URS

485994

September 22, 2000

US EPA Region VIII
Attn. Mr. Paul Peronard, 8EPR-EP
On-Scene Coordinator
999 18th Street, Suite 500
Denver, CO. 80202-2466

501 Mineral Avenue
Libby, MT 59923

RE: US EPA Region VIII Unilateral Administrative Order (UAO) No. CERCLA-8-2000-10, Libby, Mt. Export Plant Weekly Report for September 08-21, 2000.

Dear Mr. Peronard:

Per the above referenced Unilateral Administrative Order, please find attached a weekly report describing the activities that occurred during the two-week period of September 08-21, 2000, at the Libby, Mt. Export Plant. The submittal of the weekly report for September 08-14, 2000 was delayed due to other scheduling activities being a higher priority, per your approval on September 15, 2000.

Please call if you have any questions concerning this submittal.

Sincerely,

Mr. Jim Stout
Site Project Manager

Attachment

cc:	John Constan	Montana DEQ
	Ken Lund	Holme, Roberts & Owen
	Bob Mariam	W.R. Grace
	David Cleary	W.R. Grace
	Karen Brown	W.R. Grace
	Matthew Cohn	US EPA
	Ray Lidstrom	URS

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Project No. 805169
File Code No. 6.2.b.1.8
Doc No. pg 1 of 5

URS Corporation
707 17th Street, Suite 3400
Denver, CO 80202
Tel: 303.292.0800
Fax: 303.292.5860

September 22, 2000

US EPA Region VIII
Attn. Mr. Paul Peronard, 8EPR-EP
On-Scene Coordinator
999 18th Street, Suite 500
Denver, CO. 80202-2466

501 Mineral Avenue
Libby, MT 59923

Dear Mr. Peronard:

Progress Report for the Two-Week Period of September 08 – September 21, 2000

The Weekly Progress Report for the week of September 01 - 07, 2000 was submitted to the EPA and State on September 08, 2000. On September 15, 2000, Paul Peronard agreed that it was not necessary to submit a weekly progress report on September 15, 2000.

At Millwork West

- Millwork West continued planing lumber through September 21, 2000.
- EPA obtained a high TEM result in Millwork West's retail office on September 9, 2000.
- The retail office was HEPA vacuumed and wet wiped on September 11, 2000, per EPA request.
- The retail office was re-cleaned including the heater and air-conditioner on September 12, 2000, per EPA request.
- The EPA collected final clearance air samples at the retail office on September 12, 2000, with results passing.
- A task list for the Millwork West move to new buildings was developed and submitted to EPA.
- Miscellaneous office furniture and displays were cleaned and moved back to the retail office on September 14, 2000.
- Cleaning activities were initiated at the Small Shed on September 15, 2000.
- Cleaning activities were completed and clearance samples were taken at the Small Shed on September 18, 2000, with passing results.
- A layer of poly was installed outside the Small Shed entrance so there will be no recontamination of the building, from outside soil.
- Millwork West identified items in the warehouse for disposal at the mine.
- Cleaning of the warehouse was initiated. Some materials have been cleaned and moved into the small shed.

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At Millwork West Temporary Relocation Site

- The first piece of siding was installed on the large pole building September 8, 2000.
- The corner posts for the small building were set on September 12, 2000 and the walls were near completion on September 21, 2000.
- An engineer was hired to design interior shelving at new pole buildings.
- Utility locates were called for the new sign and the new fire hydrants.
- The fences at the front of the property were removed. The bushes at the front of the property were removed and the new Millwork West sign was installed.
- The temporary fencing for the new pole buildings was delivered to the site on September 15, 2000.
- A contractor started installation of the two fire hydrants on September 20, 2000.
- Construction of the interior shelving at new pole buildings was started on September 21, 2000.
- Citizens' Communication began installation of new phone service at new location on September 21, 2000.

At Mine Disposal Site

- Full level C PPE is now required at the mine site per Paul Peronard.
- URS, EPA and State of Montana excavated first test pit at Glory Hole on September 14, 2000 and a second test pit on September 15, 2000.
- The drilling of monitoring well MW-1 at the glory hole began on September 21, 2000.

Problems and Issues

- Approved copies of Addendum No. 4, Addendum No. 5 and Addendum No.6 were received.
- Perimeter air sampling is now being required by the EPA when work is being conducted, at the seven previously designated locations at the Export Plant. These samples are being collected in areas where the public has complete access.
- Mel Burnett (Millwork West) continues to use the rooftops and spacer blocks previously purchased by W.R. Grace. This material is considered contaminated.
- All visitors, workers, and contractors conducting activities within the mine site must adhere to level C PPE restrictions per EPA request on August 24, 2000.

Analytical Data Received

- EPA conducted aggressive clearance air testing at the Small Shed.

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- EPA's analytical results of the Small Shed clearance air samples indicated that all clearance criteria had been met.
- URS submitted for TEM analysis the highest counts from each of six days during August 2000 at the Export Plant (results attached).

Material Movement and Disposal

- Eight truckloads of debris created from encapsulation and decon dismantling activities at the Export Plant were taken to the mine disposal area.

Health and Safety

- All visitors, workers, and contractors conducting activities within the mine site must adhere to level C PPE restrictions.
- No incidents or accidents.

Anticipated Developments Next Week

- The Millwork West planer run will continue.
- The cleaning of material from the warehouse and its relocation to the Small Shed will continue, as well as the removal of materials for disposal at the mine.
- Construction of both the large and small pole buildings will continue.
- B&B Drilling will flush-mount the two monitoring wells at the pole building location.
- Final grading and installation of temporary fencing at the new building location with be initiated.
- Citizen's Communication will install phone service at new location.
- A contractor will complete installation of two fire hydrants at new pole building location.
- A contractor will complete the construction of interior shelving and supports for stand-up lumber in the large pole building.
- A contractor will complete the installation of new monitoring wells around the glory hole at the mine.

Planned Resolutions or Anticipated Problems

- A signed copy of Addendum No. 2, updating the implementation schedule for the temporary relocation of Millwork West's business, has not been received.
- Issues concerning use of rooftops and spacer blocks by Millwork West.

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Schedule

- Both pole structures at the Millwork West temporary relocation site will be completed by October 1, 2000.
- The final movement of the Millwork West retail business will be completed by October 1, 2000.

Respectfully,

Jim Stout
Project Coordinator
Libby Asbestos Site

Attachments (1)

URS Corporation
707 17th Street, Suite 3400
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Tel: 303.292.0800
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Project No. 80 5169
File Code No. 6.2.b.1.8
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RELINQUISHED BY:	RECEIVED BY:
SIGNATURE:_____	SIGNATURE:_____
PRINT NAME:_____	PRINT NAME:_____
DATE/TIME:_____	DATE/TIME:_____

Test Report

Total Asbestos Structure Concentration
ISO 10312 Analysis
Project LAH004417-5

RJ Lee Group Sample Number	Client Sample Number		Filter Area (sq mm)	Volume ‡ (Liters)	Area Analyzed (sq mm)	Structures Chr	Structures Amp	Analytical Sensitivity † (S/sq. mm)	Analytical Sensitivity † (S/cc)	Concentration (S/sq. mm)	Concentration (S/cc)	Analysis Date
0113690HT	A04-22	Aug 22	385	4907.70	0.0881	0	0	11.4	0.0009	<11.4*	<0.0009*	9/12/0
0113691HT	A03-23	Aug 23	385	4995.60	0.0881	0	0	11.4	0.0009	<11.4*	<0.0009*	9/12/0
0113692HT	A10-24	Aug 24	385	927.20	0.0881	0	0	11.4	0.0047	<11.4*	<0.0047*	9/12/0
0113693HT	A04-25	Aug 25	385	3354.38	0.0881	0	0	11.4	0.0013	<11.4*	<0.0013*	9/12/0
0113694HT	PM08-28	Aug 28	385	3135.02	0.0881	0	0	11.4	0.0014	<11.4*	<0.0014*	9/14/0
0113695HT	PM07-29	Aug 29	385	2579.82	0.0881	0	0	11.4	0.0017	<11.4*	<0.0017*	9/13/0

Worksheet counts from Export Plant
perimeter samples for each of these days

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Project No.
File Code No.
Doc No.

‡ Volumes provided by URS Corporation for Project Libby, MT were used to calculate analytical results and sensitivities.
† Analytical sensitivity is the calculated concentration based on one structure in the area analyzed.
Chr Chrysotile, Amp - Amphibole
Samples received on: Monday, September 11, 2000
* Results Less Than Analytical Sensitivity.

Authorized Signature
Kimberly A. Allison, Manager-TEM Analysis
Date Date Monday, September 18, 2000

RJ Lee Group, Inc.
Headquarters
350 Hochberg Road
Monroeville, PA 15146
Phone (724) 325-1776
Fax (724) 733-1799

KOCH ENVIRONMENTAL HEALTH, INC.
AIR CONTAMINANT SAMPLING FORM

DATE:	CLIENT:	PROJECT CONTACT:	PROJECT LOCATION:	SAMPLING REP:
7/12/00	AC & S PROJECT #: 01001-043	Chuck Shaw	W.R. Grace Vermiculite Plant WORK AREA: Libby, MT	Patrick McGurren ANALYSIS BY: Patrick McGurren

SAMPLE TYPE:	PUMP CALIBRATION:	FILTER TYPE:	TEM FILTER:	FILTER FCA:	MICROSCOPE FIELD AREA:
Asbestos ☑ (NIOSH 7400) Lead ☐ (NIOSH 7082) Other ☐ _____ Method: _____	Rotameter ☐ ID _____ Other: DC-Lite Dry Cal DC-L 739	___ 0.8 um 25 mm MCE ___ charcoal tubes ___ Silica Gel ___ Other .45 TEM	✓ MCE <0.45um 25mm ___ PC <0.45um 37mm Mfr. _____ Lot No. 13337	✓ 385 mm² ___ mm² ___ NA	✓ 0.00785 mm² ___ mm² ___ NA

SAMPLE NUMBER/ PUMP NUMBER	SAMPLE TYPE	SAMPLE DESCRIPTION, LOCATION	ACTIVITY	TIME (24 HOUR CLOCK) Start	Stop	Total	FLOW RATE (L/MIN) Start	Stop	Avg.	AIR VOLUME (L)	DETECT. LIMIT OR LOQ	FIBERS/ PER FIELD	CONCENTRATION ✓ F/cc ___ other ___ ppm ___ mg/M³
B01	Field Blank	—	—	—	—	—	—	—	—	—	—	0/100	Field Blank
B02	Field Blank	—	—	—	—	—	—	—	—	—	—	0/100	Field Blank
P10	P	Inside Millwork West office - worn by - Guillermo Martinez	office cleaning	1437	1643	126	2.08	2.05	2.07	260.82	0.010	12.0/100	0.023
P11	P	Inside Millwork West office - worn by - Margarito Rivera	office cleaning	1439	1645	126	1.95 ~~1.95~~	1.94	1.95	245.70	0.011	13.0/100	0.026
Blind Recount													

Key:

Sample Type: P = Personal; Ex = Excursion; IWA = Inside Work Area; OWA = Outside Work Area; BAK = Background; A = Ambient Air; HEX = HEPA Exhaust; CL = Clearance Sample

Activity: PREP = Work Area Preparation; REM - Removal; GB - Glovebag; FC - Final Cleaning; BO = Bagout; TD = Tear Down; PP - Paint Prep

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Doc No. _____

KEH\FORMS\AIRFRM97

KOCH ENVIRONMENTAL HEALTH, INC.
7342 South Moore Court
Littleton, CO 80127
Phone: (303) 932-8484 FAX: (303) 932-8585

CONTRACTOR PERSONNEL AIR SAMPLING SUMMARY

Client: AC & S **Project:** 01001-013	**Project Contact:** Chuck Shaw	**Location:** WR Grace Vermiculite Plant Libby, MT	**KEH Rep:** Patrick McGurren **Analysis By:** Patrick McGurren

Date: 9/12/00	**Calibration:** ___ Rotameter ___ ID ✓ Other Dx-Lite Dry Cal ID	**Microscope Field Area:** ✓ 0.00785 sq mm ___ other ___ sq mm	**PCM Filter:** ✓ 0.8 um25mm Mft. ___ ___ 0.8 um37mm Lot# ___	**Other Media:** ___ Type Mft. ___ ___ Type Mft. ___

Name: Guillermo Martinez **SSN:** 622-09-2411	**Name:** Margarito Rivera **SSN:** 438-20-3756	**Name:** — **SSN:**	**Name:** — **SSN:**

TOTAL				TOTAL				TOTAL				TOTAL			
Sample #	Minutes	Volume	F/cc	Sample #	Minutes	Volume	F/cc	Sample #	Minutes	Volume	F/cc	Sample #	Minutes	Volume	F/cc
P10	126	260.82	0.023	P11	126	245.70	0.026								

TWA: 0.006 f/cc TWA: 0.007 f/cc TWA: — TWA: —

Comments: 2.898/480 Comments: 3.276/480 Comments:

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Doc No.

KOCH ENVIRONMENTAL HEALTH, INC.
ASBESTOS FIBER COUNT WORKSHEET

DATE: 9/12/00

KEH PROJECT #: 01001-043

MICROSCOPE ID #: 1

KEH REP: Patrick McGurren

ANALYST: Patrick McGurren

SAMPLE #	FIBER COUNT	F/N	F/N -B/NB / 100	FIBERS/MM²	SAMPLE VOL. (L)	LOQ (fibers/cc)	FIBERS/CC	COMMENTS
Field Blank B01	Ø	Ø/100	—	—	—	—	—	Field Blank
Field Blank B02	Ø	Ø/100	—	—	—	—	—	Field Blank
P10	12.0	12.0/100	12.0/100/.00785	15.29	260.82	0.010	0.023	—
P11	13.0	13.0/100	13.0/100/.00785	16.56	245.70	0.011	0.026	—
Blind Recount								

SAMPLING INFORMATION:

Effective Collection Area of Filter:
✓ 385 mm², 25 mm filter
855 mm², 37 mm filter

Microscope Field Area:
✓ 0.00785 mm²
other (list)

NIOSH 7400 Method A Rules ✓
Other Method

ANALYTICAL INFORMATION:

MICROSCOPE ADJUSTMENTS: ✓ phase test ✓ micrometer ✓ adjust field iris ✓ adjust phase rings ✓ focus on samples

ANALYST INFORMATION:

DATE: 9/13/00

ANALYST: Patrick McGurren

SIGNATURE: [signature]

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Project No. 805169
File Code No. 4.5.b.2.57
Doc No.

KEH97/FORMS/FIBERFRM

KOCH ENVIRONMENTAL HEALTH, INC.
AIR CONTAMINANT SAMPLING FORM

DATE:	CLIENT:	PROJECT CONTACT:	PROJECT LOCATION:	SAMPLING REP:
9/12/00	URS Radian PROJECT #: 21001-001	Tim Gish	WR Grace Vermiculite Plant WORK AREA: Libby, MT	Patrick McGovern ANALYSIS BY: Patrick McGovern

SAMPLE TYPE:	PUMP CALIBRATION:	FILTER TYPE:	TEM FILTER:	FILTER FCA:	MICROSCOPE FIELD AREA:
Asbestos ☒ (NIOSH 7400) Lead ☐ (NIOSH 7082) Other ☐ _____ Method: _____	Rotameter ☐ ID _____ Other: DC-Lite Dry Cal DC-L 739	___ 0.8 um 25 mm MCE ___ charcoal tubes ___ Silica Gel ___ Other -45 TEM	✓ MCE <0.45um 25mm ___ PC <0.45um 37mm Mfr. _____ Lot No. 1337	✓ 385 mm² _____ mm² ___ NA	✓ 0.00785 mm² _____ mm² ___ NA

SAMPLE NUMBER/ PUMP NUMBER	SAMPLE TYPE	SAMPLE DESCRIPTION, LOCATION	ACTIVITY	TIME (24 HOUR CLOCK) Start	Stop	Total	FLOW RATE (L/MIN) Start	Stop	Avg.	AIR VOLUME (L)	DETECT. LIMIT OR LOQ	FIBERS/ PER FIELD	CONCENTRATION ✓ F/cc ___ other ___ ppm ___ mg/M³
B01	Field Blank	—	—	—	—	—	—	—	—	—	—	0/100	FIELD BLANK
B02	Field Blank	—	—	—	—	—	—	—	—	—	—	0/100	FIELD BLANK
A03		Location #1 - North of Pole barn - on perimeter	-	0801	1635	514	5.18	5.60	5.39	2770.46	0.001	2.5/100	< LOQ
A04		west of Planer bldg - About 20 ft. east of location #3	—	0813	1638	505	5.64	6.36	6.00	3030.00	0.001	10.0/100	0.002
A05		south of Pole barn - against building	—	0820	1647	507	5.27	5.66	5.47	2773.29	0.001	~~4.0~~ 3.0/100	LOQ
A06		inside Millwork West office	—	0825	1350	325	3.40	3.48	3.44	1118.00	0.002	14.0/100	0.006
* A07	OWA	Millwork west office North	office cleaning	1416	1704	168	7.02	7.14	7.08	1189.44	0.002	3.0/100	< LOQ
* A08	↓	Millwork West office East	office cleaning	1419	1706	167	6.65	6.90	6.78	1132.26	0.002	3.5/100	LOQ
* A09	↓	Millwork west office south	office cleaning	1422	1708	1666	8.24	8.46	8.35	1386.10	0.002	4.0/100	< LOQ
—	—	—	—	—	—	—	—	—	—	—	—	—	—
Blind Recount	—	—	—	—	—	—	—	—	—	—	—	—	—

* Mel unplugged our pumps right at the end of testing, so we plugged it back in & took our final calibrations.

