	
2630		STATION 50				10.00		10.00		STATION 50, 1137/105, 1000K, 1000K, 1000K	
2700		STATION 51				10.00		10.00		STATION 51, 1137/105, 1000K, 1000K, 1000K	
2730		STATION 52				10.00		10.00		STATION 52, 1137/105, 1000K, 1000K, 1000K	
2800		STATION 53				10.00		10.00		STATION 53, 1137/105, 1000K, 1000K, 1000K	
2830		STATION 54				10.00		10.00		STATION 54, 1137/105, 1000K, 1000K, 1000K	
2900		STATION 55				10.00		10.00		STATION 55, 1137/105, 1000K, 1000K, 1000K	
2930		STATION 56				10.00		10.00		STATION 56, 1137/105, 1000K, 1000K, 1000K	
3000		STATION 57				10.00		10.00		STATION 57, 1137/105, 1000K, 1000K, 1000K	
3030		STATION 58				10.00		10.00		STATION 58, 1137/105, 1000K, 1000K, 1000K	
3100		STATION 59				10.00		10.00		STATION 59, 1137/105, 1000K, 1000K, 1000K	
3130		STATION 60				10.00		10.00		STATION 60, 1137/105, 1000K, 1000K, 1000K	
3200		STATION 61				10.00		10.00		STATION 61, 1137/105, 1000K, 1000K, 1000K	
3230		STATION 62				10.00		10.00		STATION 62, 1137/105, 1000K, 1000K, 1000K	
3300		STATION 63				10.00		10.00		STATION 63, 1137/105, 1000K, 1000K, 1000K	
3330		STATION 64				10.00		10.00		STATION 64, 1137/105, 1000K, 1000K, 1000K	
3400		STATION 65				10.00		10.00		STATION 65, 1137/105, 1000K, 1000K, 1000K	
3430		STATION 66				10.00		10.00		STATION 66, 1137/105, 1000K, 1000K, 1000K	
3500		STATION 67				10.00		10.00		STATION 67, 1137/105, 1000K, 1000K, 1000K	
3530		STATION 68				10.00		10.00		STATION 68, 1137/105, 1000K, 1000K, 1000K	
3600		STATION 69				10.00		10.00		STATION 69, 1137/105, 1000K, 1000K, 1000K	
3630		STATION 70				10.00		10.00		STATION 70, 1137/105, 1000K, 1000K, 1000K	
3700		STATION 71				10.00		10.00		STATION 71, 1137/105, 1000K, 1000K, 1000K	
3730		STATION 72				10.00		10.00		STATION 72, 1137/105, 1000K, 1000K, 1000K	
3800		STATION 73				10.00		10.00		STATION 73, 1137/105, 1000K, 1000K, 1000K	
3830		STATION 74				10.00		10.00		STATION 74, 1137/105, 1000K, 1000K, 1000K	
3900		STATION 75				10.00		10.00		STATION 75, 1137/105, 1000K, 1000K, 1000K	
3930		STATION 76				10.00		10.00		STATION 76, 1137/105, 1000K, 1000K, 1000K	
4000		STATION 77				10.00		10.00		STATION 77, 1137/105, 1000K, 1000K, 1000K	
4030		STATION 78				10.00		10.00		STATION 78, 1137/105, 1000K, 1000K, 1000K	
4100		STATION 79				10.00		10.00		STATION 79, 1137/105, 1000K, 1000K, 1000K	
4130		STATION 80				10.00		10.00		STATION 80, 1137/105, 1000K, 1000K, 1000K	
4200		STATION 81				10.00		10.00		STATION 81, 1137/105, 1000K, 1000K, 1000K	
4230		STATION 82				10.00		10.00		STATION 82, 1137/105, 1000K, 1000K, 1000K	
4300		STATION 83				10.00		10.00		STATION 83, 1137/105, 1000K, 1000K, 1000K	
4330		STATION 84				10.00		10.00		STATION 84, 1137/105, 1000K, 1000K, 1000K	
4400		STATION 85				10.00		10.00		STATION 85, 1137/105, 1000K, 1000K, 1000K	
4430		STATION 86				10.00		10.00		STATION 86, 1137/105, 1000K, 1000K, 1000K	
4500		STATION 87				10.00		10.00		STATION 87, 1137/105, 1000K, 1000K, 1000K	
4530		STATION 88				10.00		10.00		STATION 88, 1137/105, 1000K, 1000K, 1000K	
4600		STATION 89				10.00		10.00		STATION 89, 1137/105, 1000K, 1000K, 1000K	
4630		STATION 90				10.00		10.00		STATION 90, 1137/105, 1000K, 1000K, 1000K	
4700		STATION 91				10.00		10.00		STATION 91, 1137/105, 1000K, 1000K, 1000K	
4730		STATION 92				10.00		10.00		STATION 92, 1137/105, 1000K, 1000K, 1000K	
4800		STATION 93				10.00		10.00		STATION 93, 1137/105, 1000K, 1000K, 1000K	
4830		STATION 94				10.00		10.00		STATION 94, 1137/105, 1000K, 1000K, 1000K	
4900		STATION 95				10.00		10.00		STATION 95, 1137/105, 1000K, 1000K, 1000K	
4930		STATION 96				10.00		10.00		STATION 96, 1137/105, 1000K, 1000K, 1000K	
5000		STATION 97				10.00		10.00		STATION 97, 1137/105, 1000K, 1000K, 1000K	
5030		STATION 98				10.00		10.00		STATION 98, 1137/105, 1000K, 1000K, 1000K	
5100		STATION 99				10.00		10.00		STATION 99, 1137/105, 1000K, 1000K, 1000K	
5130</											



Q1184.2

PAGE 2 OF 2

11. NO.

ENTER THE SAMPLING FORM NO. FROM THE UPPER RIGHT CORNER OF
OTHER RELATED SAMPLING FORMS.

