

## APPENDIX A

### Preliminary Meeting Questionnaire – Acute Pulmonary Response In Landscape Workers: Job Redesign

Participant number: \_\_\_\_\_

Name \_\_\_\_\_

Age \_\_\_\_\_

- 1)     \_\_\_\_\_ Male                    \_\_\_\_\_ Female
  
- 2)     Do you currently smoke cigarettes every or nearly every day?  
          \_\_\_\_\_ Yes → Proceed to question 5  
          \_\_\_\_\_ No
  
- 3)     Have you smoked cigarettes regularly in the past?  
          \_\_\_\_\_ Yes  
          \_\_\_\_\_ No → Proceed to question 7
  
- 4)     At what age did you quit smoking?  
          \_\_\_\_\_ Years of age
  
- 5)     At what age did you start smoking?  
          \_\_\_\_\_ Years of age
  
- 6)     How many cigarettes do/did you smoke per day?  
          \_\_\_\_\_ Cig/day
  
- 7)     Do you use any other kind of tobacco or inhaled substance (legal or illegal) regularly?  
          \_\_\_\_\_ Yes → Specify: ( ) Cigars/cigarillos  
  ( ) Pipe tobacco  
  ( ) Snuff/ chewing tobacco  
  ( ) Other inhaled substance  
          \_\_\_\_\_ No → Proceed to question 10
  
- 8)     At what age did you start to use this other type of tobacco or inhaled substance regularly?

\_\_\_\_\_ Years of age

9) How much/many do you consume?

Cigars/cigarillos \_\_\_\_\_ Number per day

Pipe tobacco \_\_\_\_\_ Packets per week

Snuff/chewing tobacco \_\_\_\_\_ Boxes per week

10) Have you previously used any other type of tobacco or inhaled substance regularly?

\_\_\_\_\_ Yes → Specify: ( ) Cigars/cigarillos  
( ) Pipe tobacco  
( ) Snuff/ chewing tobacco  
( ) Other inhaled substance

\_\_\_\_\_ No → Proceed to question 14

11) At what age did you quit?

\_\_\_\_\_ Years of age

12) At what age did you start to use this type of tobacco or inhaled substance?

\_\_\_\_\_ Years of age

13) How much/many did you consume?

Cigars/cigarillos \_\_\_\_\_ Number per day

Pipe tobacco \_\_\_\_\_ Packets per week

Snuff/chewing tobacco \_\_\_\_\_ Boxes per week

14) Have you ever been diagnosed with a respiratory disease or disorder (e.g. asthma, asbestosis, etc)?

\_\_\_\_\_ Yes → \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_ No

Rylander (1990) Respiratory Questionnaire:

Participant number: \_\_\_\_\_

Questions About Previous Work

1. Before this work, did you work in any other dusty environment?

\_\_\_\_\_ Yes

\_\_\_\_\_ No → **Proceed to question 3**

2. What type of work? \_\_\_\_\_ number of years

_____	_____
_____	_____
_____	_____
_____	_____

Questions About Present Work

3. How many years have you worked at your present work?

\_\_\_\_\_ Years

4. How many hours per day do you usually work? \_\_\_\_\_ Hours

5. How many days per week do you usually work? \_\_\_\_\_ Days

6. In what types of work are you exposed to dust? \_\_\_\_\_ hours worked

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

7. How many hours have you worked today? \_\_\_\_\_ hours

8. Do you ever wear breathing protection at work?

\_\_\_\_\_ Yes

\_\_\_\_\_ No → **Proceed to question 11**

9. How often do you wear this when exposed to dust?

\_\_\_\_\_ 80-100% of the time

\_\_\_\_\_ 50-79% of the time

\_\_\_\_\_ Less than 50%

10. How many years have you used a dust mask? \_\_\_\_\_ Years

11. Do you often (more than a third of the time) have any of the following symptoms related to work?

	YES	NO
Symptoms from chest:		
Dry Cough	_____	_____
Cough with Phlegm	_____	_____
Wheezing Chest	_____	_____
Chest Tightness	_____	_____
Dyspnea	_____	_____
Breathlessness	_____	_____
Nasal Irritation	_____	_____
Throat Irritation	_____	_____
Sinus Trouble	_____	_____
General symptoms:		
Fever	_____	_____
Headache	_____	_____
Vertigo	_____	_____
Nausea	_____	_____
Tiredness	_____	_____
Joint Pains	_____	_____
Skin Problems	_____	_____
Eye Irritation	_____	_____

