BOX CHI-1

S. EVER WORKED IN A CHEMICAL INDUSTRY 1 (GO TO CHI-1)

S. NEVER WORKED IN A CHEMICAL INDUSTRY 2 (GO TO NEXT MODULE)

CHI-1. What kind of chemicals did [COMPANY NAME IN C3] make?

YES NO DK

Paints 1……….2……….8

Pesticides 1……….2……….8

Drugs or pharmaceuticals 1……….2……….8

Other chemicals (SPECIFY) 1……….2……….8

BOX CHI-2

IF CHI-1 = 1 (PAINTS), ASK CHI-2. ELSE, GO TO BOX CHI-3.

CHI-2.

a. What types of paint were made where you worked?

YES NO DK

1. Epoxy? 1 2 8

2. Polyurethane? 1 2 8

3. Latex? 1 2 8

4. Nitrocellulose or cellulose nitrate? 1 2 8

5. Alkyd? 1 2 8

6 Phenolic? 1 2 8

7. Vinyl? 1 2 8

8. Isocyanate? 1 2 8

9. Fluoropolymer or fluoride based? 1 2 8

10. Polyimide? 1 2 8

b. Were any other type of paints made there?

YES (SPECIFY) 1

NO 2

DK 8

c. Were other paint-related materials or substances such as thinners, strippers, lacquers, stains or varnishes made there?

YES 1

NO 2 (GO TO BOX CHI-3)

DK 8 (GO TO BOX CHI-3)

d. What were these materials or substances?

THINNERS 1

STRIPPERS 2

LACQUERS 3

STAINS 4

VARNISHES 5

OTHER (SPECIFY) 6

DK 8

BOX CHI-3

IF CHI-1 = 2 (PESTICIDES), ASK CHI-3. ELSE, GO TO BOX CHI-4.

CHI-3.

a. What types of pesticides were made where you worked?

YES NO DK

1. Organochlorines such as DDT? 1 2 8

2. Pyrethrins? 1 2 8

3. Rodenticides, such as rat poison? 1 2 8

4. Fungicides or mold killers? 1 2 8

5. Herbicides or weed killers? 1 2 8

6 Insecticides or bug killers? 1 2 8

7. Cyclodienes such as Chlordane, Heptachlor, or Aldrin? 1 2 8

8. Organophosphorus compounds such as 2,4-D, Diazinon,

Parathion, and Malathion? 1 2 8

9. Carbamates such as Carbaryl, Carbofuran, and Aldicarb? 1 2 8

10. Triazlnes such as Atrazine? 1 2 8

11. Amides such as Alachlor? 1 2 8

12. Benzoic acids such as Dicamba? 1 2 8

13. Picloram? 1 2 8

14. Amitrole? 1 2 8

15. Glyphosate? 1 2 8

b. Were any other pesticides made there?

YES (SPECIFY) 1

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

NO 2

DK 8

BOX CHI-4

IF CHI-1 = 3 (DRUGS OR PHARMACEUTICALS), ASK CHI-4. ELSE, GO TO BOX CHI-5.

CHI-4.

a. What types of drugs were made where you worked?

YES NO DK

1. Vitamins and minerals? 1 2 8

2. Hormones and contraceptives such as promarin or ovral? 1 2 8

3. Biologic agents such as vacclnes and antisera? 1 2 8

4. Analgesics such as Darvon? 1 2 8

5. Anaesthetlcs? 1 2 8

6. Antiseptlcs, germicides or antibacterials? 1 2 8

7. Sulphonimides or other sulphur compounds? 1 2 8

8. Sedatives such as Lomotril? 1 2 8

9. Barbituates such as Phenobarbitol? 1 2 8

10. Ataractlcs such as Valium or Librium? 1 2 8

11. Antibiotics such as Tetracycline? 1 2 8

12. Diuretics such as Lasix? 1 2 8

13. Antihistamines such as Dimetapp? 1 2 8

14. Antidepressents such as Elavil? 1 2 8

b. Were any other drugs made there?

YES (SPECIFY) 1

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

NO 2

DK 8

BOX CHI-5

IF CHI-1 = 4 (OTHER CHEMICALS), ASK CHI-5. ELSE, GO TO CHI-6.

CHI-5. What chemicals were being made where you worked?