FILL IN IF MORE THAN ONE FORM IS REQUIRED TO DOCUMENT A SAMPLE OR TO ESTABLISH ONE TIME WEIGHTED AVERAGE EXPOSURE.

EMPLOYEE SAMPLED		EMPLOYEE'S COMPANY (e.g. SHELL CO. OR CONTRACTOR)		SAMPLE TYPE ☐ PERSONAL ☒ AREA ☐ BLANK		DATE SAMPLED	
SOCIAL SECURITY NO.		SHELL LOCATION (e.g. DEER PARK M.C.)		ANALYSIS REQUIRED/CONTAMINANTS		SHIFT	
EMPLOYEE NO.		AREA/UNIT (GIVE SPECIFIC NAME)		POSSIBLE INTERFERENCES		SAMPLE NO.	
JOB CLASSIFICATION		OPERATING CONDITIONS		SPECIAL INSTRUCTIONS		RETURN RESULTS TO (ADDRESS)	
WIND	BAROMETER	TEMPERATURE	HUMIDITY				
WIND DIRECTION	BAROMETER	TEMPERATURE	HUMIDITY				
TIME	WORK TASKS	PROT. EQUIP. *	TIME AT TASK	INSTRUMENT READING	SKETCH AREA (AND/OR REMARKS)		
0800	Started pump AS Shovelblast				Met 1000		
	Started work Shovelblast				Met 1000		
	Pipe in more area				Met 1000		
0830	Stopped pump so blasting				Met 1000		
	Could reassign pipe being				Met 1000		
	worked on				Met 1000		
0900	Started pump - Shovelblast				Met 1000		
	Stopped work again				Met 1000		
0930	Stopped pump for break				Met 1000		
1000	Started pump After break				Met 1000		
1130	Stopped pump for break				Met 1000		
	Shovelblast work in area				Met 1000		
	After break				Met 1000		
	For sketch See Radioed from 011802				Met 1000		

* CHECK IN THIS COL. FOR EACH TASK WHERE PROTECTIVE EQUIP. WAS WORN

TYPE: GIVE EQUIPMENT USED (e.g. RESPIRATOR, GLOVES, ETC.) MANUFACTURER, MODEL NO. ETC.

INSTRUMENT TYPE & MODEL NO.

FLOW RATE

SAMPLING TIME

COUNTER READING

INITIAL

FINAL

NET

VOLUME PER COUNT

SAMPLE VOLUME

METHOD

DATE

REFERENCE

376. Lines

ABS-058490

LAM 030865



FILL IN IF MORE THAN ONE FORM IS REQUIRED TO DOCUMENT A SAMPLE OR TO ESTABLISH ONE TIME WEIGHTED AVERAGE EXPOSURE

THE OCEANOGRAPHY

PAGE OF

[illegible]

ABS-058491

LAM 030866



ABS-058492



INDUSTRIAL HYGIENE SAMPLING FORM

0.1 INCHES

SAMPLING FORM NO. 011043

ENTER THE SAMPLING FORM NO. FROM THE UPPER RIGHT
OTHER RELATED SAMPLING FORMS.

RELATED SAMPLING
FORM NUMBERS

NEE OF
FILL IN IF MORE THAN ONE FORM IS REQUIRED TO DOCUMENT A SAMPLE
OR TO ESTABLISH ONE TIME WEIGHTED AVERAGE EXPOSURE.

PAGE 1 OF 1

I. NO.

EMPLOYEE SAMPLED

EMPLOYEE'S COMPANY (e.g. SHELL CO. OR CONTRACTOR)

SOCIAL SECURITY NO.

SHELL LOCATION (e.g. DEER PARK M.C.)

EMPLOYEE NO.

DEER PARK
MEASUREMENT (GIVE SPECIFIC NAME)

JOB CLASSIFICATION

Chemical - Sulfuric Acid

ANALYSIS REQUIRED/CONTAMINANTS

DATE SAMPLED

SHIFT

PHONE

WIND

BAROMETER

TEMPERATURE

HUMIDITY

SPECIAL INSTRUCTIONS

RETURN RESULTS TO (ADDRESS)

Sec 1329-112-1

TIME

WORK TASKS

BOB

TIME

INSTRUMENT

SKETCH AREA (AND/OR REMARKS)

SAMPLE NO.

PHONE

1310 Started Sampler

Blasting Time

50min.

Positioned on drum (3.5' above
ground) adjacent to
sample 1329-112-4

1530 Stopped Sampler

* CHECK IN THIS COL. FOR EACH TASK WHERE PROTECTIVE EQUIP. WAS WORN
TYPE: GIVE EQUIPMENT USED (e.g. RESPIRATOR, GLOVES, ETC.) MANUFACTURER, MODEL NO. ETC.

SERIAL NO.

CAUTIONED BY

DATE

REFERENCE

METHOD

INSTRUMENT TYPE & MODEL NO.