12. Are any of the symptoms worse on a specific day of the week?

\_\_\_\_\_ Yes → What kind of symptoms? \_\_\_\_\_  
Which Day? \_\_\_\_\_

\_\_\_\_\_ No

13. Have any of the symptoms caused sick leave?  
       \_\_\_\_\_ Yes → What kind of symptoms? \_\_\_\_\_  
       \_\_\_\_\_ No
14. Do you use any medicine regularly for any of the symptoms?  
       \_\_\_\_\_ Yes → What kind of medicine? \_\_\_\_\_  
       \_\_\_\_\_ No
15. Do you have any other symptoms that you think can be related to your work?  
       \_\_\_\_\_ Yes → What kind of symptoms? \_\_\_\_\_  
       \_\_\_\_\_ No
16. Do you have cough with phlegm most of the mornings?  
       \_\_\_\_\_ Yes → \_\_\_\_\_ Less than 3 months per year  
                                   \_\_\_\_\_ More than 3 months per year  
       \_\_\_\_\_ No → **Proceed to question 18**
17. How long have you had cough with phlegm?  
       \_\_\_\_\_ Less than 2 years  
       \_\_\_\_\_ More than 2 years
18. Does your chest ever feel tight in connection with work?  
       \_\_\_\_\_ Yes  
       \_\_\_\_\_ No → **proceed to question 20**
19. Does the chest tightness occur on any particular day?  
       \_\_\_\_\_ Yes → Specify: \_\_\_\_\_ Most of the first days back at work only  
   \_\_\_\_\_ Other day(s) also  
       \_\_\_\_\_ No

20. Have you, during the last year, had episodes of flu-like symptoms (fever, shivering, malaise, cough, tiredness, weakness, muscle and joint pains) in connection with dusty work?
- \_\_\_\_\_ Yes
- \_\_\_\_\_ No → **Proceed to question 24**
21. How many times? \_\_\_\_\_ Times
22. During which tasks do they occur? \_\_\_\_\_
- \_\_\_\_\_ Don't know
23. How long did it last?
- \_\_\_\_\_ To the next day
- \_\_\_\_\_ Several days
- \_\_\_\_\_ Don't know
24. Approximately how many times per year do you have colds?
- \_\_\_\_\_ Times → \_\_\_\_\_ continuously
25. Since the age of 18, have you ever had pneumonia diagnosed by a physician?
- \_\_\_\_\_ Yes
- \_\_\_\_\_ No → **Proceed to question 27**
26. How many times? \_\_\_\_\_ Times
27. Do you have any of the following conditions? Check if  
Verified by a  
Physician
- |                           | YES   | NO    |       |
|---------------------------|-------|-------|-------|
| Hay Fever                 | _____ | _____ | _____ |
| Eczema                    | _____ | _____ | _____ |
| Asthma                    | _____ | _____ | _____ |
| Food Allergy              | _____ | _____ | _____ |
| Allergy to house dust     | _____ | _____ | _____ |
| Allergy to animals        | _____ | _____ | _____ |
| Allergy to metals         | _____ | _____ | _____ |
| Allergy to something else | _____ | _____ | _____ |
| specify _____             |       |       |       |

28. Please check (v) if you have had any of the following symptoms today?

	<u>Before Work</u>	<u>During Work</u>	<u>Does it bother you?</u>
Dry Cough	_____	_____	_____
Cough with Phlegm	_____	_____	_____
Wheezing Chest	_____	_____	_____
Chest Tightness	_____	_____	_____
Dyspnea	_____	_____	_____
Breathlessness	_____	_____	_____
Nasal Irritation	_____	_____	_____
Throat Irritation	_____	_____	_____
Sinus Trouble	_____	_____	_____
General symptoms:			
Fever	_____	_____	_____
Headache	_____	_____	_____
Vertigo	_____	_____	_____
Nausea	_____	_____	_____
Tiredness	_____	_____	_____
Joint Pains	_____	_____	_____
Skin Problems	_____	_____	_____
Eye Irritation	_____	_____	_____

**APPENDIX B**

**Respirator Design Questionnaire:**

Participant Number \_\_\_\_\_

Instructions:

Please Circle the corresponding number in the box.