Key:

Sample Type: P = Personal; Ex = Excursion; IWA = Inside Work Area; OWA = Outside Work Area; BAK = Background; A = Ambient Air; HEX = HEPA Exhaust; CL = Clearance Sample

Activity: PREP = Work Area Preparation; REM - Removal; GB - Glovebag; FC - Final Cleaning; BO = Bagout; TD = Tear Down; PP - Paint Prep

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Doc No. _____

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KOCH ENVIRONMENTAL HEALTH, INC.
ASBESTOS FIBER COUNT WORKSHEET

DATE: 9/12/00

KEH PROJECT #: 21001-001

MICROSCOPE ID #: 1

KEH REP: Patrick McGurren

ANALYST: Patrick McGurren

SAMPLE #	FIBER COUNT	F/N	F/N -B/NB / 100	FIBERS/MM²	SAMPLE VOL. (L)	LOQ (fibers/cc)	FIBERS/CC	COMMENTS
Field Blank B01	0	0/100	—	—	—	—	—	Field Blank
Field Blank B02	0	0/100	—	—	—	—	—	Field Blank
A03	2.5	2.5/100	2.5/100/.00785	3.18	2770.46	0.001	< LOQ	—
A04	10.0	10.0/100	10.0/100/.00785	12.74	3030.00	0.001	0.002	—
A05	3.0	3.0/100	3.0/100/.00785	3.82	2773.29	0.001	LOQ	—
A06	14.0	14.0/100	14.0/100/.00785	17.83	1118.00	0.002	0.006	—
A07	3.0	3.0/100	3.0/100/.00785	3.82	1189.44	0.002	< LOQ	—
A08	3.5	3.5/100	3.5/100/.00785	4.46	1132.26	0.002	LOQ	—
A09	4.0	4.0/100	4.0/100/.00785	5.10	1386.10	0.002	< LOQ	—
—	—	—	—	—	—	—	—	—
Blind Recount	—	—	—	—	—	—	—	—

SAMPLING INFORMATION:

Effective Collection Area of Filter:
✓ 385 mm², 25 mm filter
855 mm², 37 mm filter

Microscope Field Area:
✓ 0.00785 mm²
other (list)

NIOSH 7400 Method A Rules ✓
Other Method

ANALYTICAL INFORMATION:

MICROSCOPE ADJUSTMENTS: ✓ phase test ✓ micrometer ✓ adjust field iris ✓ adjust phase rings ✓ focus on samples

ANALYST INFORMATION:

DATE: 9/13/00

ANALYST: Patrick McGurren

SIGNATURE: [signature]

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Project No. 805169
File Code No. 4.5.b.4.56
Doc No.

KEH97/FORMS/FIBERFRM

KOCH ENVIRONMENTAL HEALTH, INC.
AIR CONTAMINANT SAMPLING FORM

DATE:	CLIENT:	PROJECT CONTACT:	PROJECT LOCATION:	SAMPLING REP:
9/13/00	URS Radian PROJECT #: 21001-001	Tim Gish	WR Grace Vermiculite Plant WORK AREA: Libby, MT	Patrick McGuire ANALYSIS BY: Patrick McGuire

SAMPLE TYPE:	PUMP CALIBRATION:	FILTER TYPE:	TEM FILTER:	FILTER FCA:	MICROSCOPE FIELD AREA:
Asbestos ☑ (NIOSH 7400) Lead ☐ (NIOSH 7082) Other ☐ _____ Method: _____	Rotameter ☐ ID _____ Other: DC-Lite Dry Cal DC-L739	___ 0.8 um 25 mm MCE ___ charcoal tubes ___ Silica Gel ___ Other .45 TYM	✓ MCE <0.45um 25mm ___ PC <0.45um 37mm Mfr. _____ Lot No. 1337	✓ 385 mm² _____ mm² ___ NA	✓ 0.00785 mm² _____ mm² ___ NA

SAMPLE NUMBER/ PUMP NUMBER	SAMPLE TYPE	SAMPLE DESCRIPTION, LOCATION	ACTIVITY	TIME (24 HOUR CLOCK) Start	Stop	Total	FLOW RATE (L/MIN) Start	Stop	Avg.	AIR VOLUME (L)	DETECT. LIMIT OR LOQ	FIBERS/ PER FIELD	CONCENTRATION ✓ f/cc ___ other ___ ppm ___ mg/M³
B01	Field Blank	—	—	—	—	—	—	—	—	—	—	0/100	Field Blank
B02	Field Blank	—	—	—	—	—	—	—	—	—	—	1.0/100	Field Blank
A03/A-07	Perimeter	Location #1 – North of Pole Barn on perimeter	—	0747	(Pin) 1559	(Pin) 492 ~~528~~	5.34	5.70	5.52	2715.84 ~~2714.58~~ (Pin)	0.001	4.5/100	≤ LOQ
A04/A-08	↓	west of Planer building about 20 ft. east of location #3	—	0755	1602	487	5.11	5.38	5.25	2556.75	0.001	8.5/100	0.002
A05/A-09	↓	South & against Pole Barn	—	0803	1607	484	6.52	7.08	6.80	3291.20	0.001	12.0/100	0.002
Blind Recount													

Key:

Sample Type: P = Personal; Ex = Excursion; IWA = Inside Work Area; OWA = Outside Work Area; BAK = Background; A = Ambient Air; HEX = HEPA Exhaust; CL = Clearance Sample

Activity: PREP = Work Area Preparation; REM - Removal; GB - Glovebag; FC - Final Cleaning; BO = Bagout; TD = Tear Down; PP - Paint Prep

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Project No. 805169
File Code No. 4.5.b.4.57
Doc No. _____

KEH\FORMS\AIRFRM97

KOCH ENVIRONMENTAL HEALTH, INC.
ASBESTOS FIBER COUNT WORKSHEET

DATE: 9/13/00	KEH PROJECT #: 21001-001 MICROSCOPE ID #: 1	KEH REP: Patrick McGurren ANALYST: Patrick McGurren

SAMPLE #	FIBER COUNT	F/N	F/N -B/NB / 100	FIBERS/MM²	SAMPLE VOL. (L)	LOQ (fibers/cc)	FIBERS/CC	COMMENTS
Field Blank B01	0	0/100	–	–	–	–	–	Field Blank
Field Blank B02	1.0	1.0/100	–	–	–	–	–	Field Blank
A03	4.5	4.5/100	4.0/100/.00785	5.10	2715.84	0.001	LOQ	–
A04	8.5	8.5/100	8.0/100/.00785	10.19	2556.75	0.001	0.002	–
A05	12.0	12.0/100	11.5/100/.00785	14.65	3291.20	0.001	0.002	–
Blind Recount								

SAMPLING INFORMATION:

Effective Collection Area of Filter:	Microscope Field Area:	NIOSH 7400 Method A Rules ✓
✓ 385 mm², 25 mm filter	✓ 0.00785 mm²	
855 mm², 37 mm filter	other (list)	Other Method

ANALYTICAL INFORMATION:

MICROSCOPE ADJUSTMENTS: ✓ phase test ✓ micrometer ✓ adjust field iris ✓ adjust phase rings ✓ focus on samples

ANALYST INFORMATION:

DATE: 9/13/00	ANALYST: Patrick McGurren	SIGNATURE: [signature]

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Project No. 805169
File Code No. 4.5.6.4.58
Doc No.

KEH97/FORMS/FIBERFRM

KOCH ENVIRONMENTAL HEALTH, INC.
AIR CONTAMINANT SAMPLING FORM

DATE:	CLIENT: URS Radian	PROJECT CONTACT:	PROJECT LOCATION:	SAMPLING REP:
9/14/00	PROJECT #: 21001-001	Tim Gish	WR Grace Vermiculite Mine Excavation WORK AREA: Glory Hole #1 - Libby, MT	Patrick McGuire ANALYSIS BY: Patrick McGuire

SAMPLE TYPE:	PUMP CALIBRATION:	FILTER TYPE:	TEM FILTER:	FILTER FCA:	MICROSCOPE FIELD AREA:
Asbestos ☒ (NIOSH 7400) Lead ☐ (NIOSH 7082) Other ☐ _____ Method: _____	Rotameter ☐ ID _____ Other: DC-Lite Dry Cal - DC-6739	___ 0.8 um 25 mm MCE ___ charcoal tubes ___ Silica Gel ___ Other .45 TEM	✓ MCE <0.45um 25mm ___ PC <0.45um 37mm Mfr. _____ Lot No. 1337	✓ 385 mm² _____ mm² ___ NA	✓ 0.00785 mm² _____ mm² ___ NA

SAMPLE NUMBER/ PUMP NUMBER	SAMPLE TYPE	SAMPLE DESCRIPTION, LOCATION	ACTIVITY	TIME (24 HOUR CLOCK) Start	Stop	Total	FLOW RATE (L/MIN) Start	Stop	Avg.	AIR VOLUME (L)	DETECT. LIMIT OR LOQ	FIBERS/ PER FIELD	CONCENTRATION ✓ F/cc ___ other ___ ppm ___ mg/M³
B01	Field Blank	—	—	—	—	—	—	—	—	—	—	1.9/100	Field Blank
B02	Field Blank	—	—	—	—	—	—	—	—	—	—	0/100	Field Blank
A03	work area	Mine excavation Glory Hole - WEST	Excavation	1428	1610	102	1.5	1.3	1.4	142.8	0.019	2.0/100	< LOQ
A04	work area	Mine excavation Glory Hole - EAST	↓	1435	1613	98	1.5	1.5	1.5	147.0	0.018	1.0/100	< LOQ
P05	P	Glory Hole - Mine excavation - work by - Grant Garcia	↓	1413	1605	112	1.5	1.5	1.5	168.0	0.016	25.5/100	0.073
Blind Recount													

Key:

Sample Type:			Activity:		
	P = Personal	BAK = Background		PREP = Work Area Preparation	BO = Bagout
	Ex = Excursion	A = Ambient Air		REM - Removal	TD = Tear Down
	IWA = Inside Work Area	HEX = HEPA Exhaust		GB - Glovebag	PP - Paint Prep
	OWA = Outside Work Area	CL = Clearance Sample		FC - Final Cleaning	

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Project No. 805169
File Code No. 4.5.b.4.59
Doc No. _____

KEH\FORMS\AIRFRM97

KOCH ENVIRONMENTAL HEALTH, INC.
ASBESTOS FIBER COUNT WORKSHEET

DATE: 9/14/00	KEH PROJECT #: 21001-001 MICROSCOPE ID #: 1	KEH REP: Patrick McGovern ANALYST: Patrick McGovern

SAMPLE #	FIBER COUNT	F/N	F/N -B/NB / 100	FIBERS/MM²	SAMPLE VOL. (L)	LOQ (fibers/cc)	FIBERS/CC	COMMENTS
Field Blank B01	1.0	1.0/100	–	–	–	–	–	Field Blank
Field Blank B02	Ø	Ø/100	–	–	–	–	–	Field Blank
A03	2.0	2.0/100	1.5/100/.00785	1.91	142.80	0.019	< LOQ	–
A04	1.0	1.0/100	0.5/100/.00785	0.64	147.00	0.018	< LOQ	–
P05	25.5	25.5/100	25.0/100/.00785	31.85	168.00	0.016	0.073	–
Blind Recount								

SAMPLING INFORMATION:

Effective Collection Area of Filter:	Microscope Field Area:	NIOSH 7400 Method A Rules ___
___ 385 mm², 25 mm filter	✓ 0.00785 mm²	
___ 855 mm², 37 mm filter	___ other (list)	Other Method

ANALYTICAL INFORMATION:

MICROSCOPE ADJUSTMENTS: ✓ phase test ✓ micrometer ✓ adjust field iris ✓ adjust phase rings ✓ focus on samples

ANALYST INFORMATION:

DATE: 9/14/00 ANALYST: Patrick McGovern SIGNATURE: [signature]

URS

Project No. 805169
File Code No. 4.5.b.4.60
Doc No.

KEH97/FORMS/FIBERFRM

KOCH ENVIRONMENTAL HEALTH, INC.
AIR CONTAMINANT SAMPLING FORM

DATE:	CLIENT:	PROJECT CONTACT:	PROJECT LOCATION:	SAMPLING REP:
9/15/00	AC & S PROJECT #: 01001-043	Chuck Shaw	W.R. Grace Vermiculite Plant- Storage Shed WORK AREA: Libby, MT	Patrick McGurran ANALYSIS BY: Patrick McGurran

SAMPLE TYPE:	PUMP CALIBRATION:	FILTER TYPE:	TEM FILTER:	FILTER FCA:	MICROSCOPE FIELD AREA:
Asbestos ☑ (NIOSH 7400) Lead ☐ (NIOSH 7082) Other ☐ _____ Method: _____	Rotameter ☑ ID _____ Other: _____	___ 0.8 um 25 mm MCE ___ charcoal tubes ___ Silica Gel ___ Other .45 TEM	✓ MCE <0.45um 25mm ___ PC <0.45um 37mm Mfr. _____ Lot No. 1337	✓ 385 mm² _____ mm² ___ NA	✓ 0.00785 mm² _____ mm² ___ NA

SAMPLE NUMBER/ PUMP NUMBER	SAMPLE TYPE	SAMPLE DESCRIPTION, LOCATION	ACTIVITY	TIME (24 HOUR CLOCK) Start	Stop	Total	FLOW RATE (L/MIN) Start	Stop	Avg.	AIR VOLUME (L)	DETECT. LIMIT OR LOQ	FIBERS/ PER FIELD	CONCENTRATION ✓ F/cc ___ other ___ ppm ___ mg/M³
B01	Field Blank												Field Blank
B02	Field Blank												Field Blank
P03	P	Inside Storage shed - worn by- Guillermo Martinez	Storage shed cleaning	1823	2115	172	1.5	1.5	1.5	258.00	0.011	52.5/100	0.099
P04	↓	Inside Storage shed worn by- Cayetano Montoya	↓	1827	2015	108	1.5	1.5	1.5	162.00	0.017	23.5/100	0.070
P05	Ex	↓	↓	2015	2045	30	1.5	1.5	1.5	45.00	0.060	10.0/100	0.104
P06	P	↓	↓	2045	2115	30	1.5	1.5	1.5	45.00	0.060	5.0/100	< LOQ
Blind Recount													

Key:

Sample Type:
- P = Personal
- Ex = Excursion
- IWA = Inside Work Area
- OWA = Outside Work Area
- BAK = Background
- A = Ambient Air
- HEX = HEPA Exhaust
- CL = Clearance Sample

Activity:
- PREP = Work Area Preparation
- REM - Removal
- GB - Glovebag
- FC - Final Cleaning
- BO = Bagout
- TD = Tear Down
- PP - Paint Prep

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Project No. 805169

File Code No. 4.5.6.2.58

Doc No.

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KOCH ENVIRONMENTAL HEALTH, INC.
7342 South Moore Court
Littleton, CO 80127
Phone: (303) 932-8484 FAX: (303) 932-8585

URS

Project No. 805169
File Code No. 4.5.b.2.59
Doc No.

CONTRACTOR PERSONNEL AIR SAMPLING SUMMARY

Client: AC & S **Project:** 01001-043	**Project Contact:** Chuck Shaw	**Location:** WR Grace Vermiculite Plant Libby, MT	**KEH Rep:** Patrick McGurren **Analysis By:** Patrick McGurren

Date: 9/15/00	**Calibration:** ✓ Rotameter ____ ID ____ Other ____ ID	**Microscope Field Area:** ✓ 0.00785 sq mm ____ other ____ sq mm	**PCM Filter:** ✓ 0.8 um25mm Mft. ____ ____ 0.8 um37mm Lot# ____	**Other Media:** ____ Type Mft. ____ ____ Type Mft. ____

Name: Guillermo Martinez **SSN:** 622-09-2411	**Name:** Cayetano Montoya **SSN:** 645-22-6340	**Name:** — **SSN:**	**Name:** — **SSN:**

TOTAL				TOTAL				TOTAL				TOTAL			
Sample #	Minutes	Volume	F/cc	Sample #	Minutes	Volume	F/cc	Sample #	Minutes	Volume	F/cc	Sample #	Minutes	Volume	F/cc
P03	172	258.00	0.099	P04	108	162.00	0.070								
				P05	30	45.00	0.104								
				P06	30	45.00	< LOQ								

TWA: 0.035 F/cc

Comments: 17.028/480

TWA: 0.022 F/cc

Comments: 7.56 + 3.12 + 0.03/480
10.71/480

TWA: —

Comments:

TWA: —

Comments

URS

Project No. 80516A
File Code No. 4.5.6.2.60
Doc No.