SAMPLING TIME

COUNTER READING

INITIAL:

NET:

VOLUME PER COUNT

SAMPLE VOLUME

SAMPLE
COLLECTOR

1.7 ppm

140 min.

1000 ml

238 liters

1000 ml

12-8-76

1000 ml

238 liters

238 liters

ABS-058493

LAM 030868

SAMPLING
FORM NO.

ACCOUNTING CODE

428194111

DATE RECEIVED	WEEK	DAY
5/10/71	50	4

COPIATION OF SAMPLE UPON RECEIPT

☒ OK

☐ Other (Describe)

ANALYZED BY

EXAM - JFM

SIXX JFM

DATE 11/1/71

LAB RECORD NO. 1329-32

GROUP

EP

METHOD NUMBER AND OR DESCRIPTION

PICAM

109

METHOD CODE

GRAV

SIXR

REFERENCE

NUMBER OF ANALYSES

1

1

DATE REPORTED (WEEK - DAY)

1/41

2.3

BENCH HOURS (XXX.X)

0.5

1

ANALYTICAL RESULTS (CORRECTED FOR BLANK)
REPORT MAIN, BACKUP, TOTAL, BLANK

UNITS: ☐ PPMV ☒ mg/m³ ☐

EXPOSURE CALCULATION
TWA, PEAK

EXAM = 0.77 mg/m³

MS 5.06/m³

0.15

SUPERVISING CHEMIST

[Signature]

ND = NO⁺ DETECTED
(REPORT LIM. DETECTION)

CALCULATED BY

ABS-058494

LAM 030869



INDUSTRIAL HYGIENE SAMPLING FORM

ENTER THE SAMPLING FORM NO. FROM THE UPPER RIGHT
OTHER RELATED SAMPLING FORMS.

**RELATED SAMPLING
FORM NUMBERS** 

NUMBER OF
FILL IN IF MORE THAN ONE FORM IS REQUIRED TO DOCUMENT A SAMPLE
OR TO ESTABLISH ONE TIME WEIGHTED AVERAGE EXPOSURE.

PAGE _____ OF _____

LINE NO. 1

[illegible]

ABS-058495

LAM 030870

SAMPLED BY (LAST NAME & INITIALS) :

SAMPLING
FORM NO. 1

ACCOUNTING CODE

RAINIS DIELEL

4218194911

INL NO.
01893

☐ OK ☐ Other (Describe) →

DATE RECEIVED
504

ANALYST

DATE

LAM RECORD NO.

GROUP

BOX NO.
OR SAMPLE
LOCATION
EP

METHOD NUMBER AND OR DESCRIPTION

METHOD CODE

GRAV SIX

NUMBER OF
ANALYSES

1

REFERENCE

DATE REPORTED
(WEEK — DAY)

1

BENCH HOURS
(XXX.X)

1

ANALYTICAL RESULTS (CORRECTED FOR BLANK)

REPORT MAIN, BACKUP, TOTAL, BLANK

UNITS: ☐ PPMV ☐ mg/m³ ☐

EXPOSURE CALCULATION

TWA, PEAK

reported on Page 1 of 2

SUPERVISING CHEMIST

ND = NOT DETECTED
(REPORT LIMIT)

CALCULATED BY

[Signature]

ABS-058498

LAM 030873



INDUSTRIAL HYGIENE SAMPLING FORM

ENTER THE SAMPLING FORM NO. FROM THE UPPER RIGHT OTHER RELATED SAMPLING FORMS.		RELATED SAMPLING FORM NUMBERS		011041		PAGE 2 OF 2		NO.	
EMPLOYEE SAMPLED		EMPLOYEE'S COMPANY (e.g. SHELL CO. OR CONTRACTOR)		SHELL LOCATION (e.g. DEER PARK M.C.)		SAMPLING TYPE		DATE SAMPLED	
SOCIAL SECURITY NO.		SHELL LOCATION (e.g. DEER PARK M.C.)		SAMPLING TYPE		DATE SAMPLED		12-8-76	
EMPLOYEE NO.		AREA/UNIT (GIVE SPECIFIC NAME)		ANALYSIS REQUIRED/CONTAMINANTS		DATE SAMPLED		12-8-76	
JOB CLASSIFICATION		OPERATING CONDITIONS		POSSIBLE INTERFERENCE		DATE SAMPLED		12-8-76	
WIND		BAROMETER		TEMPERATURE		HUMIDITY		SPECIAL INSTRUCTIONS	
W 5 W 5 mph		30.0 in Hg		50 °F		—		—	
TIME		WORK TASKS		EQUIP.		TIME AT TASK		INSTRUMENT READING	
0900		Started Sampler		Positioned sampler on 35' high drum approximately 20 feet downwind of nearest blaster		26 min.		Sketch Area (and/or remarks)	
1000		Stopped Sampler						• blaster locations • Sampler location • silica sand blasting • Black n beauty blasting	
* CHECK IN THIS COL. FOR EACH TASK WHERE PROTECTIVE EQUIP. WAS WORN TYPE: GIVE EQUIPMENT USED (e.g. RESPIRATOR, GLOVES, ETC.) MANUFACTURER, MODEL NO. ETC.									
INSTRUMENT TYPE & MODEL NO.		SERIAL NO.		CALIBRATED BY		DATE		REFERENCE	
SAMPLING TIME		INITIALS		FINAL		NET		VOLUME PER COUNT	
SE		011041							
☐ CH ⁺ COAL TUBE ☐ FILTER (TOTAL) ☐ FILTER (RESPIRABLE) ☐ IMPINGER ☐ NET		☐ FILTER (TOTAL) ☐ FILTER (RESPIRABLE) ☐ IMPINGER ☐ NET		☐ FILTER (TOTAL) ☐ FILTER (RESPIRABLE) ☐ IMPINGER ☐ NET		☐ FILTER (TOTAL) ☐ FILTER (RESPIRABLE) ☐ IMPINGER ☐ NET		☐ FILTER (TOTAL) ☐ FILTER (RESPIRABLE) ☐ IMPINGER ☐ NET	
DEF. 1: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 2: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 3: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 4: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 5: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 6: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 7: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 8: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 9: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 10: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 11: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 12: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 13: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 14: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 15: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 16: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 17: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 18: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 19: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 20: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 21: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 22: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 23: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 24: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 25: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 26: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 27: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 28: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 29: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 30: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 31: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 32: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 33: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 34: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 35: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 36: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 37: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 38: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 39: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 40: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 41: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 42: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 43: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 44: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 45: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 46: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 47: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 48: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 49: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 50: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 51: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 52: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 53: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 54: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 55: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 56: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 57: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 58: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 59: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 60: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 61: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 62: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 63: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 64: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 65: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 66: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 67: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 68: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 69: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 70: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 71: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 72: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 73: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 74: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 75: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 76: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 77: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 78: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 79: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 80: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 81: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 82: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 83: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 84: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 85: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 86: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 87: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 88: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 89: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 90: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 91: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 92: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 93: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 94: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 95: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 96: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 97: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 98: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 99: (MFR./TYPE/LOT NO./COMPOSITION) DEF. 100: (MFR./TYPE/LOT NO./COMPOSITION)		MILLIPAC type AA 0.8µ		0700/500		1329-112-3		SAMPLED BY J.D. Ransdell	
RETURN RESULTS TO (ADDRESS)		PHONE		1329-112-3		PHONE		1329-112-3	