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

DK

CHI-6. Was the part of the plant making chemicals primarily indoors or outdoors?

INDOORS 1

OUTDOORS 2

BOTH 3

DK 8

CHI-7. How would you best describe the job you did at [COMPANY NAME IN C3]? Was it in maintenance, quality control, production, utilities, engineering, administration, shipping and receiving, research, environmental control, or something else?

MAINTENANCE 01

QUALITY CONTROL 02

PRODUCTION 03

UTILITIES 04

ENGINEERING 05

ADMINISTRATION 06

SHIPPING, RECEIVING OR STORAGE (WAREHOUSE) 07

RESEARCH 08

ENVIRONMENTAL CONTROL 09

SOMETHING ELSE (SPECIFY) 96

DK 98

BOX CHI-6

IF CHI-7 = 03 (PRODUCTION), ASK CHI-8a. ELSE, GO TO BOX CHI-16.

CHI-8. I'm now going to ask you where you spent your time.

a. On average, how often were you in a control room where the air was removed to outside the control room by a fan or exhaust system?

| NEVER 00000  DID, DK HOW OFTEN 99996  DK 99998 | } | (GO TO CHI-8b) |
| --- | --- | --- |

| 1. \_\_\_\_\_\_\_\_ DAY 1  # TIMES per WEEK 2  MONTH 3  YEAR 4 | } | (GO TO 5) |
| --- | --- | --- |

| 2. \_\_\_\_\_\_\_\_ HOURS 1 DAY 1  DAYS 2 per WEEK 2  WEEKS 3 MONTH 3  MONTHS 4 YEAR 4 |
| --- |

BOX CHI-7

IF NUMERATOR IN 2 = 1 (HOURS), THEN GO TO BOX CHI-9.

IF NUMERATOR IN 2 = 2-4 (DAYS, WEEKS, MONTHS), GO TO 5.

3. \_\_\_\_\_\_\_\_\_\_ (GO TO CHI-8b)

PERCENT

4. / (GO TO CHI-8b)

FRACTION

5. Each time you were in this type of control room, how long, on average, were you there?

\_\_\_\_\_\_\_\_\_\_ MINUTES 1

HOURS 2

DK 8

BOX CHI-8

IF DENOMINATOR IN 1 = 1-3 (DAY, WEEK, MONTH), GO TO 6.

IF DENOMINATOR IN 1 = 4 (YEAR), GO TO CHI-8b.

BOX CHI-9

IF DENOMINATOR IN 2 = 4 (YEAR), GO TO CHI-8b.

6. Were you there year round?

YES 1 (GO TO CHI-8b)

NO 2

DK 8 (GO TO CHI-8b)

7. How many (DAYS/WEEKS/MONTHS) a year were you there?

DAYS/WEEKS/MONTHS |\_\_\_|\_\_\_|\_\_\_|

DK 998

b. On average, how often were you in a control room where the inside air was not removed from the control room?

| NEVER 00000  DID, DK HOW OFTEN 99996  DK 99998 | } | (GO TO CHI-8c) |
| --- | --- | --- |

| 1. \_\_\_\_\_\_\_\_ DAY 1  # TIMES per WEEK 2  MONTH 3  YEAR 4 | } | (GO TO 5) |
| --- | --- | --- |

| 2. \_\_\_\_\_\_\_\_ HOURS 1 DAY 1  DAYS 2 per WEEK 2  WEEKS 3 MONTH 3  MONTHS 4 YEAR 4 |
| --- |

BOX CHI-10

IF NUMERATOR IN 2 = 1 (HOURS), THEN GO TO BOX CHI-12.

IF NUMERATOR IN 2 = 2-4 (DAYS, WEEKS, MONTHS), GO TO 5.

3. \_\_\_\_\_\_\_\_\_\_ (GO TO CHI-8c)

PERCENT

4. / (GO TO CHI-8c)

FRACTION

5. Each time you were in this type of control room, how long, on average, were you there?

\_\_\_\_\_\_\_\_\_\_ MINUTES 1

HOURS 2

DK 8

BOX CHI-11

IF DENOMINATOR IN 1 = 1-3 (DAY, WEEK, MONTH), GO TO 6.

IF DENOMINATOR IN 1 = 4 (YEAR), GO TO CHI-8c.