KOCH ENVIRONMENTAL HEALTH, INC.
ASBESTOS FIBER COUNT WORKSHEET

DATE: 9/15/00

KEH PROJECT #: 01001-043

MICROSCOPE ID #:

KEH REP: Patrick McGurren

ANALYST: Patrick McGurren

SAMPLE #	FIBER COUNT	F/N	F/N -B/NB / 100	FIBERS/MM²	SAMPLE VOL. (L)	LOQ (fibers/cc)	FIBERS/CC	COMMENTS
Field Blank B01	0	0/100	—	—	—	—	—	Field Blank
Field Blank B02	1.0	1.0/100	—	—	—	—	—	Field Blank
P03	52.5	52.5/100	52.0/100/.00785	66.24	258.00	0.011	0.099	—
P04	23.5	23.5/100	23.0/100/.00785	29.30	162.00	0.016	0.070	—
P05	10.0	10.0/100	9.5/100/.00785	12.10	45.00	0.060	0.104	—
P06	5.0	5.0/100	4.5/100/.00785	5.73	45.00	0.060	< LOQ	—
Blind Recount								

SAMPLING INFORMATION:

Effective Collection Area of Filter:
- ✓ 385 mm², 25 mm filter
- 855 mm², 37 mm filter

Microscope Field Area:
- ✓ 0.00785 mm²
- other (list)

NIOSH 7400 Method A Rules ✓

Other Method

ANALYTICAL INFORMATION:

MICROSCOPE ADJUSTMENTS: ✓ phase test ✓ micrometer ✓ adjust field iris ✓ adjust phase rings ✓ focus on samples

ANALYST INFORMATION:

DATE: 9/16/00

ANALYST: Patrick McGurren

SIGNATURE: [signature]

KOCH ENVIRONMENTAL HEALTH, INC.
AIR CONTAMINANT SAMPLING FORM

DATE:	CLIENT:	PROJECT CONTACT:	PROJECT LOCATION:	SAMPLING REP:
9/15/00	URS Radian PROJECT #: 21001-001	Tim Gish	WR Grace Vermiculite Plant WORK AREA: Libby, MT - Storage Shed	Patrick McGinnes ANALYSIS BY: Patrick McGinnes

SAMPLE TYPE:	PUMP CALIBRATION:	FILTER TYPE:	TEM FILTER:	FILTER FCA:	MICROSCOPE FIELD AREA:
Asbestos ☑ (NIOSH 7400) Lead ☐ (NIOSH 7082) Other ☐ _____ Method: _____	Rotameter ☐ ID _____ Other: DC-Lite Dry Cal DC-4739	___ 0.8 um 25 mm MCE ___ charcoal tubes ___ Silica Gel ___ Other .45 TEM	✓ MCE <0.45um 25mm ___ PC <0.45um 37mm Mfr. _____ Lot No. 1337	✓ 385 mm² _____ mm² ___ NA	✓ 0.00785 mm² _____ mm² ___ NA

SAMPLE NUMBER/ PUMP NUMBER	SAMPLE TYPE	SAMPLE DESCRIPTION, LOCATION	ACTIVITY	TIME (24 HOUR CLOCK) Start	Stop	Total	FLOW RATE (L/MIN) Start	Stop	Avg.	AIR VOLUME (L)	DETECT. LIMIT OR LOQ	FIBERS/ PER FIELD	CONCENTRATION ✓ F/cc ___ other ___ ppm ___ mg/M³
B01	Field Blank	—	—	—	—	—	—	—	—	—	—	0/100	Field Blank
B02	Field Blank	—	—	—	—	—	—	—	—	—	—	1.0/100	Field Blank
PM03 ~~PM03~~/A-09	Perimeter	Location #1 - North of Pole Barn - on perimeter	—	1745	2119	214	5.00	5.00	5.00	1070.00	0.003	3.0/100 <LOQ	<LOQ
PM04 ~~PM04~~/A-87		Location #2 - NW of Planer Building - on perimeter	—	1749	2142	233	5.00	5.00	5.00	1165.00	0.002	1.0/100 <LOQ	<LOQ
PM05 ~~PM05~~/A-23		Location #3 - West of Planer Building - on perimeter	—	1752	2145	233	6.00	6.00	6.00	1398.00	0.002	4.0/100 <LOQ	<LOQ
PM06 ~~PM06~~/A-25		Location #4 - SW of Planer building - on perimeter	—	1759	2124	205	5.00	5.00	5.00	1025.00	0.003	1.0/100 <LOQ	<LOQ
PM07 ~~PM07~~/A-24		Location #5 - South of warehouse building - on perimeter	—	1803	2129	206	5.15	5.25	5.50	1133.00	0.002	LOQ	LOQ
PM08 ~~PM08~~/A-1		Location #6 - NE of Lumber storage building - on perimeter	—	1830	2136	186	6.00	6.00	6.00	1116.00	0.002	<LOQ	<LOQ
PM09 ~~PM09~~/A-27		Location #7 - NE corner of property - on stop sign - Highway 37	—	1731	2150	259	6.00 ~~5.80~~ (pm)	5.50	5.75	1489.25	0.002	<LOQ	<LOQ
Blind Recount													

Key:

Sample Type: P = Personal; Ex = Excursion; IWA = Inside Work Area; OWA = Outside Work Area; BAK = Background; A = Ambient Air; HEX = HEPA Exhaust; CL = Clearance Sample

Activity: PREP = Work Area Preparation; REM - Removal; GB - Glovebag; FC - Final Cleaning; BO = Bagout; TD = Tear Down; PP - Paint Prep

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Project No. 805169
File Code No. 4.5.6.4.61
Doc No. _____

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KOCH ENVIRONMENTAL HEALTH, INC.
ASBESTOS FIBER COUNT WORKSHEET

DATE: 9/15/00	KEH PROJECT #: 21001-001 MICROSCOPE ID #: 1	KEH REP: Patrick McGurren ANALYST: Patrick McGurren

SAMPLE #	FIBER COUNT	F/N	F/N -B/NB / 100	FIBERS/MM²	SAMPLE VOL. (L)	LOQ (fibers/cc)	FIBERS/CC	COMMENTS
Field Blank B01	0	0/100	—	—	—	—	—	Field Blank
Field Blank B02	1.0	1.0/100	—	—	—	—	—	Field Blank
PMA03	3.0	3.0/100	2.5/100/.00785	3.18	1070.00	0.003	< LOQ	—
PMA04	1.0	1.0/100	0.5/100/.00785	0.64	1165.00	0.002	< LOQ	—
PMA05	4.0	4.0/100	3.5/100/.00785	4.46	1398.00	0.002	< LOQ	—
PMA06	1.0	1.0/100	.5/100/.00785	0.64	1025.00	0.003	< LOQ	—
PMA07	5.5	5.5/100	5.0/100/.00785	6.37	1133.00	0.002	LOQ	—
PMA08	1.5	1.5/100	1.0/100/.00785	1.27	1116.00	0.002	< LOQ	—
PMA09	1.0	1.0/100	0.5/100/.00785	0.64	1489.25	0.002	< LOQ	—
—	—	—	—	—	—	—	—	—
Blind Recount	—	—	—	—	—	—	—	—

SAMPLING INFORMATION:

Effective Collection Area of Filter:	Microscope Field Area:	NIOSH 7400 Method A Rules ✓
✓ 385 mm², 25 mm filter	✓ 0.00785 mm²	
855 mm², 37 mm filter	other (list)	Other Method

ANALYTICAL INFORMATION:

MICROSCOPE ADJUSTMENTS: ✓ phase test ✓ micrometer ✓ adjust field iris ✓ adjust phase rings ✓ focus on samples

ANALYST INFORMATION:

DATE: 9/16/00 ANALYST: Patrick McGurren SIGNATURE: [signature]

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Project No. 805169
File Code No. 4.5.6.4.62
Doc No.

KEH97/FORMS/FIBERFRM

KOCH ENVIRONMENTAL HEALTH, INC.
AIR CONTAMINANT SAMPLING FORM

DATE:	CLIENT:	PROJECT CONTACT:	PROJECT LOCATION:	SAMPLING REP:
9/15/00	URS Radian PROJECT #: Z1001-001	Tim Gish	Excavation #1 WR Grace Vermiculite Mine # Glory Hole I WORK AREA: Libby, MT	Patrick McGovern ANALYSIS BY: Patrick McGovern

SAMPLE TYPE:	PUMP CALIBRATION:	FILTER TYPE:	TEM FILTER:	FILTER FCA:	MICROSCOPE FIELD AREA:
Asbestos ☑ (NIOSH 7400) Lead ☐ (NIOSH 7082) Other ☐ _____ Method: _____	Rotameter ☐ ID _____ Other: DC-Lite Dry Cal DC-L739	___ 0.8 um 25 mm MCE ___ charcoal tubes ___ Silica Gel ___ Other .45 TEM	✓ MCE <0.45um 25mm ___ PC <0.45um 37mm Mft. _____ Lot No. 1337	✓ 385 mm² _____ mm² ___ NA	✓ 0.00785 mm² _____ mm² ___ NA

SAMPLE NUMBER/ PUMP NUMBER	SAMPLE TYPE	SAMPLE DESCRIPTION, LOCATION	ACTIVITY	TIME (24 HOUR CLOCK) Start	Stop	Total	FLOW RATE (L/MIN) Start	Stop	Avg.	AIR VOLUME (L)	DETECT. LIMIT OR LOQ	FIBERS/ PER FIELD	CONCENTRATION ✓ F/cc ___ other ___ ppm ___ mg/M³
B01a	Field Blank	—	—	—	—	—	—	—	—	—	—	0/100	Field Blank
B02a	Field Blank	—	—	—	—	—	—	—	—	—	—	0/100	Field Blank
A03a	Work area	Mine excavation - Glory Hole - West	Excavation	0835	1442	367	1.5	1.5	1.5	550.50	0.005	0/100	< LOQ
A04a	work area	Mine excavation Glory Hole - North	↓	0846	1446	360	1.5	1.5	1.5	540.00	0.005	1.0/100	< LOQ
P05a	P	Mine excavation Glory Hole - work by Grant Garcia	↓	0827	1411	344	1.5	1.5	1.5	516.00	0.005	65.5/100	0.062
Blind Recount													

Key:

Sample Type:
- P = Personal
- Ex = Excursion
- IWA = Inside Work Area
- OWA = Outside Work Area
- BAK = Background
- A = Ambient Air
- HEX = HEPA Exhaust
- CL = Clearance Sample

Activity:
- PREP = Work Area Preparation
- REM - Removal
- GB - Glovebag
- FC - Final Cleaning
- BO = Bagout
- TD = Tear Down
- PP - Paint Prep

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Project No. 805169
File Code No. 4.5.b.4.63
Doc No. _____

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KOCH ENVIRONMENTAL HEALTH, INC.
7342 South Moore Court
Littleton, CO 80127
Phone: (303) 932-8484 FAX: (303) 932-8585

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Project No. 805169
File Code No. 4.5.6.4.64
Doc No.

CONTRACTOR PERSONNEL AIR SAMPLING SUMMARY

Client: URS Radian **Project:** 21001-001	**Project Contact:** Tim Gish	**Location:** WR Grace Vermiculite Plant Libby, MT	**KEH Rep:** Patrick McGurren **Analysis By:** Patrick McGurren

Date:	**Calibration:**	**Microscope Field Area:**	**PCM Filter:**	**Other Media:**
9/15/00	✓ Rotameter ____ ID ____ Other ____ ID	✓ 0.00785 sq mm ____ other ____ sq mm	✓ 0.8 um25mm Mft. ____ ____ 0.8 um37mm Lot# ____	____ Type Mft. ____ ____ Type Mft. ____

Name: Grant Garcia **SSN:** 542-44-9486	**Name:** — **SSN:**	**Name:** — **SSN:**	**Name:** — **SSN:**

TOTAL				TOTAL				TOTAL				TOTAL			
Sample #	Minutes	Volume	F/cc	Sample #	Minutes	Volume	F/cc	Sample #	Minutes	Volume	F/cc	Sample #	Minutes	Volume	F/cc
P05a	344	516.00	0.062												

TWA: 0.044 f/cc

Comments: 21.328/480

TWA: n/a

Comments:

TWA: n/a

Comments:

TWA: n/a

Comments

URS

Project No. 805169
File Code No. 4.5.6.4.65
Doc No.

KOCH ENVIRONMENTAL HEALTH, INC.
ASBESTOS FIBER COUNT WORKSHEET

DATE:	KEH PROJECT #: 21001-001	KEH REP: Patrick McGurren
9/15/00	MICROSCOPE ID #: 1	ANALYST: Patrick McGurren

SAMPLE #	FIBER COUNT	F/N	F/N -B/NB / 100	FIBERS/MM²	SAMPLE VOL. (L)	LOQ (fibers/cc)	FIBERS/CC	COMMENTS
Field Blank B01a	0	0/100	—	—	—	—	—	Field Blank
Field Blank B02a	0	0/100	—	—	—	—	—	Field Blank
A03a	0	0/100	0/100/.00785	0	550.50	0.005	<LOQ	—
A04a	1.0	1.0/100	1.0/100/.00785	1.27	540.00	0.005	<LOQ	—
P05a	65.5	65.5/100	65.5/100/.00785	83.44	516.00	0.005	0.062	—
Blind Recount								

SAMPLING INFORMATION:

Effective Collection Area of Filter:	Microscope Field Area:	NIOSH 7400 Method A Rules ✓
✓ 385 mm², 25 mm filter	✓ 0.00785 mm²	
855 mm², 37 mm filter	other (list)	Other Method

ANALYTICAL INFORMATION:

MICROSCOPE ADJUSTMENTS: ✓ phase test ✓ micrometer ✓ adjust field iris ✓ adjust phase rings ✓ focus on samples

ANALYST INFORMATION:

DATE: 9/16/00	ANALYST: Patrick McGurren	SIGNATURE: [signature]

KOCH ENVIRONMENTAL HEALTH, INC.
AIR CONTAMINANT SAMPLING FORM

DATE:	CLIENT:	PROJECT CONTACT:	PROJECT LOCATION:	SAMPLING REP:
9/16/00	ACE 5 PROJECT #: 01001-043	Chuck Shaw	WR Grace Vermiculite Plant - Storage shed WORK AREA: Libby, MT	Patrick McGuire ANALYSIS BY: Patrick McGuire

SAMPLE TYPE:	PUMP CALIBRATION:	FILTER TYPE:	TEM FILTER:	FILTER FCA:	MICROSCOPE FIELD AREA:
Asbestos ☑ (NIOSH 7400) Lead ☐ (NIOSH 7082) Other ☐ _____ Method: _____	Rotameter ☑ ID _____ Other: _____	___ 0.8 um 25 mm MCE ___ charcoal tubes ___ Silica Gel ___ Other 145 TEM	✓ MCE <0.45um 25mm ___ PC <0.45um 37mm Mfr. _____ Lot No. 1337	✓ 385 mm² _____ mm² ___ NA	✓ 0.00785 mm² _____ mm² ___ NA

SAMPLE NUMBER/ PUMP NUMBER	SAMPLE TYPE	SAMPLE DESCRIPTION, LOCATION	ACTIVITY	TIME (24 HOUR CLOCK) Start	Stop	Total	FLOW RATE (L/MIN) Start	Stop	Avg.	AIR VOLUME (L)	DETECT. LIMIT OR LOQ	FIBERS/ PER FIELD	CONCENTRATION ✓ f/cc ___ other ___ ppm ___ mg/M³
B01	Field Blank	—	—	—	—	—	—	—	—	—	—	1.0/100	Field Blank
B02	Field Blank	—	—	—	—	—	—	—	—	—	—	0/100	Field Blank
P03	Ex	Inside storage shed worn by - Margarito Rivera	storage shed cleaning	1531	1606	35	1.30	1.30	1.30	45.5	0.060	3.5/100	<LOQ
P04	P	Inside storage shed worn by - Isabel Herrera ~~Herrera~~	↓	1530	2101	331	1.30	1.10	1.20	397.20	0.007	100/72	0.171
P05	↓	Inside storage shed worn by - Margarito Rivera	↓	1606	2102	296	1.30	1.30	1.30	384.80	0.007	50.0/100	0.063
Blind Recount													

Key:

Sample Type:			Activity:		
	P = Personal	BAK = Background		PREP = Work Area Preparation	BO = Bagout
	Ex = Excursion	A = Ambient Air		REM - Removal	TD = Tear Down
	IWA = Inside Work Area	HEX = HEPA Exhaust		GB - Glovebag	PP - Paint Prep
	OWA = Outside Work Area	CL = Clearance Sample		FC - Final Cleaning	

URS

Project No. 805169
File Code No. 4.5.6.2.~~62~~ 61
Doc No. _____

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KOCH ENVIRONMENTAL HEALTH, INC.
7342 South Moore Court
Littleton, CO 80127
Phone: (303) 932-8484 FAX: (303) 932-8585

CONTRACTOR PERSONNEL AIR SAMPLING SUMMARY

Client: AC & S **Project:** D1001-043	**Project Contact:** Chuck Shaw	**Location:** WR Grace Vermiculite Plant Libby, MT	**KEH Rep:** Patrick McGurran **Analysis By:** Patrick McGurran

Date: 9/16/00	**Calibration:** ✓ Rotameter ____ ID ____ Other ____ ID	**Microscope Field Area:** ✓ 0.00785 sq mm ____ other ____ sq mm	**PCM Filter:** ✓ 0.8 um25mm Mft. ____ ____ 0.8 um37mm Lot# ____	**Other Media:** ____ Type Mft. ____ ____ Type Mft. ____

Name: Margarito Rivera **SSN:** 438-20-3756	**Name:** Isabel Herrera **SSN:** 456-71-9753	**Name:** — **SSN:**	**Name:** — **SSN:**

TOTAL				TOTAL				TOTAL				TOTAL			
Sample #	Minutes	Volume	F/cc	Sample #	Minutes	Volume	F/cc	Sample #	Minutes	Volume	F/cc	Sample #	Minutes	Volume	F/cc
P03	35	45.5	<LOQ	P04	331	397.20	0.171								
P05	296	384.80	0.063												

TWA: 0.039

Comments: 0.035+ 18.648/480
18.683/480

TWA: 0.118

Comments: 56.601/480

TWA: n/a

Comments:

TWA: n/a

Comments

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Project No. 805169
File Code No. 4.5.6.2.62
Doc No.