ABS-058499

LAM 030874

SAMPLING
FORM NO. 1

ACCOUNTING CODE

SAMPLED BY (LAST NAME & INITIALS)

RAINIS DIELER

41218119149111

IHL NO. 01890

☐ OK ☐ Other (Describe) →

DATE RECEIVED 5/04

BOX NO. OR SAMPLE LOCATION

ANALYZED BY DATE LAB RECORD NO.

METHOD NUMBER AND OR DESCRIPTION

REFERENCE

DATE REPORTED (WEEK 1, DAY)

BENCH HOURS (XXX.X)

ANALYTICAL RESULTS (CORRECTED FOR BLANK)

REPORT MAIN BACKUP TOTAL BLANK

UNITS: ☐ ppmv ☐ mg/m³ ☐

Results reported on page 1 of 2.

NO = PPMV DETECTED (REPORT 11 OF DETECTION)

SUPERVISING CHEMIST

EXPOSURE CALCULATION

TWA, PEAK

CALCULATED BY

Signature

ABS-058500

LAM 030875



INDUSTRIAL HYGIENE SAMPLING FORM

 ENTER THE SAMPLING FORM NO. FROM THE UPPER RIGHT
OTHER RELATED SAMPLING FORMS.

 SAMPLING FORM NO. **U11048**

 IF OF
FILL IN IF MORE THAN ONE FORM IS REQUIRED TO DOCUMENT A SAMPLE
OR TO ESTABLISH ONE TIME WEIGHTED AVERAGE EXPOSURE.

 RELATED SAMPLING
FORM NUMBERS

PAGE ____ OF ____

EMPLOYEE SAMPLED

EMPLOYEE'S COMPANY (e.g. SHELL CO. OR CONTRACTOR)

SOCIAL SECURITY NO.

SHELL LOCATION (e.g. DEER PARK M.C.)

EMPLOYEE NO.

AREA/UNIT (GIVE SPECIFIC NAME)

JOB CLASSIFICATION

OPERATING CONDITIONS

WIND

BAROMETER

TEMPERATURE

HUMIDITY

SPECIAL INSTRUCTIONS

SAMPLE TYPE

☐ PERSONAL
☐ AREA
☐ BLANK
☐ BULK
☒ SOURCE

ANALYSIS REQUIRED/CONTAMINANTS

 Total Weight plus titanium,
iron, aluminum, calcium,
magnesium
possible interferences

DATE SAMPLED

SHIFT

SAMPLE NO.

1111 01892

SAMPLED BY

 JO Randall 476-7501
 RETURN RESULTS TO (ADDRESS)

Sec 1329-112-1

ABS-058501

TIME	WORK TASKS	PROT. EQUIP.	TIME AT TASK	INSTRUM. T. READING	SKETCH AREA (AND/OR REMARKS)
					Shipped with Samples 1329-112-1, -2, -3, 8-4 1329-32-6, -7, and -8

* CHECK IN THIS COL. FOR EACH TASK WHERE PROTECTIVE EQUIP. WAS WORN
TYPE: GIVE EQUIPMENT USED (e.g. RESPIRATOR, GLOVES, ETC.) MANUFACTURER, MODEL NO. ETC. →

INSTRUMENT TYPE & MODEL NO. SERIAL NO. CALIBRATED BY DATE REFERENCE METHOD

FLOW RATE SAMPLING TIME COUNTER READING INITIAL: FINAL: NET: VOLUME PER COUNT SAMPLE VOLUME

SAMPLE COLLECTOR ☐ CHARCOAL TUBE ☒ FILTER (TOTAL) ☐ FILTER (RESPIRABLE) ☐ IMPINGER ☐ NET: **Willipore pc AA, 0.8µ**

25. (INTERTYPE NO. 2 COMPOSITION) PRINTER NUMBER IS USED GIVE COMPOSITION OF ABSORBING (e.g. 10cc OF 0.1 N NaOH)

LAM 030876

SAMPLED BY (LAST NAME & INITIALS)

SAMPLING
FORM NO.