BOX CHI-12

IF DENOMINATOR IN 2 = 4 (YEAR), GO TO CHI-8c.

6. Were you there year round?

YES 1 (GO TO CHI-8c)

NO 2

DK 8 (GO TO CHI-8c)

7. How many (DAYS/WEEKS/MONTHS) a year were you there?

DAYS/WEEKS/MONTHS |\_\_\_|\_\_\_|\_\_\_|

DK 998

c. Other than when you were in a control room, on average, how often were you in an area where "paints"

(IF CHI-1 = 1) "pesticides" (IF CHI-1 =2) "drugs" (IF CHI-1 =3) "chemicals" (IF CHI-1 =4) were being made?

| NEVER 00000  DID, DK HOW OFTEN 99996  DK 99998 | } | (GO TO BOX CHI-16) |
| --- | --- | --- |

| 1. \_\_\_\_\_\_\_\_ DAY 1  # TIMES per WEEK 2  MONTH 3  YEAR 4 | } | (GO TO 5) |
| --- | --- | --- |

| 2. \_\_\_\_\_\_\_\_ HOURS 1 DAY 1  DAYS 2 per WEEK 2  WEEKS 3 MONTH 3  MONTHS 4 YEAR 4 |
| --- |

BOX CHI-13

IF NUMERATOR IN 2 = 1 (HOURS), THEN GO TO BOX CHI-15.

IF NUMERATOR IN 2 = 2-4 (DAYS, WEEKS, MONTHS), GO TO 5.

3. \_\_\_\_\_\_\_\_\_\_ (GO TO BOX CHI-16)

PERCENT

4. / (GO TO BOX CHI-16)

FRACTION

5. Each time you were in an area where "paints" (IF CHI-1 = 1) "pesticides" (IF CHI-1 = 2) "drugs" (IF CHI-1 = 3) "chemicals" (IF CHI-1 =4) were being made, how long, on average, were you there?

\_\_\_\_\_\_\_\_\_\_ MINUTES 1

HOURS 2

DK 8

BOX CHI-14

IF DENOMINATOR IN 1 = 1-3 (DAY, WEEK, MONTH), GO TO 6.

IF DENOMINATOR IN 1 = 4 (YEAR), GO TO BOX CHI-16.

BOX CHI-15

IF DENOMINATOR IN 2 = 4 (YEAR), GO TO BOX CHI-16.

6. Were you there year round?

YES 1 (GO TO BOX CHI-16)

NO 2

DK 8 (GO TO BOX CHI-16)

7. How many (DAYS/WEEKS/MONTHS) a year were you there?

DAYS/WEEKS/MONTHS |\_\_\_|\_\_\_|\_\_\_|

DK 998

BOX CHI-16

IF CHI-7 = 02 (QUALITY CONTROL) OR 03 (PRODUCTION) OR 05 (ENGINEERING),

ASK CHI-8d. OTHERWISE, GO TO BOX CHI-20.

d. On average, how often did you take a sample from the process equipment for quality control(QC) or quality assurance (QA) purposes?

| NEVER 00000  DID, DK HOW OFTEN 99996  DK 99998 | } | (GO TO BOX CHI-20) |
| --- | --- | --- |

| 1. \_\_\_\_\_\_\_\_ DAY 1  # TIMES per WEEK 2  MONTH 3  YEAR 4 | } | (GO TO 5) |
| --- | --- | --- |

| 2. \_\_\_\_\_\_\_\_ HOURS 1 DAY 1  DAYS 2 per WEEK 2  WEEKS 3 MONTH 3  MONTHS 4 YEAR 4 |
| --- |

BOX CHI-17

IF NUMERATOR IN 2 = 1 (HOURS), THEN GO TO BOX CHI-19.

IF NUMERATOR IN 2 = 2-4 (DAYS, WEEKS, MONTHS), GO TO 5.

3. \_\_\_\_\_\_\_\_\_\_ (GO TO BOX CHI-20)

PERCENT

4. / (GO TO BOX CHI-20)

FRACTION

5. Each time you did this, how long, on average, did it take?

\_\_\_\_\_\_\_\_\_\_ MINUTES 1

HOURS 2

DK 8

BOX CHI-18

IF DENOMINATOR IN 1 = 1-3 (DAY, WEEK, MONTH), GO TO 6.