KOCH ENVIRONMENTAL HEALTH, INC.
ASBESTOS FIBER COUNT WORKSHEET

DATE: 9/16/00	KEH PROJECT #: 01001-043	KEH REP: Patrick McGuire
	MICROSCOPE ID #: 1	ANALYST: Patrick McGuire

SAMPLE #	FIBER COUNT	F/N	F/N -B/NB / 100	FIBERS/MM²	SAMPLE VOL. (L)	LOQ (fibers/cc)	FIBERS/CC	COMMENTS
Field Blank B01	1.0	1.0/100	—	—	—	—	—	Field Blank
Field Blank B02	Ø	Ø/100	—	—	—	—	—	Field Blank
P03	3.5	3.5/100	3.0/100/.00785	3.82	45.50	0.060	<LOQ	—
P04	100.0	100.0/72	99.4/72/.00785	176.04	397.20	0.007	0.171	—
P05	50.0	50.0/100	49.5/100/.00785	63.06	384.80	0.007	0.063	—
Blind Recount								

SAMPLING INFORMATION:

Effective Collection Area of Filter:	Microscope Field Area:	NIOSH 7400 Method A Rules ✓
✓ 385 mm², 25 mm filter	✓ 0.00785 mm²	
855 mm², 37 mm filter	other (list)	Other Method

ANALYTICAL INFORMATION:

MICROSCOPE ADJUSTMENTS: ✓ phase test ✓ micrometer ✓ adjust field iris ✓ adjust phase rings ✓ focus on samples

ANALYST INFORMATION:

DATE: 9/17/00 ANALYST: Patrick McGuire SIGNATURE: [signature]

URS

Project No. 805167
File Code No. 4.5.6.2.63
Doc No.

KEH97/FORMS/FIBERFRM

KOCH ENVIRONMENTAL HEALTH, INC.
AIR CONTAMINANT SAMPLING FORM

DATE:	CLIENT:	PROJECT CONTACT:	PROJECT LOCATION:	SAMPLING REP:
9/16/00	URS Radian PROJECT #: Z1001-001	Tim Gish	WR Grace Vermiculite Plant - storage shed WORK AREA: Libby, MT	Patrick McGurren ANALYSIS BY: Patrick McGurren

SAMPLE TYPE:	PUMP CALIBRATION:	FILTER TYPE:	TEM FILTER:	FILTER FCA:	MICROSCOPE FIELD AREA:
Asbestos ☑ (NIOSH 7400) Lead ☐ (NIOSH 7082) Other ☐ _____ Method: _____	Rotameter ☑ ID _____ Other: _____	___ 0.8 um 25 mm MCE ___ charcoal tubes ___ Silica Gel ___ Other .45 TEM	✓ MCE <0.45um 25mm ___ PC <0.45um 37mm Mfl. _____ Lot No. 1337	✓ 385 mm² _____ mm² ___ NA	✓ 0.00785 mm² _____ mm² ___ NA

SAMPLE NUMBER/ PUMP NUMBER	SAMPLE TYPE	SAMPLE DESCRIPTION, LOCATION	ACTIVITY	TIME (24 HOUR CLOCK) Start	Stop	Total	FLOW RATE (L/MIN) Start	Stop	Avg.	AIR VOLUME (L)	DETECT. LIMIT OR LOQ	FIBERS/ PER FIELD	CONCENTRATION ✓ F/cc ___ other ___ ppm ___ mg/M³
B01	Field Blank	—	—	—	—	—	—	—	—	—	—	1.0/100	Field Blank
B02	Field Blank	—	—	—	—	—	—	—	—	—	—	Ø/100	Field Blank
PM03/A09 +24	Perimeter	Location #1 - North of Pole Barn - on perimeter	—	1502	2010	~~508~~	5.0	5.0	5.0	1540.00 ~~1540.00~~	0.002	Ø/100	< LOQ
PM04/A-87		Location # 2 - NW of Planer building - on perimeter	—	1510	2032 ~~2016~~	322 ~~387~~	5.0	5.5	5.25	1690.50 ~~2005.50~~	0.002	1.0/100	< LOQ
PM05/A-23		Location # 3 - West of Planer building - on perimeter	—	1513	2036	323 ~~383~~	6.0	6.0	6.0	1938.00 ~~2298.00~~	0.001	0.5/100	< LOQ
PM06/A-24		Location #4 - SW of Planer building - on perimeter	—	1547	2016	269	5.5	5.5	5.5	1479.50	0.002	2.5/100	< LOQ
PM07/A25		Location # 5 - South of warehouse building - on perimeter	—	1553	2021	268	5.5	5.5	5.5	1474.00	0.002	1.5/100	< LOQ
PM08/A-1		Location # 6 - NE of lumber storage building on perimeter	—	1556	2028	272	6.0	6.5	6.25	1700.00	0.002	2.5/100	< LOQ
PM09/A-27		Location # 7 - NE corner of property - on stop sign Highway #37	—	1645	2052	247	5.0	5.5	5.25	1296.75	0.002	1.0/100	< LOQ
—	—	—	—	—	—	—	—	—	—	—	—	—	—
Blind Recount	—	—	—	—	—	—	—	—	—	—	—	—	—

Key:

Sample Type:			Activity:		
	P = Personal	BAK = Background		PREP = Work Area Preparation	BO = Bagout
	Ex = Excursion	A = Ambient Air		REM - Removal	TD = Tear Down
	IWA = Inside Work Area	HEX = HEPA Exhaust		GB - Glovebag	PP - Paint Prep
	OWA = Outside Work Area	CL = Clearance Sample		FC - Final Cleaning	

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Project No. 805169
File Code No. 4.5.6.4.66
Doc No. _____

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KOCH ENVIRONMENTAL HEALTH, INC.
ASBESTOS FIBER COUNT WORKSHEET

DATE: 9/16/00	KEH PROJECT #: 21001-001	KEH REP: Patrick McGerrer
	MICROSCOPE ID #: 1	ANALYST: Patrick McGerrer

SAMPLE #	FIBER COUNT	F/N	F/N - B/NB / 100	FIBERS/MM²	SAMPLE VOL. (L)	LOQ (fibers/cc)	FIBERS/CC	COMMENTS
Field Blank B01	1.0	1.0/100	—	—	—	—	—	Field Blank
Field Blank B02	Ø	Ø/100	—	—	—	—	—	Field Blank
PM03	Ø	Ø/100	Ø	Ø	1540.00	0.002	< LOQ	—
PM04	1.0	1.0/100	0.5/100/.00785	~~1.27~~ 0.64	1690.50	0.002	< LOQ	—
PM05	0.5	0.5/100	0/100/.00785	Ø	1938.00	0.001	< LOQ	—
PM06	2.5	2.5/100	2.0/100/.00785	2.55	1479.50	0.002	< LOQ	—
PM07	1.5	1.5/100	1.0/100/.00785	1.27	1474.00	0.002	< LOQ	—
PM08	2.5	2.5/100	2.0/100/.00785	2.55	1700.00	0.002	< LOQ	—
PM09	1.0	1.0/100	0.5/100/.00785	0.64	1296.75	0.002	< LOQ	—
—	—	—	—	—	—	—	—	—
Blind Recount	—	—	—	—	—	—	—	—

SAMPLING INFORMATION:

Effective Collection Area of Filter:	Microscope Field Area:	NIOSH 7400 Method A Rules ✓
✓ 385 mm², 25 mm filter	✓ 0.00785 mm²	
855 mm², 37 mm filter	other (list)	Other Method

ANALYTICAL INFORMATION:

MICROSCOPE ADJUSTMENTS: ✓ phase test ✓ micrometer ✓ adjust field iris ✓ adjust phase rings ✓ focus on samples

ANALYST INFORMATION:

DATE: 9/17/00 ANALYST: Patrick McGerrer SIGNATURE: [signature]

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Project No. 805169
File Code No. 4.5.5.4.67
Doc No.

KEH97/FORMS/FIBERFRM

KOCH ENVIRONMENTAL HEALTH, INC.
AIR CONTAMINANT SAMPLING FORM

DATE:	CLIENT:	PROJECT CONTACT:	PROJECT LOCATION:	SAMPLING REP:
4/17/00	AC & S PROJECT #: 01001-043	Chuck Shaw	WR Grace Vermiculite Plant WORK AREA: Libby, MT	Patrick McGuinn ANALYSIS BY: Patrick McGuinn

SAMPLE TYPE:	PUMP CALIBRATION:	FILTER TYPE:	TEM FILTER:	FILTER FCA:	MICROSCOPE FIELD AREA:
Asbestos ☑ (NIOSH 7400) Lead ☐ (NIOSH 7082) Other ☐ _____ Method: _____	Rotameter ☑ ID _____ Other: _____	___ 0.8 um 25 mm MCE ___ charcoal tubes ___ Silica Gel ___ Other .45 TEM	✓ MCE <0.45um 25mm ___ PC <0.45um 37mm Mfr. _____ Lot No. 1332	✓ 385 mm² _____ mm² ___ NA	✓ 0.00785 mm² _____ mm² ___ NA

SAMPLE NUMBER/ PUMP NUMBER	SAMPLE TYPE	SAMPLE DESCRIPTION, LOCATION	ACTIVITY	TIME (24 HOUR CLOCK) Start	Stop	Total	FLOW RATE (L/MIN) Start	Stop	Avg.	AIR VOLUME (L)	DETECT. LIMIT OR LOQ	FIBERS/ PER FIELD	CONCENTRATION ✓ F/cc ___ other ___ ppm ___ mg/M³
B01	Field Blank	—	—	—	—	—	—	—	—	—	—	0/100	Field Blank
B02	Field Blank	—	—	—	—	—	—	—	—	—	—	0/100	Field Blank
P03	P	Inside Storage Shed worn by Victor Rojas	Storage Shed power wash	0841	1209	208	1.3	1.3	1.3	270.40	0.010	90.0/100	0.163
P04	EX	Inside Storage Shed worn by Fernando Juarez		0843	0913	30	1.3	1.3	1.3	39.00	0.069	8.5/100	0.107
P05	P	Inside Storage Shed worn by Fernando Juarez		0913	1210	177	1.3	1.3	1.3	230.10	0.012	100.0/94	0.227
P06		Inside Storage Shed worn by Victor Rojas		1323	1958	395	1.3	1.3	1.3	513.50	0.005	100.0/84	0.114
P07		Inside Storage Shed worn by Fernando Juarez		1316	2002	406	1.3	1.3	1.3	527.80	0.005	63.0/100	0.059
Blind Recount													

Key:

Sample Type:			Activity:		
	P = Personal	BAK = Background		PREP = Work Area Preparation	BO = Bagout
	Ex = Excursion	A = Ambient Air		REM - Removal	TD = Tear Down
	IWA = Inside Work Area	HEX = HEPA Exhaust		GB - Glovebag	PP - Paint Prep
	OWA = Outside Work Area	CL = Clearance Sample		FC - Final Cleaning	

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Project No. 805169
File Code No. 4.5.6.2.64
Doc No. _____

KEH\FORMS\AIRFRM97

KOCH ENVIRONMENTAL HEALTH, INC.
7342 South Moore Court
Littleton, CO 80127
Phone: (303) 932-8484 FAX: (303) 932-8585

CONTRACTOR PERSONNEL AIR SAMPLING SUMMARY

Client: AC & S **Project:** 01001-043	**Project Contact:** Chuck Shaw	**Location:** WR Grace Vermiculite Plant - Storage Shed Libby, MT	**KEH Rep:** Patrick McGuire **Analysis By:** Patrick McGuire

Date:	**Calibration:**	**Microscope Field Area:**	**PCM Filter:**	**Other Media:**
9/17/00	✓ Rotameter ____ ID ____ Other ____ ID	✓ 0.00785 sq mm ____ other ____ sq mm	✓ 0.8 um25mm Mft. ____ ____ 0.8 um37mm Lot# ____	____ Type Mft. ____ ____ Type Mft. ____

Name:	**Name:**	**Name:**	**Name:**
Victor Rojas	Fernando Juarez	—	—
SSN: 645-65-4305	**SSN:** 619-34-6943	**SSN:**	**SSN:**

TOTAL				TOTAL				TOTAL				TOTAL			
Sample #	Minutes	Volume	F/cc	Sample #	Minutes	Volume	F/cc	Sample #	Minutes	Volume	F/cc	Sample #	Minutes	Volume	F/cc
P03	208	270.40	0.163	P04	30	39.0	0.107								
P06	395	513.50	0.114	P05	177	230.10	0.227								
				P07	406	527.80	0.059								

TWA: ~~0.164~~ 0.131 f/cc

Comments:
33.904 + 45.050 / ~~480~~ 603
78.934 / 603

TWA: 0.110 f/cc

Comments:
3.21 + 40.179 + 23.954 / 613
67.343 / 613

TWA: N/a

Comments:

TWA: N/a

Comments:

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Project No. 805169
File Code No. 4.5.5.2.65
Doc No. ____

KOCH ENVIRONMENTAL HEALTH, INC.
ASBESTOS FIBER COUNT WORKSHEET

DATE: 9/17/00	KEH PROJECT #: 01001-043	KEH REP: Patrick McGurren
	MICROSCOPE ID #: 1	ANALYST: Patrick McGurren

SAMPLE #	FIBER COUNT	F/N	F/N - B/NB / 100	FIBERS/MM²	SAMPLE VOL. (L)	LOQ (fibers/cc)	FIBERS/CC	COMMENTS
Field Blank B01	0	0/100	—	—	—	—	—	Field Blank
Field Blank B02	0	0/100	—	—	—	—	—	Field Blank
P03	90.0	90.0/100	90.0/100/.00785	114.65	270.40	0.010	0.163	—
P04	8.5	8.5/100	8.5/100/.00785	10.83	39.00	0.069	0.107	—
P05	100.0	100.0/94	100.0/94/.00785	135.520	230.10	0.012	0.227	—
P06	100.0	100.0/84	100.0/84/.00785	151.65	513.50	0.005	0.114	—
P07	63.0	63.0/100	63.0/100/.00785	80.255	527.80	0.005	0.059	—
Blind Recount								

SAMPLING INFORMATION:

Effective Collection Area of Filter:	Microscope Field Area:	NIOSH 7400 Method A Rules ✓
✓ 385 mm², 25 mm filter	✓ 0.00785 mm²	
855 mm², 37 mm filter	other (list)	Other Method

ANALYTICAL INFORMATION:

MICROSCOPE ADJUSTMENTS: ✓ phase test ✓ micrometer ✓ adjust field iris ✓ adjust phase rings ✓ focus on samples

ANALYST INFORMATION:

DATE: 9/18/00 ANALYST: Patrick McGurren SIGNATURE:

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Project No. 805169

File Code No. 4.5.b.2.66

Doc No.