1) The respirator was comfortable to wear:

1	2	3	4	5
Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree

2) The respirator fit properly:

1	2	3	4	5
Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree

3) The head straps are easy to adjust:

1	2	3	4	5
Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree

4) I was able to communicate clearly to my fellow workers when wearing the Respirator:

1	2	3	4	5
Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree

5) I was able to breath normally while wearing the respirator:

1	2	3	4	5
Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree

Additional Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



6) I felt that the respirator was necessary for the mulching task:

1	2	3	4	5
Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree

Explain: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

7) I would voluntarily choose to wear a respirator again while mulching:

1	2	3	4	5
Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree

Why would you not wear a respirator: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

8) What changes, if any, would you make to the design of the respirator to make it more comfortable? Or useful?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- 9) Are there related issues concerning using or not using the respirator we need to know about? (i.e. organization, policies, peer pressure, etc.)

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- 10) If you had to design a respirator what would you do? (draw or write a description)

**APPENDIX C**

	03-F-1	05-F-1	08-F-1	Minimum	Maximum	AVG				
Sample Volume (cubic meters)	1.623	1.731	1.679							
Detection Limit (CFU/cubic meter)	92.4	86.6	89.3							
Total Colonies Counted	19	1	65							
Serial Dilution Factor	150	150	150							
Total Mold Spores (cts/cubic meter)	5060	209	4723	209	5060	3330.67				
Alternaria	127		123	0	127	83.33				
Aspergillus/Penicillium-types	64		154	0	154	72.67				
Ascospores	430		185	0	430	205.00				
Basidiospores	207	30	92	30	207	109.67				
Botrytis			15	0	15	5.00				
Cladosporium	2371	119	3185	119	3185	1891.67				
Epicoccum	64		15	0	64	26.33				
Nigrospora			31	0	31	10.33				
Rusts	16			0	16	5.33				
Smuts/Myxomycetes	764	30	385	30	764	393.00				
Torula	16			0	16	5.33				
Pestalotia	95			0	95	31.67				
Other Hyaline Fungi	271		338	0	338	203.00				
Other Brown Fungi	573	30	185	30	573	262.67				
Small Brown Round	64		15	0	64	26.33				
Hyphae Fragments	1480	15	600	15	1480	698.33				
Total CFU/m3	1756	87	5807	87	5807	2550.00				
Alternaria	277			0	277	92.33				
Aspergillus fumigatus-like	92		89	0	92	60.33				
Aspergillus species	92		89	0	92	60.33				
Botrytis	277			0	277	92.33				
Cladosporium	739	87	4288	87	4288	1704.67				
Paecilomyces	277		983	0	983	420.00				
Penicillium			89	0	89	29.67				
Sterile mycelia			268	0	268	89.33				
	P2-F	P3-F	P4-F	P5-F	P6-F	P8-F	P9-F-1	Minimum	Maximum	AVG