ACCOUNTING CODE

HLA 01892

ABS-058502

CONDITION OF SAMPLE UPON RECEIPT

☒ OK ☐ Other (Describe) →

DATE RECEIVED 5/10/94

ANALYST

DATE

LAB RECORD NO.

ANALYST - A.M.

J.M. VAKRA

12/17/76

1327-112

METHOD NUMBER AND OR DESCRIPTION

SECTION 101 (AL)

1371-41

GROUP

EP

GRNU METHAN

REFERENCE

NUMBER OF ANALYSES

1 5

DATE REPORTED (WEEK - DAY)

5/15 2-5

BENCH HOURS (XXX.X)

1.5 1.5

ANALYTICAL RESULTS (CORRECTED FOR BLANK)

REPORT MAIN BACKUP TOTAL BLANK

UNITS: ☐ PPMV ☐ mg/m³

☒ mg

EXPOSURE CALCULATION

TWA, PEAK

GRNU = -0.031 mg relative to the blank = 0.031 mg

ALUMINUM mg mg/m³

ALICUM 0.005

IRON 0.050

MANGANESE 0.002

TITANIUM 0.001

SUPERVISING CHEMIST

J.A. BOURN

ND = NOT DETECTED

(REPORT UN F DETECTION)

CALCULATED BY

LAM 030877



INDUSTRIAL HYGIENE SAMPLING FORM

ENTER THE SAMPLING FORM NO. FROM THE UPPER RIGHT
OTHER RELATED SAMPLING FORMS.

**RELATED SAMPLING
FORM NUMBERS** 

FILL IN IF MORE THAN ONE FORM IS REQUIRED TO DOCUMENT A SAMPLE OR TO ESTABLISH ONE TIME WEIGHTED AVERAGE EXPOSURE.

PAGE _____ OF _____

EMPLOYEE SAMPLED	EMPLOYEE'S COMPANY (e.g. SHELL CO. OR CONTRACTOR)	SHELL LOCATION (e.g. DEER PARK M.C.)
SOCIAL SECURITY NO.		

ANALYSIS REQUIRED/CONTAMINANTS

SAMPLE TYPE ☐ PERSONAL ☐ AREA ☒ BLANK ☐ BULK ☐ SOURCE

DATE SAMPLED	12-8-78
SHIFT	

SAMPLE NO

HL 01895

1. NO.

ABS-058503

LAM 030878

[illegible]

SAMPLING
FORM NO. 1

ACCOUNTING CODE

ANALYST'S DELETED 4211948111

CONDITION OF SAMPLE UPON RECEIPT

☒ OK ☐ Other (Describe) →

11-01895

ABS-058504

DATE RECEIVED 5/10/4

BOX NO. OR SAMPLE LOCATION

ANALYZED BY

DATE

LAB RECORD NO.

GRAY-AFM

SIXR-TEM

1/6/77

1337-33

GROUP

EP

METHOD NUMBER AND OR DESCRIPTION

2+CM 105

METHOD CODE

GRAY SIXR

NUMBER OF ANALYSES

1

DATE REPORTED (WEEK - DAY)

1/4 9.5

BENCH HOURS (XXX.X)

0.5

ANALYTICAL RESULTS (CORRECTED FOR BLANK)

UNITS: ☐ PPMV ☒ mg/m³ ☐

EXPOSURE CALCULATION

TWA, PEAK

GRAY - no more compared to 16 in 16 days blank

MS SOL (NO) < 0.010 mg

SUPERVISING

ND = NO¹ DETECTED (REPORT LM)

CALCULATED BY

1/6/77

1/6/77

LAM 030879

HL 01889

LAM 030881

SAMPLED BY (LAST NAME & INITIALS)										ACCOUNTING CODE									
R. A. 1015 D. H. L. L.										421194911									
CONDITION OF SAMPLE UPON RECEIPT																			
☒ OK ☐ Other (Describe) →																			
ANALYST BY										DATE									
S. T. A. BAKER										12/12/86									
METHOD NUMBER AND OR DESCRIPTION										LAB RECORD NO									
SPECTROSCOPIC ANAL										1339-112									
REFERENCE										1371-41									
ANALYTICAL RESULTS (CORRECTED FOR BLANK)										UNITS: ☐ PPMV ☐ mg/m ³ ☒ mg									
REPORT MAIN, BACKUP, TOTAL, BLANK																			
GAS = 7.42 mg/m ³																			
ALUMINUM										mg									
0.10										mg/m ³									
0.65																			
CALCIUM										0.15									
0.98																			
IRON										0.20									
1.31																			
MAGNESIUM										0.025									
0.16																			
TITANIUM										0.030									
0.20																			
SUPERVISING CHEMIST										ND = NOT DETECTED									
M. L. L. L.										(REPORT LHM & DETECTION)									
EXPOSURE CALCULATION										TWA, PEAK									
CALCULATED BY										DATE RECEIVED									
										5-15									
										WEEK									
										DAY									
										1-5									
										1-5									



INDUSTRIAL HYGIENE SAMPLING FORM

 ENTER THE SAMPLING FORM NO. FROM THE UPPER RIGHT
OTHER RELATED SAMPLING FORMS.