KEH97/FORMS/FIBERFRM

KOCH ENVIRONMENTAL HEALTH, INC.
AIR CONTAMINANT SAMPLING FORM

DATE:	CLIENT:	PROJECT CONTACT:	PROJECT LOCATION:	SAMPLING REP:
9/17/00	PROJECT #: 21001-001	Tim Gish	WR Grace Vermiculite Plant WORK AREA: Libby, MT	Patrick McGinnis ANALYSIS BY: Patrick McGinnis

SAMPLE TYPE:	PUMP CALIBRATION:	FILTER TYPE:	TEM FILTER:	FILTER FCA:	MICROSCOPE FIELD AREA:
Asbestos ☑ (NIOSH 7400) Lead ☐ (NIOSH 7082) Other ☐ _____ Method: _____	Rotameter ☑ ID _____ Other: _____	___ 0.8 um 25 mm MCE ___ charcoal tubes ___ Silica Gel ___ Other - 45 TEM	✓ MCE <0.45um 25mm ___ PC <0.45um 37mm Mfr. _____ Lot No. 1337	✓ 385 mm² _____ mm² ___ NA	✓ 0.00785 mm² _____ mm² ___ NA

SAMPLE NUMBER/ PUMP NUMBER	SAMPLE TYPE	SAMPLE DESCRIPTION, LOCATION	ACTIVITY	TIME (24 HOUR CLOCK) Start	Stop	Total	FLOW RATE (L/MIN) Start	Stop	Avg.	AIR VOLUME (L)	DETECT. LIMIT OR LOQ	FIBERS/ PER FIELD	CONCENTRATION ✓ F/cc ___ other ___ ppm ___ mg/M³
B01	Field Blank	—	—	—	—	—	—	—	—	—	—	0/100	Field Blank
B02	Field Blank	—	—	—	—	—	—	—	—	—	—	0/100	Field Blank
PM03/A-09	Perimeter	Location #1 – North of Pole Barn – on perimeter	—	0809	1508	419	7.00	6.50	6.75	2828.25	0.001	3.0/100	LOQ
PM04/A-37	↓	Location #2 – NW of Planer building – on perimeter	—	0811	1514 ~~0814~~	423	5.00	5.00	5.00	2115.00	0.001	2.0/100	< LOQ
PM05/A-23	↓	Location #3 – West of Planer building – on perimeter	—	0814	1521	427	6.00	5.50	6.25	2668.75	0.001	2.5/100	< LOQ
PM06/A-24	↓	Location #4 – SW of Planer building – on perimeter	—	0818	1527	429	6.00	5.50	5.75	2466.75	0.001	4.0/100	LOQ
PM07/A-25	↓	Location #5 – South of warehouse building – on perimeter	—	0824	1534	430	6.00	5.50	5.75	2472.50	0.001	1.0/100	< LOQ
PM08/A-1	↓	Location #6 – NE of Lumber Storage building – on perimeter	—	0828	1539	431	6.00	6.00	6.00	2586.00	0.001	2.0/100	< LOQ
PM09/A-27	↓	Location #7 – NE corner of property – on stop sign Highway #37	—	0830	1542	432	5.50	5.50	5.50	2376.00	0.001	3.0/100	LOQ
PM10/A-09	↓	Location #1 – North of Pole Barn – on perimeter	—	1508	1919	251	5.00	5.00	5.00	1255.00	0.002	1.0/100	< LOQ
Blind Recount	—	—	—	—	—	—	—	—	—	—	—	—	—

Key:

Sample Type:			Activity:		
	P = Personal	BAK = Background		PREP = Work Area Preparation	BO = Bagout
	Ex = Excursion	A = Ambient Air		REM - Removal	TD = Tear Down
	IWA = Inside Work Area	HEX = HEPA Exhaust		GB - Glovebag	PP - Paint Prep
	OWA = Outside Work Area	CL = Clearance Sample		FC - Final Cleaning	

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Project No. 805169
File Code No. 4.5.6.4.68
Doc No. _____

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KOCH ENVIRONMENTAL HEALTH, INC.
AIR CONTAMINANT SAMPLING FORM

DATE:	CLIENT:	PROJECT CONTACT:	PROJECT LOCATION:	SAMPLING REP:
9/17/00	URS Radian PROJECT #: 21001-001	Tim Gish	WR Grace Vermiculite Plant - Storage Shed WORK AREA: Libby, MT	Patrick McGovern ANALYSIS BY: Patrick McGovern

SAMPLE TYPE:	PUMP CALIBRATION:	FILTER TYPE:	TEM FILTER:	FILTER FCA:	MICROSCOPE FIELD AREA:
Asbestos ✓ (NIOSH 7400) Lead ☐ (NIOSH 7082) Other ☐ _____ Method: _____	Rotameter ✓ ID _____ Other: _____	___ 0.8 um 25 mm MCE ___ charcoal tubes ___ Silica Gel ___ Other .45 TEM	✓ MCE <0.45um 25mm ___ PC <0.45um 37mm Mfl. _____ Lot No. 1337	✓ 385 mm² _____ mm² ___ NA	✓ 0.00785 mm² _____ mm² ___ NA

SAMPLE NUMBER/ PUMP NUMBER	SAMPLE TYPE	SAMPLE DESCRIPTION, LOCATION	ACTIVITY	TIME (24 HOUR CLOCK) Start	Stop	Total	FLOW RATE (L/MIN) Start	Stop	Avg.	AIR VOLUME (L)	DETECT. LIMIT OR LOQ	FIBERS/ PER FIELD	CONCENTRATION ✓ F/cc ___ other ___ ppm ___ mg/M³
B01	Field Blank	—	—	—	—	—	—	—	—	—	—	0/100	Field Blank
B02	Field Blank	—	—	—	—	—	—	—	—	—	—	0/100	Field Blank
PM11/A-82	Perimeter	Location #2 - SW of Planer building - on perimeter	—	1514	1722	248	5.00	5.00	5.00	1240.00	0.002	2.0/100	< LOQ
PM12/A-23	↓	Location #3 - West of Planer building - on perimeter	—	1521	1925	244	5.50	5.50	5.50	1342.00	0.002	1.5/100	< LOQ
PM13/A-24		Location #4 - SW of Planer Building - on perimeter	—	1527	1928	241	5.50	5.50	5.50	1325.50	0.002	2.5/100	< LOQ
PM14/A-25		Location #5 - South of warehouse building - on perimeter	—	1534	1933	239	5.50	5.50	5.50	1314.50	0.002	0/100	< LOQ
PM15/A-1		Location #6 - NW of Lumber storage building on perimeter	—	1539	1937	238	5.00	5.50	5.25	1190.00	0.002	1.0/100	< LOQ
PM16/A-27	↓	Location #7 - NE corner of property - on stop sign Highway #37	—	1546	1940	234	5.00	5.00	5.00	1170.00	0.002	2.0/100	< LOQ
A17/305	OWA	Inside storage shed - Clean room	Storage shed cleaning	0912	1948	636	2.00	1.90	1.95	1240.20	0.002	10.0/100	0.004
.	—	—	—	—	—	—	—	—	—	—	—	—	—
Blind Recount	—	—	—	—	—	—	—	—	—	—	—	—	—

Key:

Sample Type:
- P = Personal
- Ex = Excursion
- IWA = Inside Work Area
- OWA = Outside Work Area
- BAK = Background
- A = Ambient Air
- HEX = HEPA Exhaust
- CL = Clearance Sample

Activity:
- PREP = Work Area Preparation
- REM - Removal
- GB - Glovebag
- FC - Final Cleaning
- BO = Bagout
- TD = Tear Down
- PP - Paint Prep

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Project No. 805169
File Code No. 4.5.b.4.69
Doc No. _____

KEH\FORMS\AIRFRM97

KOCH ENVIRONMENTAL HEALTH, INC.
ASBESTOS FIBER COUNT WORKSHEET

DATE: 9/17/00	KEH PROJECT #: 21001-001 MICROSCOPE ID #: 1	KEH REP: Patrick McGurren ANALYST: Patrick McGurren

SAMPLE #	FIBER COUNT	F/N	F/N -B/NB / 100	FIBERS/MM²	SAMPLE VOL. (L)	LOQ (fibers/cc)	FIBERS/CC	COMMENTS
Field Blank B01	0	0/100	—	—	—	—	—	Field Blank
Field Blank B02	0	0/100	—	—	—	—	—	Field Blank
PM03	3.0	3.0/100	3.0/100/.00785	3.82	2828.25	0.001	LOQ	—
PM04	2.0	2.0/100	2.0/100/.00785	2.55	2115.00	0.001	< LOQ	—
PM05	2.5	2.5/100	2.5/100/.00785	3.18	2668.75	0.001	< LOQ	—
PM06	4.0	4.0/100	4.0/100/.00785	5.10	2466.75	0.001	LOQ	—
PM07	1.0	1.0/100	1.0/100/.00785	1.27	2472.50	0.001	< LOQ	—
PM08	2.0	2.0/100	2.0/100/.00785	2.55	2586.00	0.001	< LOQ	—
PM09	3.0	3.0/100	3.0/100/.00785	3.82	2376.00	0.001	LOQ	—
PM10	1.0	1.0/100	1.0/100/.00785	1.27	1255.00	0.002	< LOQ	—
Blind Recount	—	—	—	—	—	—	—	—

SAMPLING INFORMATION:

Effective Collection Area of Filter:	Microscope Field Area:	NIOSH 7400 Method A Rules ✓
✓ 385 mm², 25 mm filter	✓ 0.00785 mm²	
855 mm², 37 mm filter	other (list)	Other Method

ANALYTICAL INFORMATION:

MICROSCOPE ADJUSTMENTS: ✓ phase test ✓ micrometer ✓ adjust field iris ✓ adjust phase rings ✓ focus on samples

ANALYST INFORMATION:

DATE: 9/18/00 ANALYST: Patrick McGurren SIGNATURE: [signature]

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Project No. 805169
File Code No. 4.5.b.4.70
Doc No.

KEH97/FORMS/FIBERFRM

KOCH ENVIRONMENTAL HEALTH, INC.
ASBESTOS FIBER COUNT WORKSHEET

DATE: 9/17/00	KEH PROJECT #: 21001-001	KEH REP: Patrick McGurren
	MICROSCOPE ID #: 1	ANALYST: Patrick McGurren

SAMPLE #	FIBER COUNT	F/N	F/N -B/NB / 100	FIBERS/MM²	SAMPLE VOL. (L)	LOQ (fibers/cc)	FIBERS/CC	COMMENTS
Field Blank B01	0	0/100	—	—	—	—	—	Field Blank
Field Blank B02	0	0/100	—	—	—	—	—	Field Blank
PM11	2.0	2.0/100	2.0/100/.00785	2.55	1240.00	0.002	<LOQ	—
PM12	1.5	1.5/100	1.5/100/.00785	1.91	1342.00	0.002	<LOQ	—
PM13	2.5	2.5/100	2.5/100/.00785	3.18	1325.50	0.002	<LOQ	—
PM14	Ø	Ø/100	Ø	Ø	1314.50	0.002	<LOQ	—
PM15	1.0	1.0/100	1.0/100/.00785	1.27	1190.00	0.002	<LOQ	—
PM16	2.0	2.0/100	2.0/100/.00785	2.55	1170.00	0.002	<LOQ	—
A17	10.0	10.0/100	10.0/100/.00785	12.74	1240.20	0.002	0.004	—
—	—	—	—	—	—	—	—	—
Blind Recount	—	—	—	—	—	—	—	—

SAMPLING INFORMATION:

Effective Collection Area of Filter:	Microscope Field Area:	NIOSH 7400 Method A Rules ✓
✓ 385 mm², 25 mm filter	✓ 0.00785 mm²	
855 mm², 37 mm filter	other (list)	Other Method

ANALYTICAL INFORMATION:

MICROSCOPE ADJUSTMENTS: ✓ phase test ✓ micrometer ✓ adjust field iris ✓ adjust phase rings ✓ focus on samples

ANALYST INFORMATION:

DATE: 9/18/00 ANALYST: Patrick McGurren SIGNATURE: [signature]

URS COPY

Project No. 805169
File Code No. 4.5.6.4.71
Doc No.

KEH97/FORMS/FIBERFRM

KOCH ENVIRONMENTAL HEALTH, INC.
AIR CONTAMINANT SAMPLING FORM

DATE:	CLIENT:	PROJECT CONTACT:	PROJECT LOCATION:	SAMPLING REP:
9/18/00	PROJECT #: 01001-013	Chuck Show	W.R. Grace Vermiculite Plant Storage Shed WORK AREA: Libby, MT	Patrick McGowan ANALYSIS BY: Patrick McGowan

SAMPLE TYPE:	PUMP CALIBRATION:	FILTER TYPE:	TEM FILTER:	FILTER FCA:	MICROSCOPE FIELD AREA:
Asbestos ✓ (NIOSH 7400) Lead (NIOSH 7082) Other ____ Method: ____	Rotameter ✓ ID ____ Other: ____	___ 0.8 um 25 mm MCE ___ charcoal tubes ___ Silica Gel ___ Other .45 TEM	✓ MCE <0.45um 25mm ___ PC <0.45um 37mm Mfl. ____ Lot No. 13337	✓ 385 mm² ___ mm² ___ NA	✓ 0.00785 mm² ___ mm² ___ NA

SAMPLE NUMBER/ PUMP NUMBER	SAMPLE TYPE	SAMPLE DESCRIPTION, LOCATION	ACTIVITY	TIME (24 HOUR CLOCK) Start	Stop	Total	FLOW RATE (L/MIN) Start	Stop	Avg.	AIR VOLUME (L)	DETECT. LIMIT OR LOQ	FIBERS/ PER FIELD	CONCENTRATION ✓ F/cc ___ other ___ ppm ___ mg/M³
B01	Field Blank	—	—	—	—	—	—	—	—	—	—	1.0/100	Field Blank
B02	Field Blank	—	—	—	—	—	—	—	—	—	—	1.0/100	Field Blank
P03	EX	Inside Storage Shed building - worn by Cayetano Montoya	Storage shed power wash	0803	0838	35	1.30	1.30	1.30	45.50	0.060	8.9/100	0.075
P04	P	inside storage shed building - worn by Margarito Rivera	↓	0805	1700	535	1.30	1.00	1.15	615.25	0.004	28.5/100	0.022
P05	↓	Inside storage shed building - worn by Cayetano Montoya	↓	0838	1700	502	1.30	1.10	1.20	602.40	0.004	21.5/100	0.017
Blind Recount													

Key:

Sample Type:
- P = Personal
- Ex = Excursion
- IWA = Inside Work Area
- OWA = Outside Work Area
- BAK = Background
- A = Ambient Air
- HEX = HEPA Exhaust
- CL = Clearance Sample

Activity:
- PREP = Work Area Preparation
- REM - Removal
- GB - Glovebag
- FC - Final Cleaning
- BO = Bagout
- TD = Tear Down
- PP - Paint Prep

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Project No. 805169
File Code No. 4.5.6.2.67
Doc No. ____

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KOCH ENVIRONMENTAL HEALTH, INC.
7342 South Moore Court
Littleton, CO 80127
Phone: (303) 932-8484 FAX: (303) 932-8585

CONTRACTOR PERSONNEL AIR SAMPLING SUMMARY

Client: Ac & S **Project:** 01001-043	**Project Contact:** Chuck Shaw	**Location:** W.R. Grace Vermiculite Plant - Storage Shed Libby, MT	**KEH Rep:** Patrick McGarvey **Analysis By:** Patrick McGarvey

Date: 9/18/00	**Calibration:** ✓ Rotameter ____ ID ____ Other ____ ID	**Microscope Field Area:** ✓ 0.00785 sq mm ____ other ____ sq mm	**PCM Filter:** ✓ 0.8 um25mm Mft.____ ____ 0.8 um37mm Lot#____	**Other Media:** ____ Type Mft.____ ____ Type Mft.____

Name: Cayetano Montoya **SSN:** 645-22-6340	**Name:** Margarito Rivera **SSN:** 438-20-3756	**Name:** — **SSN:**	**Name:** — **SSN:**

Sample #	Minutes	Volume	F/cc	Sample #	Minutes	Volume	F/cc	Sample #	Minutes	Volume	F/cc	Sample #	Minutes	Volume	F/cc
	TOTAL				TOTAL				TOTAL				TOTAL		
P03	35	45.50	0.075	P04	535	615.25	0.022								
P05	502	602.40	0.017												

TWA: 0.021 f/cc

Comments:
2.625 + 8.534
11.159/537

TWA: 0.022 f/cc

Comments:
11.77/535

TWA: N/a

Comments:

TWA: N/a

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File Code No. 4.5.6.2.68
Doc No.

KOCH ENVIRONMENTAL HEALTH, INC.
ASBESTOS FIBER COUNT WORKSHEET

DATE: 9/18/00	KEH PROJECT #: 01001-043 MICROSCOPE ID #: 1	KEH REP: Patrick McGurren ANALYST: Patrick McGurren

SAMPLE #	FIBER COUNT	F/N	F/N -B/NB / 100	FIBERS/MM²	SAMPLE VOL. (L)	LOQ (fibers/cc)	FIBERS/CC	COMMENTS
Field Blank B01	1.0	1.0/100	—	—	—	—	—	Field Blank
Field Blank B02	1.0	1.0/100	—	—	—	—	—	Field Blank
P03	8.0	8.0/100	7.0/100/.00785	8.92	45.50	0.060	0.075	—
P04	28.5	28.5/100	27.5/100/.00785	35.03	615.25	0.004	0.022	—
P05	21.5	21.5/100	20.5/100/.00785	26.11	602.40	0.004	0.017	—
Blind Recount								

SAMPLING INFORMATION:

Effective Collection Area of Filter:	Microscope Field Area:	NIOSH 7400 Method A Rules ✓
✓ 385 mm², 25 mm filter	✓ 0.00785 mm²	
855 mm², 37 mm filter	other (list)	Other Method

ANALYTICAL INFORMATION:

MICROSCOPE ADJUSTMENTS: ✓ phase test ✓ micrometer ✓ adjust field iris ✓ adjust phase rings ✓ focus on samples

ANALYST INFORMATION:

DATE: 9/19/00 ANALYST: Patrick McGurren SIGNATURE: [signature]

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File Code No. 4.5.6.2.69
Doc No.