IF DENOMINATOR IN 1 = 4 (YEAR), GO TO BOX CHI-20.

BOX CHI-19

IF DENOMINATOR IN 2 = 4 (YEAR), GO TO BOX CHI-20.

6. Did you do this year round?

YES 1 (GO TO BOX CHI-20)

NO 2

DK 8 (GO TO BOX CHI-20)

7. How many (DAYS/WEEKS/MONTHS) a year did you do this?

DAYS/WEEKS/MONTHS |\_\_\_|\_\_\_|\_\_\_|

DK 998

BOX CHI-20

IF CHI-7 = 01 (MAINTENANCE) OR 03 (PRODUCTION), ASK CHI-8e. ELSE, GO TO BOX CHI-24.

e. On average, how often did you clean reactors, kettles, filters or other equipment used to make chemicals or containing chemicals?

| NEVER 00000  DID, DK HOW OFTEN 99996  DK 99998 | } | (GO TO BOX CHI-24) |
| --- | --- | --- |

| 1. \_\_\_\_\_\_\_\_ DAY 1  # TIMES per WEEK 2  MONTH 3  YEAR 4 | } | (GO TO 5) |
| --- | --- | --- |

| 2. \_\_\_\_\_\_\_\_ HOURS 1 DAY 1  DAYS 2 per WEEK 2  WEEKS 3 MONTH 3  MONTHS 4 YEAR 4 |
| --- |

BOX CHI-21

IF NUMERATOR IN 2 = 1 (HOURS), THEN GO TO BOX CHI-23.

IF NUMERATOR IN 2 = 2-4 (DAYS, WEEKS, MONTHS), GO TO 5.

3. \_\_\_\_\_\_\_\_\_\_ (GO TO BOX CHI-24)

PERCENT

4. / (GO TO BOX CHI-24)

FRACTION

5. Each time you did this, how long, on average, did it take?

\_\_\_\_\_\_\_\_\_\_ MINUTES 1

HOURS 2

DK 8

BOX CHI-22

IF DENOMINATOR IN 1 = 1-3 (DAY, WEEK, MONTH), GO TO 6.

IF DENOMINATOR IN 1 = 4 (YEAR), GO TO BOX CHI-24.

BOX CHI-23

IF DENOMINATOR IN 2 = 4 (YEAR), GO TO BOX CHI-24.

6. Did you do this year round?

YES 1 (GO TO BOX CHI-24)

NO 2

DK 8 (GO TO BOX CHI-24)

7. How many (DAYS/WEEKS/MONTHS) a year did you do this?

DAYS/WEEKS/MONTHS |\_\_\_|\_\_\_|\_\_\_|

DK 998

BOX CHI-24

IF CHI-7 = 03 (PRODUCTION) OR 07 (SHIPPING, RECEIVING OR

STORAGE (WAREHOUSE)), ASK CHI-8f. ELSE, GO TO BOX CHI-28.

f. On average, how often did you pack or package materials?

| NEVER 00000  DID, DK HOW OFTEN 99996  DK 99998 | } | (GO TO BOX CHI-28) |
| --- | --- | --- |

| 1. \_\_\_\_\_\_\_\_ DAY 1  # TIMES per WEEK 2  MONTH 3  YEAR 4 | } | (GO TO 5) |
| --- | --- | --- |

| 2. \_\_\_\_\_\_\_\_ HOURS 1 DAY 1  DAYS 2 per WEEK 2  WEEKS 3 MONTH 3  MONTHS 4 YEAR 4 |
| --- |

BOX CHI-25

IF NUMERATOR IN 2 = 1 (HOURS), THEN GO TO BOX CHI-27.

IF NUMERATOR IN 2 = 2-4 (DAYS, WEEKS, MONTHS), GO TO 5.

3. \_\_\_\_\_\_\_\_\_\_ (GO TO BOX CHI-28)

PERCENT

4. / (GO TO BOX CHI-28)

FRACTION

5. Each time you did this, how long, on average, did it take?

\_\_\_\_\_\_\_\_\_\_ MINUTES 1

HOURS 2

DK 8

BOX CHI-26

IF DENOMINATOR IN 1 = 1-3 (DAY, WEEK, MONTH), GO TO 6.