 4th OF _____
 IF IN MORE THAN ONE FORM IS REQUIRED TO DOCUMENT A SAMPLE
 OR TO ESTABLISH ONE TIME WEIGHTED AVERAGE EXPOSURE.

NO. _____

 RELATED SAMPLING
FORM NUMBERS

PAGE _____ OF _____

 EMPLOYEE SAMPLED
 SOCIAL SECURITY NO. _____
 EMPLOYEE NO. _____
 JOB CLASSIFICATION _____

EMPLOYEE'S COMPANY (e.g. SHELL CO. OR CONTRACTOR)

SHELL LOCATION (e.g. DEER PARK M.C.)

AREA/UNIT (GIVE SPECIFIC NAME)

OPERATING CONDITIONS

BAROMETER

TEMPERATURE

HUMIDITY

WIND

TIME

WORK TASKS

EQUIP.

TIME AT TASK

INSTRUMENT READING

SKETCH AREA (AND/OR REMARKS)

DATE

TIME

INSTRUMENT READING

SKETCH AREA (AND/OR REMARKS)

DATE

TIME

INSTRUMENT READING

SKETCH AREA (AND/OR REMARKS)

DATE

TIME

INSTRUMENT READING

SKETCH AREA (AND/OR REMARKS)

DATE

TIME

INSTRUMENT READING

SKETCH AREA (AND/OR REMARKS)

DATE

TIME

ABS-058507

LAM 030882

EMPLOYEE SAMPLED		EMPLOYEE'S COMPANY (e.g. SHELL CO. OR CONTRACTOR)		SAMPLING FORM NO. 011039		DATE 11-24-76		PHONE 476-7501	
SOCIAL SECURITY NO.		SHELL LOCATION (e.g. DEER PARK M.C.)		ANALYSIS REQUIRED/CONTAMINANTS		DATE SAMPLED		SAMPLING NO.	
EMPLOYEE NO.		Deer Park		Total weight plus Titanium, Iron, Aluminum, calcium, Magnesium		11-24-76		0700/1500	
JOB CLASSIFICATION		Chemical - Sandblast Yard		POSSIBLE INTERFERENCE		SAMPLER BY		JDRansdell	
BAROMETER		55-60°F		SPECIAL INSTRUCTIONS		RETURN RESULTS TO (ADDRESS)		JDRansdell	
TEMPERATURE		30.0 in Hg.		Phosphorus & silica sand		Deer Park Chemical		MOA - 101	
HUMIDITY		—		Sketch area		1329-112-1		Sketch	
WIND		E. 5-10 mph		Time at task		1329-112-1		Sample collected simultaneously with adjacent to 1329-112-1	
TIME		0925		Instrument reading		11-24-76		1000 ml	
WORK TASKS		Started Sampler		Sketch area (and/or remarks)		11-24-76		142 liters	
EQUIP.		Placed on 55-gallon drums downwind of sand blasting		Date		11-24-76		1000 ml	
TIME AT TASK		Blasting Time		Time		11-24-76		1000 ml	
INSTRUMENT READING		044		Sketch area (and/or remarks)		11-24-76		1000 ml	
SKETCH AREA (AND/OR REMARKS)		Stopped Sampler		Date		11-24-76		1000 ml	
DATE		11-24-76		Time		11-24-76		1000 ml	
TIME		11-24-76		Instrument reading		11-24-76		1000 ml	
INSTRUMENT READING		11-24-76		Sketch area (and/or remarks)		11-24-76		1000 ml	
SKETCH AREA (AND/OR REMARKS)		11-24-76		Date		11-24-76		1000 ml	
DATE		11-24-76		Time		11-24-76		1000 ml	
TIME		11-24-76		Instrument reading		11-24-76		1000 ml	
INSTRUMENT READING		11-24-76		Sketch area (and/or remarks)		11-24-76		1000 ml	
SKETCH AREA (AND/OR REMARKS)		11-24-76		Date		11-24-76		1000 ml	
DATE		11-24-76		Time		11-24-76		1000 ml	
TIME		11-24-76		Instrument reading		11-24-76		1000 ml	
INSTRUMENT READING		11-24-76		Sketch area (and/or remarks)		11-24-76		1000 ml	
SKETCH AREA (AND/OR REMARKS)		11-24-76		Date		11-24-76		1000 ml	
DATE		11-24-76		Time		11-24-76		1000 ml	
TIME		11-24-76		Instrument reading		11-24-76		1000 ml	
INSTRUMENT READING		11-24-76		Sketch area (and/or remarks)		11-24-76		1000 ml	
SKETCH AREA (AND/OR REMARKS)		11-24-76		Date		11-24-76		1000 ml	
DATE		11-24-76		Time		11-24-76		1000 ml	
TIME		11-24-76		Instrument reading		11-24-76		1000 ml	
INSTRUMENT READING		11-24-76		Sketch area (and/or remarks)		11-24-76		1000 ml	
SKETCH AREA (AND/OR REMARKS)		11-24-76		Date		11-24-76		1000 ml	
DATE		11-24-76		Time		11-24-76		1000 ml	
TIME		11-24-76		Instrument reading		11-24-76		1000 ml	
INSTRUMENT READING		11-24-76		Sketch area (and/or remarks)		11-24-76		1000 ml	
SKETCH AREA (AND/OR REMARKS)		11-24-76		Date		11-24-76		1000 ml	
DATE		11-24-76		Time		11-24-76		1000 ml	
TIME		11-24-76		Instrument reading		11-24-76		1000 ml	
INSTRUMENT READING		11-24-76		Sketch area (and/or remarks)		11-24-76		1000 ml	
SKETCH AREA (AND/OR REMARKS)		11-24-76		Date		11-24-76		1000 ml	
DATE		11-24-76		Time		11-24-76		1000 ml	
TIME		11-24-76		Instrument reading		11-24-76		1000 ml	
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SKETCH AREA (AND/OR REMARKS)		11-24-76		Date		11-24-76		1000 ml	