KEH97/FORMS/FIBERFRM

KOCH ENVIRONMENTAL HEALTH, INC.
AIR CONTAMINANT SAMPLING FORM

DATE:	CLIENT:	PROJECT CONTACT:	PROJECT LOCATION:	SAMPLING REP:
7/18/00	URS Radian PROJECT #: 21001-001	Tim Grish	WR Grace Vermiculite Plant WORK AREA: Libby, MT	Patrick McGovern ANALYSIS BY: Patrick McGovern

SAMPLE TYPE:	PUMP CALIBRATION:	FILTER TYPE:	TEM FILTER:	FILTER FCA:	MICROSCOPE FIELD AREA:
Asbestos ☑ (NIOSH 7400) Lead ☐ (NIOSH 7082) Other ☐ _____ Method: _____	Rotameter ☑ ID _____ Other: _____	___ 0.8 um 25 mm MCE ___ charcoal tubes ___ Silica Gel ___ Other .45 TEM	✓ MCE <0.45um 25mm ___ PC <0.45um 37mm Mfr. _____ Lot No. 1337	✓ 385 mm² ___ mm² ___ NA	✓ 0.00785 mm² ___ mm² ___ NA

SAMPLE NUMBER/ PUMP NUMBER	SAMPLE TYPE	SAMPLE DESCRIPTION, LOCATION	ACTIVITY	TIME (24 HOUR CLOCK) Start	Stop	Total	FLOW RATE (L/MIN) Start	Stop	Avg.	AIR VOLUME (L)	DETECT. LIMIT OR LOQ	FIBERS/ PER FIELD	CONCENTRATION ✓ F/cc ___ other ___ ppm ___ mg/M³
B01	Field Blank	—	—	—	—	—	—	—	—	—	—	1.0/100	Field Blank
B02	Field Blank	—	—	—	—	—	—	—	—	—	—	1.0/100	Field Blank
P403/A-09	Perimeter	Location #1 - North of Pole Barn - on perimeter	—	0730	1625	535	6.00	6.00	6.00	3210.00	0.001	9.0/100	0.001
P404/A-87	↓	Location #2 - NW of Planer Building - on perimeter	—	0740	1632	532	5.00	5.00	5.00	2660.00	0.001	2.0/100	< LOQ
P405/A-23		Location #3 - West of Planer building - on perimeter	—	1744	1640	536	5.00	5.00	5.00	2680.00	0.001	1.0/100	< LOQ
P406/A-24		Location #4 - SW of Planer building - on perimeter	—	0810	1649	519	6.00	6.00	6.00	3114.00	0.001	5.0/100	LOQ
P407/A-25		Location #5 - South of warehouse building - on perimeter	—	0816	1656	520	6.00	5.50	5.75	2990.00	0.001	4.0/100	< LOQ
P408/A-1		Location #6 - NE of Lumber storage building - on perimeter	—	0818	1703	525	5.00	5.50	5.25	2756.25	0.001	4.0/100	LOQ
P409/A-27	↓	Location #7 - NE corner of property - on stop sign Highway #37	—	0821	1707	526	5.50	5.50	5.50	2893.00	0.001	2.5/100	< LOQ
410/305	OWA	Inside storage shed clean room decon	storage shed power wash	0800	1717	557	1.90	1.90	1.90	1058.30	0.003	8.0/100	0.003
Blind Recount	—	—	—	—	—	—	—	—	—	—	—	—	—

Key:

Sample Type:
- P = Personal
- Ex = Excursion
- IWA = Inside Work Area
- OWA = Outside Work Area
- BAK = Background
- A = Ambient Air
- HEX = HEPA Exhaust
- CL = Clearance Sample

Activity:
- PREP = Work Area Preparation
- REM - Removal
- GB - Glovebag
- FC - Final Cleaning
- BO = Bagout
- TD = Tear Down
- PP - Paint Prep

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Project No. 805169
File Code No. 4.5.6.4.72
Doc No. _____

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KOCH ENVIRONMENTAL HEALTH, INC.
AIR CONTAMINANT SAMPLING FORM

DATE:	CLIENT: URS Radian	PROJECT CONTACT:	PROJECT LOCATION:	SAMPLING REP:
9/18/00	PROJECT #: 21001-001	Tim Gish	WR Grace Vermiculite Plant - storage shed WORK AREA: Libby, MT	Patrick McGurren ANALYSIS BY: Patrick McGurren

SAMPLE TYPE:	PUMP CALIBRATION:	FILTER TYPE:	TEM FILTER:	FILTER FCA:	MICROSCOPE FIELD AREA:
Asbestos ☑ (NIOSH 7400) Lead ☐ (NIOSH 7082) Other ☐ _____ Method: _____	Rotameter ☑ ID _____ Other: _____	___ 0.8 um 25 mm MCE ___ charcoal tubes ___ Silica Gel ___ Other .45 TEM	✓ MCE <0.45um 25mm ___ PC <0.45um 37mm Mft. _____ Lot No. 1337	✓ 385 mm² _____ mm² ___ NA	✓ 0.00785 mm² _____ mm² ___ NA

SAMPLE NUMBER/ PUMP NUMBER	SAMPLE TYPE	SAMPLE DESCRIPTION, LOCATION	ACTIVITY	TIME (24 HOUR CLOCK) Start	Stop	Total	FLOW RATE (L/MIN) Start	Stop	Avg.	AIR VOLUME (L)	DETECT. LIMIT OR LOQ	FIBERS/ PER FIELD	CONCENTRATION ✓ F/cc ___ other ___ ppm ___ mg/M³
B01	Field Blank	—	—	—	—	—	—	—	—	—	—	1.0/100	Field Blank
B02	Field Blank	—	—	—	—	—	—	—	—	—	—	1.0/100	Field Blank
411	OWA	Southeast of Pole Barn & North of Storage shed	Storage shed power wash	0841	1619	458	5.00 ~~4.58~~	5.00	5.00	2290.00	0.001		
Blind Recount													

Key:

Sample Type:			Activity:		
	P = Personal	BAK = Background		PREP = Work Area Preparation	BO = Bagout
	Ex = Excursion	A = Ambient Air		REM - Removal	TD = Tear Down
	IWA = Inside Work Area	HEX = HEPA Exhaust		GB - Glovebag	PP - Paint Prep
	OWA = Outside Work Area	CL = Clearance Sample		FC - Final Cleaning	

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Project No. 805169
File Code No. 4.5.b.4.73
Doc No. _____

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KOCH ENVIRONMENTAL HEALTH, INC.
ASBESTOS FIBER COUNT WORKSHEET

DATE: 9/18/00	KEH PROJECT #: 21001-001	KEH REP: Patrick McGurren
	MICROSCOPE ID #: 1	ANALYST: Patrick McGurren

SAMPLE #	FIBER COUNT	F/N	F/N -B/NB 100	FIBERS/MM²	SAMPLE VOL. (L)	LOQ (fibers/cc)	FIBERS/CC	COMMENTS
Field Blank B01	1.0	1.0/100	—	—	—	—	—	Field Blank
Field Blank B02	1.0	1.0/100	—	—	—	—	—	Field Blank
PM03	9.0	9.0/100	8.0/100/.00785	10.19	3210.00	0.001	~~LOQ~~ 0.001	—
PM04	2.0	2.0/100	1.0/100/.00785	1.27	2660.00	0.001	<LOQ	—
PM05	1.0	1.0/100	0/100/.00785	0	2680.00	0.001	<LOQ	—
PM06	5.0	5.0/100	4.0/100/.00785	5.10	3114.00	0.001	LOQ	—
PM07	4.0	4.0/100	3.0/100/.00785	3.82	2990.00	0.001	<LOQ	—
PM08	4.0	4.0/100	3.0/100/.00785	3.82	2756.25	0.001	LOQ	—
PM09	2.5	2.5/100	1.5/100/.00785	1.91	2893.00	0.001	<LOQ	—
A10	8.0	8.0/100	7.0/100/.00785	8.92	1058.30	0.003	~~LOQ~~ 0.003	—
Blind Recount	—	—	—	—	—	—	—	—

SAMPLING INFORMATION:

Effective Collection Area of Filter:	Microscope Field Area:	NIOSH 7400 Method A Rules ✓
✓ 385 mm², 25 mm filter	✓ 0.00785 mm²	
855 mm², 37 mm filter	other (list)	Other Method

ANALYTICAL INFORMATION:

MICROSCOPE ADJUSTMENTS: ✓ phase test ✓ micrometer ✓ adjust field iris ✓ adjust phase rings ✓ focus on samples

ANALYST INFORMATION:

DATE: 9/19/00 ANALYST: Patrick McGurren SIGNATURE: Patrick McGurren

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File Code No. 4.5.b.4.74
Doc No.

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KOCH ENVIRONMENTAL HEALTH, INC.
ASBESTOS FIBER COUNT WORKSHEET

DATE: 9/18/00	KEH PROJECT #: 21001-001	KEH REP: Patrick McGurren
	MICROSCOPE ID #: 1	ANALYST: Patrick McGurren

SAMPLE #	FIBER COUNT	F/N	F/N -B/NB / 100	FIBERS/MM²	SAMPLE VOL. (L)	LOQ (fibers/cc)	FIBERS/CC	COMMENTS
Field Blank B01	1.0	1.0/100	—	—	—	—	—	Field Blank
Field Blank B02	1.0	1.0/100	—	—	—	—	—	Field Blank
A11	4.5	4.5/100	35/100/.00785	4.46	2290.00	0.001	LOQ	—
Blind Recount								

SAMPLING INFORMATION:

Effective Collection Area of Filter:	Microscope Field Area:	NIOSH 7400 Method A Rules ✓
✓ 385 mm², 25 mm filter	✓ 0.00785 mm²	
855 mm², 37 mm filter	other (list)	Other Method

ANALYTICAL INFORMATION:

MICROSCOPE ADJUSTMENTS: ✓ phase test ✓ micrometer ✓ adjust field iris ✓ adjust phase rings ✓ focus on samples

ANALYST INFORMATION:

DATE: 9/19/00 ANALYST: Patrick McGurren SIGNATURE: [signature]

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Doc No.

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KOCH ENVIRONMENTAL HEALTH, INC.
AIR CONTAMINANT SAMPLING FORM

DATE:	CLIENT:	PROJECT CONTACT:	PROJECT LOCATION:	SAMPLING REP:
9/19/00	ACES PROJECT #: 01001-001	Chuck Shaw	W.R. Grace Vermiculite Plant - Storage shed WORK AREA: Libby, MT	Patrick McGuirk ANALYSIS BY: Patrick McGuirk

SAMPLE TYPE:	PUMP CALIBRATION:	FILTER TYPE:	TEM FILTER:	FILTER FCA:	MICROSCOPE FIELD AREA:
Asbestos ☑ (NIOSH 7400) Lead ☐ (NIOSH 7082) Other ☐ _____ Method: _____	Rotameter ☑ ID _____ Other: _____	___ 0.8 um 25 mm MCE ___ charcoal tubes ___ Silica Gel ___ Other .45 TEM	✓ MCE <0.45um 25mm ___ PC <0.45um 37mm Mfr. _____ Lot No. _____	✓ 385 mm² _____ mm² ___ NA	✓ 0.00785 mm² _____ mm² ___ NA

SAMPLE NUMBER/ PUMP NUMBER	SAMPLE TYPE	SAMPLE DESCRIPTION, LOCATION	ACTIVITY	TIME (24 HOUR CLOCK) Start	Stop	Total	FLOW RATE (L/MIN) Start	Stop	Avg.	AIR VOLUME (L)	DETECT. LIMIT OR LOQ	FIBERS/ PER FIELD	CONCENTRATION ✓ F/cc ___ other ___ ppm ___ mg/M³
B01	Field Blank	—	—	—	—	—	—	—	—	—	—	0/100	Field Blank
B02	Field Blank	—	—	—	—	—	—	—	—	—	—	0/100	Field Blank
P03	P	On tractor - work by Fernando Suarez	Moving ~~out~~ lumber	1516	1916	240	2.0	2.0	2.0	480.00	0.006	31.0/100	0.032
P04	↓	Inside Storage shed - laying poly. Guillermo Martinez	↓	1515	1915	240	2.0	2.0	2.0	480.00	0.006	19.0/100	0.019
P05	EX	Outside storage shed - cleaning up outside Guillermo ~~[illegible]~~ property	↓	1915	1945	30	2.0	2.0	2.0	60.00	0.045	11.0/100	0.090
Blind Recount													

Key:

Sample Type:			Activity:		
	P = Personal	BAK = Background		PREP = Work Area Preparation	BO = Bagout
	Ex = Excursion	A = Ambient Air		REM - Removal	TD = Tear Down
	IWA = Inside Work Area	HEX = HEPA Exhaust		GB - Glovebag	PP - Paint Prep
	OWA = Outside Work Area	CL = Clearance Sample		FC - Final Cleaning	

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Project No. 805169
File Code No. 4.5.6.2.70
Doc No. _____

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KOCH ENVIRONMENTAL HEALTH, INC.
7342 South Moore Court
Littleton, CO 80127
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Project No. 805169
File Code No. 4.5.1.2.72
Doc No.

CONTRACTOR PERSONNEL AIR SAMPLING SUMMARY

Client: AC&S **Project:** 01001-043	**Project Contact:** Chuck Shaw	**Location:** WR Grace Vermiculite Plant-Storage shed Libby, MT	**KEH Rep:** Patrick McGinnis **Analysis By:** Patrick McGinnis

Date: 9/19/00	**Calibration:** ✓ Rotameter ____ ID ____ Other ____ ID	**Microscope Field Area:** ✓ 0.00785 sq mm ____ other ____ sq mm	**PCM Filter:** ✓ 0.8 um25mm Mft.____ ____ 0.8 um37mm Lot#____	**Other Media:** ____ Type Mft.____ ____ Type Mft.____

Name: Fernando Juarez **SSN:** 619-34-6943	**Name:** Guillermo Martinez **SSN:** 627-09-2411	**Name:** — **SSN:**	**Name:** — **SSN:**

TOTAL				TOTAL				TOTAL				TOTAL			
Sample #	Minutes	Volume	F/cc	Sample #	Minutes	Volume	F/cc	Sample #	Minutes	Volume	F/cc	Sample #	Minutes	Volume	F/cc
P03	240	480.00	0.032	P04	240	480.00	0.019								
				P05	30	60.00	0.090								

TWA: 0.016 f/cc TWA: 0.015 f/cc TWA: N/a TWA: N/a

Comments: 7.68/480 Comments: 4.56+ 2.7/480 Comments: Comments

7.26/480

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Project No. 805169
File Code No. 4.5.6.2.73
Doc No.