IF DENOMINATOR IN 1 = 4 (YEAR), GO TO BOX CHI-28.

BOX CHI-27

IF DENOMINATOR IN 2 = 4 (YEAR), GO TO BOX CHI-28.

6. Did you do this year round?

YES 1 (GO TO BOX CHI-28)

NO 2

DK 8 (GO TO BOX CHI-28)

7. How many (DAYS/WEEKS/MONTHS) a year did you do this?

DAYS/WEEKS/MONTHS |\_\_\_|\_\_\_|\_\_\_|

DK 998

BOX CHI-28

IF CHI-7 = 03 (PRODUCTION) OR 04 (UTILITIES) OR 07 (SHIPPING, RECEIVING

OR STORAGE (WAREHOUSE)), ASK CHI-8g. ELSE, GO TO BOX CHI-32.

g. On average, how often did you unload chemicals from, or load chemicals to, tank trucks, tank cars or rail cars?

| NEVER 00000  DID, DK HOW OFTEN 99996  DK 99998 | } | (GO TO BOX CHI-32) |
| --- | --- | --- |

| 1. \_\_\_\_\_\_\_\_ DAY 1  # TIMES per WEEK 2  MONTH 3  YEAR 4 | } | (GO TO 5) |
| --- | --- | --- |

| 2. \_\_\_\_\_\_\_\_ HOURS 1 DAY 1  DAYS 2 per WEEK 2  WEEKS 3 MONTH 3  MONTHS 4 YEAR 4 |
| --- |

BOX CHI-29

IF NUMERATOR IN 2 = 1 (HOURS), THEN GO TO BOX CHI-31.

IF NUMERATOR IN 2 = 2-4 (DAYS, WEEKS, MONTHS), GO TO 5.

3. \_\_\_\_\_\_\_\_\_\_ (GO TO BOX CHI-32)

PERCENT

4. / (GO TO BOX CHI-32)

FRACTION

5. Each time you did this, how long, on average, did it take?

\_\_\_\_\_\_\_\_\_\_ MINUTES 1

HOURS 2

DK 8

BOX CHI-30

IF DENOMINATOR IN 1 = 1-3 (DAY, WEEK, MONTH), GO TO 6.

IF DENOMINATOR IN 1 = 4 (YEAR), GO TO BOX CHI-32.

BOX CHI-31

IF DENOMINATOR IN 2 = 4 (YEAR), GO TO BOX CHI-32.

6. Did you do this year round?

YES 1 (GO TO BOX CHI-32)

NO 2

DK 8 (GO TO BOX CHI-32)

7. How many (DAYS/WEEKS/MONTHS) a year did you do this?

DAYS/WEEKS/MONTHS |\_\_\_|\_\_\_|\_\_\_|

DK 998

BOX CHI-32

IF CHI-8d > 1 HOUR PER WEEK, ASK CHI-9. ELSE, GO TO BOX CHI-36.

CHI-9. You said you took samples.

1. Where in the process did you collect the samples?

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

DK

b. How did you usually collect the samples? (SELECT ALL THAT APPLY)

Placed a sample container inside a ventilated box and filled

the container. 1

Poked the rubber or plastic membrane of a sample container with

a needle, turned a valve and filled the container 2

Turned a valve, spigot or similar device and filled a sample

container out in the open air 3

Connected a sample container to the process line so that the

process chemical flowed through the container 4

Some other way (DESCRIBE) 5

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

DK 8

c. On average, how often did you perform any chemical or physical analyses on these samples?

| NEVER 00000  DID, DK HOW OFTEN 99996  DK 99998 | } | (GO TO BOX CHI-36) |
| --- | --- | --- |

| 1. \_\_\_\_\_\_\_\_ DAY 1  # TIMES per WEEK 2  MONTH 3  YEAR 4 | } | (GO TO 5) |
| --- | --- | --- |

| 2. \_\_\_\_\_\_\_\_ HOURS 1 DAY 1  DAYS 2 per WEEK 2  WEEKS 3 MONTH 3  MONTHS 4 YEAR 4 |
| --- |

BOX CHI-33

IF NUMERATOR IN 2 = 1 (HOURS), THEN GO TO BOX CHI-35.