SAMPLING
FORM NO. 1

SAMPLED BY (LAST NAME & INITIALS)

ACCOUNTING CODE

HL 01889

CONDITION OF SAMPLE UPON RECEIPT

☒ OK ☐ Other (Describe) →

DATE RECEIVED 5/10/91

BOX NO. OR SAMPLE LOCATION

ANALYZED BY DATE LAB RECORD NO.

SAVING - A. BAKER 12/15/76 13376 112

METHOD NUMBER AND OR DESCRIPTION SPECTROSCOPIC

REFERENCE

GROUP EP
METHOD CODE GRAV METAA
NUMBER OF ANALYSES 5
DATE REPORTED (WEEK - DAY) 5/15/91 25
BENCH HOURS (XXX.X) 0.57 45

ANALYTICAL RESULTS (CORRECTED FOR BLANK)
REPORT MAIN, BACKUP, TOTAL, BLANK

EXPOSURE CALCULATION
TWA, PEAK

UNITS: ☐ PPMV ☐ mg/m ³ ☒ mg	DATE	mg/m ³	mg
CYAN 1.00 mg/m ³			
ALUMINUM	0.025	0.18	
CALCIUM	0.020	0.14	
IRON	0.050	0.35	
MANGANESE	0.005	0.04	
TITANIUM	0.005	0.04	
SUPERVISING CHEMIST			
ND = NONE DETECTED (REPORT IT IF DETECTION)			
CALCULATED BY			

ABS-058508

LAM 030883



INDUSTRIAL HYGIENE SAMPLING FORM

 ENTER THE SAMPLING FORM NO. FROM THE UPPER RIGHT
OTHER RELATED SAMPLING FORMS.

 SET OF
FILM IF MORE THAN ONE FORM IS REQUIRED TO DOCUMENT A SAMPLE
OR TO ESTABLISH ONE TIME WEIGHTED AVERAGE EXPOSURE.

NO.

 RELATED SAMPLING
FORM NUMBERS

011045

PAGE 1 OF 2

 SAMPLING
FORM NO. 011041

EMPLOYEE SAMPLED		EMPLOYEE'S COMPANY (e.g. SHELL CO. OR CONTRACTOR)		SAMPLE TYPE ☒ PERSONAL ☐ AREA ☐ BLANK ☐ BULK ☐ SOURCE		DATE SAMPLED 11-24-76		PHONE 01890	
SOCIAL SECURITY NO.		SHELL LOCATION (e.g. DEER PARK M.C.)		ANALYSIS REQUIRED/CONTAMINANTS Total Weight plus Titanium, iron, aluminum, calcium, magnesium		SHIFT 1329-112-3		SAMPLE NO.	
EMPLOYEE NO.		DEER PARK		AREA/UNIT (GIVE SPECIFIC NAME)		SAMPLER BY JP Randall		PHONE 476-7501	
JOB CLASSIFICATION		Chemical - Sandblast Yard		OPERATING CONDITIONS		RETURN RESULTS TO (ADDRESS)		SEC 1329-112-1	
WIND E, S-10 mph	BAROMETER 30.0 in Hg	TEMPERATURE 60°-70°F	HUMIDITY —	SPECIAL INSTRUCTIONS					
TIME	WORK TASKS	PROT. EQUIP.	TIME AT TASK	INSTRUMENT READING	SKETCH AREA (AND/OR REMARKS)				
1100	Started Sampler								
	Approximately 30 feet downwind of nearest sandblaster; sampler positioned on 55 gal. drum								
1130	Stopped Sampler								
	12-8-76								
0900	Started Sampler								
	See sampling form 011045								
1000	Stopped Sampler								

* CHECK IN THIS COL. FOR EACH TASK WHERE PROTECTIVE EQUIP. WAS WORN
TYPE: GIVE EQUIPMENT USED (e.g. RESPIRATOR, GLOVES, ETC.) MANUFACTURER, MODEL NO. ETC.

INSTRUMENT TYPE & MODEL NO. SERIAL NO. CALIBRATED BY DATE

TYPE: GIVE EQUIPMENT USED (e.g. RESPIRATOR, GLOVES, ETC.) MANUFACTURER, MODEL NO. ETC.