KOCH ENVIRONMENTAL HEALTH, INC.
ASBESTOS FIBER COUNT WORKSHEET

DATE: 9/19/00

KEH PROJECT #: 21001-001

MICROSCOPE ID #: 1

KEH REP: Patrick McGuire

ANALYST: Patrick McGuire

SAMPLE #	FIBER COUNT	F/N	F/N -B/NB / 100	FIBERS/MM²	SAMPLE VOL. (L)	LOQ (fibers/cc)	FIBERS/CC	COMMENTS
Field Blank B01	0	0/100	—	—	—	—	—	Field Blank
Field Blank B02	0	0/100	—	—	—	—	—	Field Blank
P03	31.0	31.0/100	31.0/100/.00785	39.49	480.00	0.006	0.032	—
P04	19.0	19.0/100	19.0/100/.00785	24.204	480.00	0.006	0.019	—
P05	11.0	11.0/100	11.0/100/.00785	14.01	60.00	0.045	0.090	—
Blind Recount								

SAMPLING INFORMATION:

Effective Collection Area of Filter:
✓ 385 mm², 25 mm filter
855 mm², 37 mm filter

Microscope Field Area:
✓ 0.00785 mm²
other (list)

NIOSH 7400 Method A Rules ✓
Other Method

ANALYTICAL INFORMATION:

MICROSCOPE ADJUSTMENTS: ✓ phase test ✓ micrometer ✓ adjust field iris ✓ adjust phase rings ✓ focus on samples

ANALYST INFORMATION:

DATE: 9/20/00 ANALYST: Patrick McGuire SIGNATURE:

KOCH ENVIRONMENTAL HEALTH, INC.
AIR CONTAMINANT SAMPLING FORM

DATE:	CLIENT:	PROJECT CONTACT:	PROJECT LOCATION:	SAMPLING REP:
9/19/00	PROJECT #: Z1001-001	Tim Gish	W.R. Grace Vermiculite Plant - Storage Shed WORK AREA: Libby, MT	Patrick McGowan ANALYSIS BY: Patrick McGowan

SAMPLE TYPE:	PUMP CALIBRATION:	FILTER TYPE:	TEM FILTER:	FILTER FCA:	MICROSCOPE FIELD AREA:
Asbestos ☑ (NIOSH 7400) Lead ☐ (NIOSH 7082) Other ☐ _____ Method: _____	Rotameter ☑ ID _____ Other: _____	___ 0.8 um 25 mm MCE ___ charcoal tubes ___ Silica Gel ___ Other 45 TEM	✓ MCE <0.45um 25mm ___ PC <0.45um 37mm Mft. _____ Lot No. _____	✓ 385 mm² _____ mm² ___ NA	✓ 0.00785 mm² _____ mm² ___ NA

SAMPLE NUMBER/ PUMP NUMBER	SAMPLE TYPE	SAMPLE DESCRIPTION, LOCATION	ACTIVITY	TIME (24 HOUR CLOCK) Start	Stop	Total	FLOW RATE (L/MIN) Start	Stop	Avg.	AIR VOLUME (L)	DETECT. LIMIT OR LOQ	FIBERS/ PER FIELD	CONCENTRATION ✓ F/cc ___ other ___ ppm ___ mg/M³
B01	Field Blank	—	—	—	—	—	—	—	—	—	—	0/100	Field Blank
B02	Field Blank	—	—	—	—	—	—	—	—	—	—	0/100	Field Blank
● PM03/A-09	Perimeter	Location #1 - North of Pole Barn - on perimeter	Laying down poly in storage shed	1330	1717	227	7.00	6.50	6.75	1532.25	0.002	4.0/100	< LOQ
PM04/A-87	↓	Location #2 - NW of Planer building - on perimeter	↓	1335	1920	345	5.00	5.50	5.25	1811.25	0.001	3.5/100	LOQ
PM05/A-23	↓	Location #3 - West of Planer building - on perimeter	↓	1339	1925	346	6.00	6.00	6.00	2076.00	0.001	3.0/100	LOQ
PM06/~~A-27~~ A-1	↓	Location #4 - SW of Planer building - on perimeter	↓	1344	1933	349	6.00	6.00	6.00	2094.00	0.001	3.0/100	LOQ
* PM07/A-25	↓	Location #5 - South of warehouse building - on perimeter	↓	1356	no power 1938	Pin ~~350~~	6.00	no power	V	O	I	D	VOID due to power interruption
PM08/A-24	↓	Location #6 - NE of lumber storage building - on perimeter	↓	1404	1954	350	6.00	6.00	6.00	2100.00	0.001	3.5/100	LOQ
PM09/A-27	↓	Location #7 - NE corner of property - on stop sign Highway #37	↓	1411	1959	348	6.00	6.00	6.00	2088.00	0.001	4.0/100	LOQ
A10/	OWA	Southeast of Pole Barn & North of storage Shed	↓	1350	1929	339	5.00	5.00	5.00	1695.00	0.002	7.0/100	0.002
Blind Recount	—	—	—	—	—	—	—	—	—	—	—	—	—

* Power was pulled approximately one hour prior to collecting samples. No power to pump

Key:

Sample Type:			Activity:		
	P = Personal	BAK = Background		PREP = Work Area Preparation	BO = Bagout
	Ex = Excursion	A = Ambient Air		REM - Removal	TD = Tear Down
	IWA = Inside Work Area	HEX = HEPA Exhaust		GB - Glovebag	PP - Paint Prep
	OWA = Outside Work Area	CL = Clearance Sample		FC - Final Cleaning	

● Sample was pulled early due to water truck operating in the area.

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Project No. 805169
File Code No. 4.5.6.4.27
Doc No.

KOCH ENVIRONMENTAL HEALTH, INC.
ASBESTOS FIBER COUNT WORKSHEET

DATE: 9/19/00

KEH PROJECT #: 21001-001

MICROSCOPE ID #: 1

KEH REP: Patrick McGuire

ANALYST: Patrick McGuire

SAMPLE #	FIBER COUNT	F/N	F/N -B/NB / 100	FIBERS/MM²	SAMPLE VOL. (L)	LOQ (fibers/cc)	FIBERS/CC	COMMENTS
Field Blank B01	0	0/100	—	—	—	—	—	Field Blank
Field Blank B02	0	0/100	—	—	—	—	—	Field Blank
PM03	4.0	4.0/100	4.0/100/.00785	5.10	1532.25	0.002	<LOQ	—
PM04	3.5	3.5/100	3.5/100/.00785	4.46	1811.25	0.001	LOQ	—
PM05	3.0	3.0/100	3.0/100/.00785	3.82	2076.00	0.001	LOQ	—
PM06	3.0	3.0/100	3.0/100/.00785	3.82	2094.00	0.001	LOQ	—
PM07	VOID	—	—	—	—	—	—	VOID
PM08	3.5	3.5/100	3.5/100/.00785	4.46	2100.00	0.001	LOQ	—
PM09	4.0	4.0/100	4.0/100/.00785	5.10	2088.00	0.001	LOQ	—
A10	7.0	7.0/100	7.0/100/.00785	8.92	1695.00	0.002	(PM) ~~LOQ~~ 0.002	—
Blind Recount	—	—	—	—	—	—	—	—

SAMPLING INFORMATION:

Effective Collection Area of Filter:
✓ 385 mm², 25 mm filter
855 mm², 37 mm filter

Microscope Field Area:
✓ 0.00785 mm²
other (list)

NIOSH 7400 Method A Rules ✓
Other Method

ANALYTICAL INFORMATION:

MICROSCOPE ADJUSTMENTS: ✓ phase test ✓ micrometer ✓ adjust field iris ✓ adjust phase rings ✓ focus on samples

ANALYST INFORMATION:

DATE: 9/20/00 ANALYST: Patrick McGuire SIGNATURE: [signature]

KOCH ENVIRONMENTAL HEALTH, INC.
AIR CONTAMINANT SAMPLING FORM

DATE:	CLIENT:	PROJECT CONTACT:	PROJECT LOCATION:	SAMPLING REP:
9/20/00	AC&S PROJECT #: 01001-043	Chuck Shaw	W.R. Grace Vermiculite Plant - Warehouse WORK AREA: Libby, MT	Patrick McGuire ANALYSIS BY: Patrick McGuire

SAMPLE TYPE:	PUMP CALIBRATION:	FILTER TYPE:	TEM FILTER:	FILTER FCA:	MICROSCOPE FIELD AREA:
Asbestos ☑ (NIOSH 7400) Lead ☐ (NIOSH 7082) Other ☐ _____ Method: _____	Rotameter ☑ ID _____ Other: _____	___ 0.8 um 25 mm MCE ___ charcoal tubes ___ Silica Gel ___ Other .45 TEM	✓ MCE <0.45um 25mm ___ PC <0.45um 37mm Mfr. _____ Lot No. 1337	✓ 385 mm² _____ mm² ___ NA	✓ 0.00785 mm² _____ mm² ___ NA

SAMPLE NUMBER/ PUMP NUMBER	SAMPLE TYPE	SAMPLE DESCRIPTION, LOCATION	ACTIVITY	TIME (24 HOUR CLOCK) Start	Stop	Total	FLOW RATE (L/MIN) Start	Stop	Avg.	AIR VOLUME (L)	DETECT. LIMIT OR LOQ	FIBERS/ PER FIELD	CONCENTRATION ✓ F/cc ___ other ___ ppm ___ mg/M³
B01	Field Blank	—	—	—	—	—	—	—	—	—	—	0/100	Field Blank
B02	Field Blank	—	—	—	—	—	—	—	—	—	—	0/100	Field Blank
P03	EX	Inside Warehouse - worn by - Margarito Rivera	Cleaning material	0906	0936	30	2.00	2.00	2.00	60.00	0.045	94.0/100	0.768
P04	P	Inside Warehouse - worn by Cayetano Montoya	↓	0907	1700	473	2.00	2.00	2.00	946.00	0.003	45.5/100	0.024
P05	P	Inside Warehouse worn by - Margarito Rivera	↓	0936	1700	444	2.00	2.00	2.00	888.00	0.003	33.0/100	0.018
Blind Recount													

Key:

Sample Type:
- P = Personal
- Ex = Excursion
- IWA = Inside Work Area
- OWA = Outside Work Area
- BAK = Background
- A = Ambient Air
- HEX = HEPA Exhaust
- CL = Clearance Sample

Activity:
- PREP = Work Area Preparation
- REM - Removal
- GB - Glovebag
- FC - Final Cleaning
- BO = Bagout
- TD = Tear Down
- PP - Paint Prep

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KOCH ENVIRONMENTAL HEALTH, INC.
7342 South Moore Court
Littleton, CO 80127
Phone: (303) 932-8484 FAX: (303) 932-8585

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Project No. 50569
File Code No. 4.5.6.2.74
Doc No.

CONTRACTOR PERSONNEL AIR SAMPLING SUMMARY

Client: AC&S **Project:** 01001-043	**Project Contact:** Chuck Shaw	**Location:** W.R. Grace Vermiculite Plant	**KEH Rep:** Patrick McGurren **Analysis By:** Patrick McGurren

Date: 9/20/00	**Calibration:** ✓ Rotameter ____ ID ____ Other ____ ID	**Microscope Field Area:** ✓ 0.00785 sq mm ____ other ____ sq mm	**PCM Filter:** ✓ 0.8 um25mm Mft.____ ____ 0.8 um37mm Lot#____	**Other Media:** ____ Type Mft.____ ____ Type Mft.____

Name: Margarito Rivera **SSN:** 438-20-3756	**Name:** Cayetano Montoya **SSN:** 645-22-6340	**Name:** — **SSN:**	**Name:** — **SSN:**

TOTAL				TOTAL				TOTAL				TOTAL			
Sample #	Minutes	Volume	F/cc	Sample #	Minutes	Volume	F/cc	Sample #	Minutes	Volume	F/cc	Sample #	Minutes	Volume	F/cc
P03	30	60	0.768	P04	473	946	0.024								
P05	444	888	0.018												

TWA: _____ TWA: _____ TWA: n/a TWA: n/a

Comments: Comments: Comments: Comments

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File Code No. 4.5.6.2.75
Doc No.

KOCH ENVIRONMENTAL HEALTH, INC.
ASBESTOS FIBER COUNT WORKSHEET

DATE: 9/20/00	KEH PROJECT #: Q1001-043 MICROSCOPE ID #: 1	KEH REP: Patrick McGurren ANALYST: Patrick McGurren

SAMPLE #	FIBER COUNT	F/N	F/N -B/NB / 100	FIBERS/MM²	SAMPLE VOL. (L)	LOQ (fibers/cc)	FIBERS/CC	COMMENTS
Field Blank B01	Ø	0/100	—	—	—	—	—	Field Blank
Field Blank B02	Ø	0/100	—	—	—	—	—	Field Blank
P03	94.0	94.0/100	94.0/100/.00785	119.75	60.00	0.045	0.768	—
P04	45.5	45.5/100	45.5/100/.00785	57.96	946.00	0.003	0.024	—
P05	33.0	33.0/100	33.0/100/.00785	42.04	888.00	0.003	0.018	—
Blind Recount								

SAMPLING INFORMATION:

Effective Collection Area of Filter:	Microscope Field Area:	NIOSH 7400 Method A Rules ✓
✓ 385 mm², 25 mm filter	✓ 0.00785 mm²	
855 mm², 37 mm filter	other (list)	Other Method

ANALYTICAL INFORMATION:

MICROSCOPE ADJUSTMENTS: ✓ phase test ✓ micrometer ✓ adjust field iris ✓ adjust phase rings ✓ focus on samples

ANALYST INFORMATION:

DATE: 9/21/00 ANALYST: Patrick McGurren SIGNATURE: [signature]

KEH97/FORMS/FIBERFRM

KOCH ENVIRONMENTAL HEALTH, INC.
AIR CONTAMINANT SAMPLING FORM

DATE:	CLIENT:	PROJECT CONTACT:	PROJECT LOCATION:	SAMPLING REP:
9/20/00	URS Radian PROJECT #: Z1001-001	Tim Gish	W.R. Grace Vermiculite Plant - Storage Shed WORK AREA: Libby, MT	Patrick McGowan ANALYSIS BY: Patrick McGowan

SAMPLE TYPE:	PUMP CALIBRATION:	FILTER TYPE:	TEM FILTER:	FILTER FCA:	MICROSCOPE FIELD AREA:
Asbestos ☑ (NIOSH 7400) Lead ☐ (NIOSH 7082) Other ☐ _____ Method: _____	Rotameter ☑ ID _____ Other: _____	___ 0.8 um 25 mm MCE ___ charcoal tubes ___ Silica Gel ___ Other .45 TEM	✓ MCE <0.45um 25mm ___ PC <0.45um 37mm Mfl. _____ Lot No. 1337	✓ 385 mm² _____ mm² ___ NA	✓ 0.00785 mm² _____ mm² ___ NA

SAMPLE NUMBER/ PUMP NUMBER	SAMPLE TYPE	SAMPLE DESCRIPTION, LOCATION	ACTIVITY	TIME (24 HOUR CLOCK) Start	Stop	Total	FLOW RATE (L/MIN) Start	Stop	Avg.	AIR VOLUME (L)	DETECT. LIMIT OR LOQ	FIBERS/ PER FIELD	CONCENTRATION ✓ F/cc ___ other ___ ppm ___ mg/M³
B01	Field Blank	—	—	—	—	—	—	—	—	—	—		Field Blank
B02	Field Blank	—	—	—	—	—	—	—	—	—	—		Field Blank
* PM03/A-27	Perimeter	Location #1 - North of Pole Barn - on perimeter		0830	1344	314	5.50	5.50	5.50	1727.00	0.002	5.0/100	< LOQ
PM04/AV03	↓	Location #2 - NW of Planer building - on perimeter		0839	1352	313	5.00	5.00	5.00	1565.00	0.002	3.0/100	< LOQ
PM05/A-23		Location #3 - west of Planer building - on perimeter		0844	1356	312	5.00	5.00	5.00	1560.00	0.002	3.5/100	< LOQ
PM06/		Location #4 - SW of Planer building - on perimeter		0853	1402	309	5.00	5.00	5.00	1545.00	0.002	2.5/100	< LOQ
• PM07/		Location #5 - South of warehouse building - on perimeter		0930	1408	269	5.00	5.00	5.00	1345.00	0.002	1.0/100	< LOQ
PM08/A-1		Location #6 - NE of Lumber storage building on perimeter		0910	1414	304	5.00	5.00	5.00	1520.00	0.002	1.0/100	< LOQ
PM09/AV10		Location #7 - NE corner of property - on stop sign Highway #37		0915	1426	311	5.00	5.50	5.25	1632.75	0.002	6.0/100	0.002
A10/A-89	OWA	SE of Pole Barn & North of storage shed		0950	1400	310	5.00	5.00	5.00	1550.00	0.002	5.0/100	LOQ
Blind Recount	—	—	—	—	—	—	—	—	—	—	—	—	

* Samples pulled early due to rain.

Key:

Sample Type:			Activity:		
	P = Personal	BAK = Background		PREP = Work Area Preparation	BO = Bagout
	Ex = Excursion	A = Ambient Air		REM - Removal	TD = Tear Down
	IWA = Inside Work Area	HEX = HEPA Exhaust		GB - Glovebag	PP - Paint Prep
	OWA = Outside Work Area	CL = Clearance Sample		FC - Final Cleaning	

• Took a while to get power to sample location.