IF NUMERATOR IN 2 = 2-4 (DAYS, WEEKS, MONTHS), GO TO 5.

3. \_\_\_\_\_\_\_\_\_\_ (GO TO BOX CHI-36)

PERCENT

4. / (GO TO BOX CHI-36)

FRACTION

5. Each time you did this, how long, on average, did it take?

\_\_\_\_\_\_\_\_\_\_ MINUTES 1

HOURS 2

DK 8

BOX CHI-34

IF DENOMINATOR IN 1 = 1-3 (DAY, WEEK, MONTH), GO TO 6.

IF DENOMINATOR IN 1 = 4 (YEAR), GO TO BOX CHI-36.

BOX CHI-35

IF DENOMINATOR IN 2 = 4 (YEAR), GO TO BOX CHI-36.

6. Did you do this year round?

YES 1 (GO TO BOX CHI-36)

NO 2

DK 8 (GO TO BOX CHI-36)

7. How many (DAYS/WEEKS/MONTHS) a year did you do this?

DAYS/WEEKS/MONTHS |\_\_\_|\_\_\_|\_\_\_|

DK 998

BOX CHI-36

IF CHI-7 = 03 (PRODUCTION), ASK CHI-10. ELSE, GO TO BOX CHI-38.

CHI-10. What chemicals were being made in the area where you worked?

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

DK

CHI-11.

a. What equipment, such as reactors, kettles, distillation towers, or quenchers did you run? (SELECT ALL THAT APPLY)

REACTORS 1

KETTLES 2

DISTILLATION TOWERS 3

QUENCHERS 4

OTHER (SPECIFY) 5

NONE 6

DK 8

BOX CHI-37

IF CHI-11a = 6 (NONE), ASK CHI-11b. ELSE, SKIP TO CHI-11c.

b. What equipment was in the area where you worked? (SELECT ALL THAT APPLY)

REACTORS 1

KETTLES 2

DISTILLATION TOWERS 3

QUENCHERS 4

OTHER (SPECIFY) 5

NONE 6

DK 8

c. How would you describe most of this equipment? Was it closed meaning that the equipment had covers to them and pipes were used to transport most of the material from one piece of equipment to another, or open, meaning there were no covers on the equipment and pipes were not used to transport most of the material?

CLOSED 1

OPEN 2

BOTH 3

NEITHER (DESCRIBE) 4

DK 8

CHI-12. Did you add chemicals by hand or by emptying bags, drums or other containers into the equipment?

YES 1

NO 2 (GO TO BOX CHI-38)

DK 8 (GO TO BOX CHI-38)

1. What chemicals were these?

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

DK

1. What other chemicals were added to the process equipment to make [CHI-10a CHEMICALS]?

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

DK

BOX CHI-38

IF CHI-8e > 1 HOUR PER WEEK, ASK CHI-13. ELSE, GO TO BOX CHI-39.

CHI-13. You said you cleaned reactors, kettles, filters or other equipment used to make chemicals or containing chemicals.

1. What equipment did you clean?

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

DK

1. What chemicals were in it when you cleaned it?

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

DK

BOX CHI-39

IF CHI-8f > 1 HOUR PER WEEK, ASK CHI-14. ELSE, GO TO BOX CHI-40.

CHI-14. You said you packed or packaged materials.

a. Was the material you packaged a dust, liquid or gas?

DUST 1

LIQUID 2

GAS 3

DK 8

b. What type of container did you fill?

55 gallon drum 1

Bags 2

Something else (SPECIFY) 3

DK 8

c. Was there ventilation at the packing machine that removed ["dust" (IF CHI-14a = 1) OR "fumes or vapors" (IF CHI‑14a = 2 OR 3) OR "dust or fumes" (IF CHI-14a = 8)] from where you worked?

YES 1

NO 2

DK 8

BOX CHI-40

IF CHI-8g > 1 HOUR PER WEEK, ASK CHI-15. ELSE, GO TO BOX CHI-45.

CHI-15. You said you unloaded or loaded tank trucks, tank cars or rail cars.

a. Were the chemicals you loaded or unloaded in containers, or did you pump the materials to or from a storage tank or other container?