FLOW RATE: 1.7 lpm 90 min. INITIAL: 719 COUNTER READING: 50 Randall DATE: 11-24-76

SAMPLE COLLECTOR: ☐ CHARCOAL TUBE ☒ FILTER (TOTAL) ☐ FILTER (RESPIRABLE) ☐ IMPINGER ☐ NET: 12-8-76

REFERENCE: 1000 ml burette METHOD: 153 liters

DEER PARK M.C. 11-24-76 12-8-76

JP Randall 476-7501

SEC 1329-112-1

ABS-058509

LAM 030884

SAMPLED BY (LAST NAME & INITIALS) RAMSDELL ACCOUNTING CODE 112 8119149 111

SAMPLING FORM NO. 112

IHL 01890

CONDITION OF SAMPLE UPON RECEIPT
☒ OK ☐ Other (Describe) →

DATE RECEIVED 5/10 WEEK 4 DAY 4

ANALYZED BY J.A. BARKER DATE 12/17/76 LAB RECORD NO. 1325-112

BOX NO. OR SAMPLE LOCATION EP

METHOD NUMBER AND OR DESCRIPTION SPECIMEN CHEMICAL

GROUP EP
 METHOD CODE GRAV
 NUMBER OF ANALYSES 1
 DATE REPORTED (WEEK - DAY) 5/15/76
 BENCH HOURS (XXXX.X) 0.50

ANALYTICAL RESULTS (CORRECTED FOR BLANK)
 REPORT MAIN BACKUP TOTAL BLANK UNITS: ☐ PPMV ☐ mg/m³ ☒ mg

EXPOSURE CALCULATION
 TWA PEAK

CONCENTRATION	0.1355 mg/m ³	mg	0.10	mg/m ³	0.65		
ALUMINUM			0.15		0.98		
CALCIUM			0.20		1.31		
IRON			0.030		0.20		
MAGNESIUM			0.010		0.07		
TITANIUM							
SUPERVISING CHEMIST	ND = NONE DETECTED (REPORT L OF DETECTION)						
ANALYST	CALCULATED BY						

SAMPLED BY (LAST NAME & INITIALS)

SAMPLING FORM NO.

ACCOUNTING CODE

R. ALANUS D. ELLIOTT 41281949111

11L-01893

OK ☐ Other (Describe) →

DATE RECEIVED 5/6/77 WEEK DAY

BOX NO. OR SAMPLE LOCATION

ANALYST BY

GRAY - RHEM SIXX-TEEN

DATE 11/14/77

LAB RECEIVED 12/29/77

GROUP EP

METHOD NUMBER AND OR DESCRIPTION

METHOD CODE GRAY SIXX

REFERENCE

NUMBER OF ANALYSES 1

DATE REPORTED (WEEK - DAY) 11/14 2-3

BENCH HOURS (XXX.X) 0.58

ANALYTICAL RESULTS (CORRECTED FOR BLANK)

UNITS: ☐ PPMV ☒ mg/m³ ☐

EXPOSURE CALCULATION

GRAY = 1.29 mg/m³

MS 2.02/m³ = 0.24

SUPERVISING CHEMIST

Handwritten signature

ND = NOT DETECTED (REPORT L.M. DETECTION)

CALCULATED BY

ABS-058512

LAM 030887



WYSEMAN, RYAN, JR. 1971

SKETCH AREA: SHOW TEST LOCATIONS, PERSONNEL, SOURCES, WIND DIRECTIONS VENTILATION, NORTH DIRECTION.



SKETCH AREA: SHOW TEST LOCATIONS,
PERSONNEL, SOURCES, WIND DIRECTIONS
VENTILATION, NORTH DIRECTION.

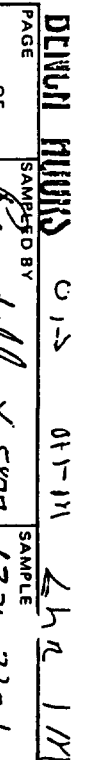
LAB ANALYSIS		DATE	BY
ITD - 1001 mg/100g		3/11/76	ARMM
REMARKS:			
FREE LILKIN < 0.005 mg / Sample 185 03/576 VOL RECAP 1359 P 119			

LAM 030888

Document Number

ABS 58514

**is missing from the
Repository of Asbestos
Documents held at Shell Oil
Company in Houston, Texas.**



ABS-058516

LAM 030891

EMPLOYEE (NAME & NO.)	PLANT/FACILITY	ACCOUNT NO.	DATE
—	DEWA-RECY - Badalestyaad	132421	1-21-76
JOB CLASSIFICATION	CONTAMINANT	TYPE SAMPLE	
—	Free silica Sand	☐ PERSONAL ☒ AREA ☐ SOURCE	

[illegible]

SKETCH AREA: SHOW TEST LOCATIONS,
PERSONNEL, SOURCES, WIND DIRECTIONS
VENTILATION, NORTH DIRECTION.

INSTRUMENT TYPE & NO.			FLOW RATE	VOLUME SAMPLED
INST Model G	S/N C-05-0538		1.8 lpm	220 liters
CALIBRATED BY	DATE	METER READING	DETECTOR TUBE READING	
Kaundell	1-31-76	INITIAL: —	FINAL: —	
REMARKS:				
Sampled during a period of no blasting.				
the				
North door of warehouse was closed, south				
door was opened				

LAB ANALYSIS		DATE	BY
TD	0.00 mg/m ³	3/11/72	AD MILL
REMARKS:			
FREE SILICA < 0.02 mg/m ³			
031576 VARNELR1359 0.119			