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KOCH ENVIRONMENTAL HEALTH, INC.
ASBESTOS FIBER COUNT WORKSHEET

DATE: 9/20/00	KEH PROJECT #: 01001-043 MICROSCOPE ID #: 1	KEH REP: Patrick McGurren ANALYST: Patrick McGurren

SAMPLE #	FIBER COUNT	F/N	F/N -B/NB / 100	FIBERS/MM²	SAMPLE VOL. (L)	LOQ (fibers/cc)	FIBERS/CC	COMMENTS
Field Blank B01	Ø	—	—	—	—	—	—	Field Blank
Field Blank B02	Ø	—	—	—	—	—	—	Field Blank
PM03	5.0	5.0/100	5.0/100/.00785	6.37	1727.00	0.002	<LOQ	—
PM04	3.0	3.0/100	3.0/100/.00785	3.82	1565.00	0.002	<LOQ	—
PM05	3.5	3.5/100	3.5/100/.00785	4.46	1560.00	0.002	<LOQ	—
PM06	2.5	2.5/100	2.5/100/.00785	3.18	1545.00	0.002	<LOQ	—
PM07	1.0	1.0/100	1.0/100/.00785	1.27	1345.00	0.002	<LOQ	—
PM08	1.0	1.0/100	1.0/100/.00785	1.27	1520.00	0.002	<LOQ	—
PM09	6.0	6.0/100	6.0/100/.00785	7.64	1632.75	0.002	0.002	—
A10	5.0	5.0/100	5.0/100/.00785	6.37	1550.00	0.002	LOQ	
Blind Recount	—	—	—	—	—	—	—	—

SAMPLING INFORMATION:

Effective Collection Area of Filter:
✓ 385 mm², 25 mm filter
___ 855 mm², 37 mm filter

Microscope Field Area:
✓ 0.00785 mm²
___ other (list)

NIOSH 7400 Method A Rules ✓
Other Method ___

ANALYTICAL INFORMATION:

MICROSCOPE ADJUSTMENTS: ✓ phase test ✓ micrometer ✓ adjust field iris ✓ adjust phase rings ✓ focus on samples

ANALYST INFORMATION:

DATE: 9/21/00 ANALYST: Patrick McGurren SIGNATURE: [signature]

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Doc No. ___

KEH97/FORMS/FIBERFRM

KOCH ENVIRONMENTAL HEALTH, INC.
AIR CONTAMINANT SAMPLING FORM

DATE:	CLIENT:	PROJECT CONTACT:	PROJECT LOCATION:	SAMPLING REP:
9/21/00	Ac & S PROJECT #: 01001-043	Chuck Shaw	WR Grace Vermiculite Plant Warehouse building WORK AREA: Libby, MT	Patrick McGurren ANALYSIS BY: Patrick McGurren

SAMPLE TYPE:	PUMP CALIBRATION:	FILTER TYPE:	TEM FILTER:	FILTER FCA:	MICROSCOPE FIELD AREA:
Asbestos ☑ (NIOSH 7400) Lead ☐ (NIOSH 7082) Other ☐ _____ Method: _____	Rotameter ☑ ID _____ Other: _____	___ 0.8 um 25 mm MCE ___ charcoal tubes ___ Silica Gel ___ Other .45 TEM	✓ MCE <0.45um 25mm ___ PC <0.45um 37mm Mft. _____ Lot No. 1337	✓ 385 mm² _____ mm² ___ NA	✓ 0.00785 mm² _____ mm² ___ NA

SAMPLE NUMBER/ PUMP NUMBER	SAMPLE TYPE	SAMPLE DESCRIPTION, LOCATION	ACTIVITY	TIME (24 HOUR CLOCK) Start	Stop	Total	FLOW RATE (L/MIN) Start	Stop	Avg.	AIR VOLUME (L)	DETECT. LIMIT OR LOQ	FIBERS/ PER FIELD	CONCENTRATION ✓ F/cc ___ other ___ ppm ___ mg/M³
B01	Field Blank	—	—	—	—	—	—	—	—	—	—	0/100	Field Blank
B02	Field Blank	—	—	—	—	—	—	—	—	—	—	0/100	Field Blank
P03	P	Inside warehouse building worn by Jose G. Aguilar	Cleaning miscellaneous materials	1050	1410	200	2.00	2.00	2.00	400.00	0.007	98.00/100	0.120
P04	↓	Inside warehouse building worn by Guillermo Martinez	↓	1052	1656	364	2.00	2.00	2.00	728.00	0.004	—	particulate overload
P05	Ex	Inside warehouse building worn by Jose G. Aguilar	↓	1410	1440	30	2.00	2.00	2.00	60.00	0.045	44.50/100	0.364
P06	P	Inside warehouse building worn by Jose G. Aguilar	↓	1440	1655	135	2.00	2.00	2.00	270 ~~135.00~~ pm	0.020	51.00/100	0.093 ~~0.185~~ pm
Blind Recount													

Key:

Sample Type:
- P = Personal
- Ex = Excursion
- IWA = Inside Work Area
- OWA = Outside Work Area
- BAK = Background
- A = Ambient Air
- HEX = HEPA Exhaust
- CL = Clearance Sample

Activity:
- PREP = Work Area Preparation
- REM - Removal
- GB - Glovebag
- FC - Final Cleaning
- BO = Bagout
- TD = Tear Down
- PP - Paint Prep

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7342 South Moore Court
Littleton, CO 80127
Phone: (303) 932-8484 FAX: (303) 932-8585

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File Code No. 4.5.b.2.77
Doc No.

CONTRACTOR PERSONNEL AIR SAMPLING SUMMARY

Client: Ac & S **Project:** 01001-043	**Project Contact:** Chuck Shaw	**Location:** WR Grace Vermiculite Plant-warehouse building Libby, MT	**KEH Rep:** Patrick McGowen **Analysis By:** Patrick McGowen

Date: 9/21/00	**Calibration:** ✓ Rotameter ____ ID ____ Other ____ ID	**Microscope Field Area:** ✓ 0.00785 sq mm ____ other ____ sq mm	**PCM Filter:** ✓ 0.8 um25mm Mft.____ ____ 0.8 um37mm Lot#____	**Other Media:** ____ Type Mft.____ ____ Type Mft.____

Name: Jose G. Aguilar **SSN:** 456-99-8860	**Name:** Guillermo Martinez **SSN:** 622-09-2411	**Name:** — **SSN:**	**Name:** — **SSN:**

TOTAL				TOTAL				TOTAL				TOTAL			
Sample #	Minutes	Volume	F/cc	Sample #	Minutes	Volume	F/cc	Sample #	Minutes	Volume	F/cc	Sample #	Minutes	Volume	F/cc
P03	200	400	0.120	P04	Particulate overload										
P05	30	60	0.364												
P06	135	270	0.093												

TWA: 0.099 F/cc	TWA: n/a	TWA: n/a	TWA: n/a
Comments: 24+10.920+12.555/480 47.475/480	Comments: Particulate overload	Comments: —	Comments —

KOCH ENVIRONMENTAL HEALTH, INC.
ASBESTOS FIBER COUNT WORKSHEET

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Project No. 805169
File Code No. 4.5.6.2.78
Doc No.

DATE: 9/21/00

KEH PROJECT #: 01001-043

MICROSCOPE ID #: 1

KEH REP: Patrick McGurren

ANALYST: Patrick McGurren

SAMPLE #	FIBER COUNT	F/N	F/N - B/NB / 100	FIBERS/MM²	SAMPLE VOL. (L)	LOQ (fibers/cc)	FIBERS/CC	COMMENTS
Field Blank B01	Ø	0/100	—	—	—	—	—	Field Blank
Field Blank B02	Ø	0/100	—	—	—	—	—	Field Blank
P03	98.00	98.00/100	98.0/100/.00785	124.84	400.00	0.007	0.120	—
P04	particulate overload	—	—	—	728.00	0.004	—	Particulate overload
P05	44.50	44.5/100	44.5/100/.00785	56.69	60.00	0.045	0.364	—
P06	51.00	51.00/100	51.00/100/.00785	64.97	~~135.00~~ 270.00	0.020	~~0.188~~ 0.093	—
Blind Recount								

SAMPLING INFORMATION:

Effective Collection Area of Filter:
- ✓ 385 mm², 25 mm filter
- 855 mm², 37 mm filter

Microscope Field Area:
- ✓ 0.00785 mm²
- other (list)

NIOSH 7400 Method A Rules ✓

Other Method

ANALYTICAL INFORMATION:

MICROSCOPE ADJUSTMENTS: ✓ phase test ✓ micrometer ✓ adjust field iris ✓ adjust phase rings ✓ focus on samples

ANALYST INFORMATION:

DATE: 9/22/00

ANALYST: Patrick McGurren

SIGNATURE: Patrick McGurren

KOCH ENVIRONMENTAL HEALTH, INC.
AIR CONTAMINANT SAMPLING FORM

DATE:	CLIENT:	PROJECT CONTACT:	PROJECT LOCATION:	SAMPLING REP:
7/21/08	URS Radian PROJECT #: 21001-001	Tim Gish	WR Grace Vermiculite Plant WORK AREA: Libby, MT	Patrick McGovern ANALYSIS BY: Patrick McGovern

SAMPLE TYPE:	PUMP CALIBRATION:	FILTER TYPE:	TEM FILTER:	FILTER FCA:	MICROSCOPE FIELD AREA:
Asbestos ☑ (NIOSH 7400) Lead ☐ (NIOSH 7082) Other ☐ _____ Method: _____	Rotameter ✓ ID _____ Other: _____	___ 0.8 um 25 mm MCE ___ charcoal tubes ___ Silica Gel ___ Other .45 TEM	✓ MCE <0.45um 25mm ___ PC <0.45um 37mm Mft. _____ Lot No. 1337	✓ 385 mm² _____ mm² ___ NA	✓ 0.00785 mm² _____ mm² ___ NA

SAMPLE NUMBER/ PUMP NUMBER	SAMPLE TYPE	SAMPLE DESCRIPTION, LOCATION	ACTIVITY	TIME (24 HOUR CLOCK) Start	Stop	Total	FLOW RATE (L/MIN) Start	Stop	Avg.	AIR VOLUME (L)	DETECT. LIMIT OR LOQ	FIBERS/ PER FIELD	CONCENTRATION ✓ F/cc ___ other ___ ppm ___ mg/M³
BO1	Field Blank	—	—	—	—	—	—	—	—	—	—	0/100	Field Blank
BO2	Field Blank	—	—	—	—	—	—	—	—	—	—	0/100	Field Blank
PM03/A-27	Perimeter	Location #1 - North of Pole Barn - on perimeter	—	1007	1702	415	6.00	5.00	5.50	2282.50	0.001	0.5/100	< LOQ
PM04/A-10	↓	Location #2 - NW of Planer building - on perimeter	—	1028	1707	399	6.00	5.00	5.50	2194.50	0.001	3.0/100	LOQ
PM05/A-23	↓	Location #3 - West of Planer Building - on perimeter	—	1025	1710	405	6.00	5.00	5.50	2227.50	0.001	2.0/100	< LOQ
PM06/A-1	↓	Location #4 - SW of Planer building - on perimeter	—	1034	1715	401	5.00	5.00	5.00	2005.00	0.001	0/100	< LOQ
PM07	↓	Location #5 - South of Warehouse building on perimeter	—	1048	1722	394	5.50	5.00	5.25	2068.50	0.001	5.5/100	LOQ
PM08	↓	Location #6 - NE of Lumber storage building on perimeter	—	1103	1728	385	5.50	6.00	5.75	2213.75	0.001	1.5/100	< LOQ
PM09	↓	Location #7 - NE corner of property - on stop sign - Highway 37	—	1111	1732	381	5.00	5.00	5.00	1905.00	0.001	1.0/100	< LOQ
A10/A-89	OWA	SE of Pole Barn & North of storage shed	—	1039	1718	399	6.00	5.00	5.50	2194.50	0.001	1.0/100	< LOQ
Blind Recount	—	—	—	—	—	—	—	—	—	—	—	—	—

Key:

Sample Type:			Activity:		
	P = Personal	BAK = Background		PREP = Work Area Preparation	BO = Bagout
	Ex = Excursion	A = Ambient Air		REM - Removal	TD = Tear Down
	IWA = Inside Work Area	HEX = HEPA Exhaust		GB - Glovebag	PP - Paint Prep
	OWA = Outside Work Area	CL = Clearance Sample		FC - Final Cleaning	

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File Code No. 4,5,6,4,81
Doc No. _____

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KOCH ENVIRONMENTAL HEALTH, INC.
ASBESTOS FIBER COUNT WORKSHEET

DATE: 9/21/00	KEH PROJECT #: 21001-001 MICROSCOPE ID #: 1	KEH REP: Patrick McGurren ANALYST: Patrick McGurren

SAMPLE #	FIBER COUNT	F/N	F/N -B/NB / 100	FIBERS/MM²	SAMPLE VOL. (L)	LOQ (fibers/cc)	FIBERS/CC	COMMENTS
Field Blank B01	0	0/100	—	—	—	—	—	Field Blank
Field Blank B02	0	0/100	—	—	—	—	—	Field Blank
PM03	0.5	0.5/100	0.5/100/.00785	0.64	2282.50	0.001	<LOQ	—
PM04	3.0	3.0/100	3.0/100/.00785	3.82	2194.50	0.001	LOQ	—
PM05	2.0	2.0/100	2.0/100/.00785	2.55	2227.50	0.001	<LOQ	—
PM06	0	0/100	0/100/.00785	0	2005.00	0.001	<LOQ	—
PM07	5.5	5.5/100	5.5/100/.00785	7.01	2068.50	0.001	~~0.001~~ LOQ	—
PM08	1.5	1.5/100	1.5/100/.00785	1.91	2213.75	0.001	<LOQ	—
PM09	1.0	1.0/100	1.0/100/.00785	1.27	1905.00	0.001	<LOQ	—
A10	1.0	1.0/100	1.0/100/.00785	1.27	2194.50	0.001	<LOQ	—
Blind Recount	—	—	—	—	—	—	—	—

SAMPLING INFORMATION:

Effective Collection Area of Filter:	Microscope Field Area:	NIOSH 7400 Method A Rules ✓
✓ 385 mm², 25 mm filter	✓ 0.00785 mm²	
855 mm², 37 mm filter	other (list)	Other Method

ANALYTICAL INFORMATION:

MICROSCOPE ADJUSTMENTS: ✓ phase test ✓ micrometer ✓ adjust field iris ✓ adjust phase rings ✓ focus on samples

ANALYST INFORMATION:

DATE: 9/21/00 ANALYST: Patrick McGurren SIGNATURE: [signature]

Project No. 805169
File Code No. 4.5.6.4.82
Doc No.

KEH97/FORMS/FIBERFRM

KOCH ENVIRONMENTAL HEALTH, INC.
AIR CONTAMINANT SAMPLING FORM

DATE:	CLIENT:	PROJECT CONTACT:	PROJECT LOCATION:	SAMPLING REP:
9/21/00	URS Radian PROJECT #: Z1001-001	~~Tim Gish~~ Jim Stout	WR Grace Vermiculite Mine WORK AREA: Libby, MT	Patrick McGarren ANALYSIS BY: Patrick McGarren

SAMPLE TYPE:	PUMP CALIBRATION:	FILTER TYPE:	TEM FILTER:	FILTER FCA:	MICROSCOPE FIELD AREA:
Asbestos ☑ (NIOSH 7400) Lead ☐ (NIOSH 7082) Other ☐ _____ Method: _____	Rotameter ☑ ID _____ Other: _____	___ 0.8 um 25 mm MCE ___ charcoal tubes ___ Silica Gel ___ Other .45 TEM	✓ MCE <0.45um 25mm ___ PC <0.45um 37mm Mft. _____ Lot No. 1337	✓ 385 mm² _____ mm² ___ NA	✓ 0.00785 mm² _____ mm² ___ NA

SAMPLE NUMBER/ PUMP NUMBER	SAMPLE TYPE	SAMPLE DESCRIPTION, LOCATION	ACTIVITY	TIME (24 HOUR CLOCK) Start	Stop	Total	FLOW RATE (L/MIN) Start	Stop	Avg.	AIR VOLUME (L)	DETECT. LIMIT OR LOQ	FIBERS/ PER FIELD	CONCENTRATION ✓ F/cc ___ other ___ ppm ___ mg/M³
B01	Field Blank	—	—	—	—	—	—	—	—	—	—	0/100	Field Blank
B02	Field Blank	—	—	—	—	—	—	—	—	—	—	0/100	Field Blank
A03a		SOUTH OF DRILLING AREA - NEAR GLORY HOLE	SOIL DRILLING	0900	1613	433	1.50	0.75	1.13	489.29	0.006	1.0/100	< LOQ
P04a	P	~~SOUTH OF~~ DRILLING AREA - NEAR GLORY WORN BY - DAVE TLIFF	SOIL DRILLING	0910	1628	438	1.50	1.50	1.50	642.00	0.004	2.5/100	< LOQ
Blind Recount													

Key:

Sample Type:
- P = Personal
- Ex = Excursion
- IWA = Inside Work Area
- OWA = Outside Work Area
- BAK = Background
- A = Ambient Air
- HEX = HEPA Exhaust
- CL = Clearance Sample

Activity:
- PREP = Work Area Preparation
- REM - Removal
- GB - Glovebag
- FC - Final Cleaning
- BO = Bagout
- TD = Tear Down
- PP - Paint Prep

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File Code No. 4.5.6.4.83
Doc No. _____

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Project No. 805169
File Code No. 4.5.b.4.85
Doc No.

KOCH ENVIRONMENTAL HEALTH, INC.
ASBESTOS FIBER COUNT WORKSHEET

DATE: 9/21/00

KEH PROJECT #: 21001-001

MICROSCOPE ID #: 1

KEH REP: Patrick McGurran

ANALYST: Patrick McGurran

SAMPLE #	FIBER COUNT	F/N	F/N · B/NB / 100	FIBERS/MM²	SAMPLE VOL. (L)	LOQ (fibers/cc)	FIBERS/CC	COMMENTS
Field Blank B01	0	0/100	—	—	—	—	—	FIELD BLANK
Field Blank B02	0	0/100	—	—	—	—	—	FIELD BLANK
B03a	1.0	1.0/100	1.0/100/.00785	1.27	489.29	0.006	<LOQ	—
B04a	2.5	2.5/100	2.5/100/.00785	3.18	642.00	0.004	<LOQ	—
Blind Recount								

SAMPLING INFORMATION:

Effective Collection Area of Filter:
✓ 385 mm², 25 mm filter
855 mm², 37 mm filter

Microscope Field Area:
✓ 0.00785 mm²
other (list)

NIOSH 7400 Method A Rules ✓
Other Method

ANALYTICAL INFORMATION:

MICROSCOPE ADJUSTMENTS: ✓ phase test ✓ micrometer ✓ adjust field iris ✓ adjust phase rings ✓ focus on samples

ANALYST INFORMATION:

DATE: 9/21/00 ANALYST: Patrick McGurran SIGNATURE: [signature]