Sample Volume (cubic meters)	1.5	1.499	1.44	1.525	1.522	1.485	1.441			
Detection Limit (CFU/cubic meter)	10	10	10.4	9.8	9.9	10.1	104.1			
Total Colonies Counted	39	54	50	48	25	19	68			
Serial Dilution Factor	15	15	15	15	15	15				
Total Mold Spores (cts/cubic meter)	276	482	538	271	356	243	484	243	538	378.57
Alternaria		69	54	34	119	52	90	0	119	59.71
Ascospores	17	34			17	52		0	52	17.14
Basidiospores	17	52	36		17		18	0	52	20.00
Botrytis	17							0	17	2.43
Cladosporium	121	138	179	34	68	35	72	34	179	92.43
Epicoccum		34	18	34				0	34	12.29
Nigrospora	17	34		17			18	0	34	12.29
Pithomyces		17		34		17		0	34	9.71
Rusts	17			17	17		36	0	36	12.43
Smuts/Myxomycetes		17	126	17	17	52	108	0	126	48.14
Stachybotrys							18	0	18	2.57
Torula			18		17			0	18	5.00
Trichocladium Uniseptatum		17						0	17	2.43
Other Hyaline Fungi		34					18	0	34	7.43
Other Brown Fungi	69	34	54	85	68	35	54	34	85	57.00
Small Brown Round			54					0	54	7.71
Hyphae Fragments	413	310	610	356	458	226	789	310	789	451.71
Algal Spores				34		35		0	35	9.86
Total CFU/m3	390	540	521	472	246			0	540	309.86
Acremonium								0	0	0.00
Alternaria		100	21	30	79			0	100	32.86
Aspergillus fumigatus-like			10					0	10	1.43
Aspergillus species	10							0	10	1.43
Aureobasidium	20			10				0	20	4.29
Botrytis		30	21					0	30	7.29
Cladosporium	80	350	208	187	116			0	350	134.43
Curvularia	10							0	10	1.43

Drechslera/Bipolaris	10	10	10					0	10	4.29
Paecilomyces	20		10	10	10			0	20	7.14
Penicillium	90	20	198	98				0	198	58.00
Rhodotorula	20							0	20	2.86
Unidentified Asomycete				10				0	10	1.43
Yeast-like	90	10	21	59	10			0	90	27.14
Sterile mycelia	40	20	21	69	30			0	69	25.71

APPENDIX D



**AEROTECH LABORATORIES, INC.**

Virginia Tech  
 459 Tech Center Dr.  
 Blacksburg, VA 24061  
 Attn: Deborah Young

Lab Number: A-303-3485  
 Date Received: 03/19/03  
 Date Reported: 03/21/03

AIHA EMLAP No. 102287  
 Endotoxin Analysis - Air  
 Method: Kinetic Chromogenic

Lab Number	1	2	3
Sample Identification	05E Endotoxin	05E Endotoxin	08E Endotoxin
Date Analyzed	03/23/03	03/20/03	03/20/03
Volume (M <sup>3</sup> )	1.62322	1.73115	1.67851
	EU/Filter	EU/Filter	EU/Filter
	EU/M <sup>3</sup>	EU/M <sup>3</sup>	EU/M <sup>3</sup>
Endotoxin	<0.05	2.74	<0.05
		1.98	<0.03

Input By: *VM*  
 CS Review: *JS*

Technical Review: *JS*  
 Final Review: *JS*



# AEROTECH LABORATORIES, INC.

Virginia Tech  
458 Tashi Center Dr.  
Blacksburg, VA 24061  
Attn: Deborah Young

Lab Number: A-305-5340  
Date Received: 03/31/03  
Date Recycled: 04/04/03

AHA-BLAP No. 102237  
Endotoxin Analysis - Air  
Method: Kinetic Chromogenic

Lab Number	1	2*	3	4	5
Sample Identification	PRE Endotoxin	PRE Endotoxin	FAE Endotoxin	PRE Endotoxin	PRE Endotoxin
Date Analyzed	04/04/03	04/04/03	04/04/03	04/04/03	04/04/03
Volume (mL)	1.5000	1.4812	1.4807	1.5253	1.5313
	EU/Filter	EU/Filter	EU/Filter	EU/Filter	EU/Filter
	2.165	4.06	5.36	2.04	3.625
Endotoxin		<0.13	4.14	1.3*	2.38

Lab Number	6	7	8
Sample Identification	PRE Endotoxin	PRE Endotoxin	PRE Endotoxin
Date Analyzed	04/04/03	04/04/03	04/04/03
Volume (mL)	1.4851	1.4817	1.4817
	EU/Filter	EU/Filter	EU/Filter
	42.25	5.12	3.45
Endotoxin		<0.05	<0.05

\* Cassette contained a filter spacer rather than a filter - results may have been affected.

Final Review: *[Signature]*  
CS Review: *[Signature]*

Technical Review: *[Signature]*  
Final Review: *[Signature]*