MATERIALS WERE IN CONTAINERS 1 (GO TO BOX CHI-45)

PUMPED MATERIALS TO OR FROM A

STORAGE TANK 2 (GO TO CHI-15b)

BOTH (SPECIFY WHAT WAS PUMPED) 3 (GO TO CHI-15b)

NEITHER (SPECIFY WHAT WAS LOADED

OR UNLOADED) 4 (GO TO BOX CHI-45)

DK 8 (GO TO CHI-15d)

b. Did you load or unload from the top of the truck or car, or from the bottom?

TOP 1 (GO TO CHI-15c)

BOTTOM 2 (GO TO CHI-15d)

SOME TOP, SOME BOTTOM 3 (GO TO CHI-15c)

DK 8 (GO TO CHI-15d)

c. Was there a cover over the opening on top when you loaded or unloaded to keep fumes to a minimum or was the truck or car opening uncovered?

COVERED 1 (GO TO CHI-15d)

UNCOVERED 2 (GO TO BOX CHI-41)

SOMETIMES COVERED, SOMETIMES

UNCOVERED 3 (GO TO CHI-15d)

DK 8 (GO TO BOX CHI-41)

d. Was there a vapor recovery system on the pumping equipment when you loaded or unloaded chemicals?

YES 1

NO 2

SOMETIMES 3

DK 8

BOX CHI-41

IF CHI-15b = 1 (TOP) OR 3 (BOTH), ASK CHI-15e. ELSE, GO TO BOX CHI-45.

e. On average, how much time did you spend on top of the rail car?

| NEVER 00000  DID, DK HOW OFTEN 99996  DK 99998 | } | (GO TO CHI-15f) |
| --- | --- | --- |

| 1. \_\_\_\_\_\_\_\_ DAY 1  # TIMES per WEEK 2  MONTH 3  YEAR 4 | } | (GO TO 5) |
| --- | --- | --- |

| 2. \_\_\_\_\_\_\_\_ HOURS 1 DAY 1  DAYS 2 per WEEK 2  WEEKS 3 MONTH 3  MONTHS 4 YEAR 4 |
| --- |

BOX CHI-42

IF NUMERATOR IN 2 = 1 (HOURS), THEN GO TO BOX CHI-44.

IF NUMERATOR IN 2 = 2-4 (DAYS, WEEKS, MONTHS), GO TO 5.

3. \_\_\_\_\_\_\_\_\_\_ (GO TO CHI-15f)

PERCENT

4. / (GO TO CHI-15f)

FRACTION

5. Each time you did this, how long, on average, were you there?

\_\_\_\_\_\_\_\_\_\_ MINUTES 1

HOURS 2

DK 8

BOX CHI-43

IF DENOMINATOR IN 1 = 1-3 (DAY, WEEK, MONTH), GO TO 6.

IF DENOMINATOR IN 1 = 4 (YEAR), GO TO CHI-15f.

BOX CHI-44

IF DENOMINATOR IN 2 = 4 (YEAR), GO TO CHI-15f.

6. Did you do this year round?

YES 1 (GO TO CHI-15f)

NO 2

DK 8 (GO TO CHI-15f)

7. How many (DAYS/WEEKS/MONTHS) a year did you do this?

DAYS/WEEKS/MONTHS |\_\_\_|\_\_\_|\_\_\_|

DK 998

f. What else did you do?

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

DK

BOX CHI-45

IF CHI-7 ≠ 03 (PRODUCTION), ASK CHI-16. ELSE, GO TO CHI-20.

CHI-16. On average, how often were you in a production area of the plant?

| NEVER 00000  DID, DK HOW OFTEN 99996  DK 99998 | } | (GO TO BOX CHI-49) |
| --- | --- | --- |

| 1. \_\_\_\_\_\_\_\_ DAY 1  # TIMES per WEEK 2  MONTH 3  YEAR 4 | } | (GO TO 5) |
| --- | --- | --- |

| 2. \_\_\_\_\_\_\_\_ HOURS 1 DAY 1  DAYS 2 per WEEK 2  WEEKS 3 MONTH 3  MONTHS 4 YEAR 4 |
| --- |

BOX CHI-46

IF NUMERATOR IN 2 = 1 (HOURS), THEN GO TO BOX CHI-48.

IF NUMERATOR IN 2 = 2-4 (DAYS, WEEKS, MONTHS), GO TO 5.

3. \_\_\_\_\_\_\_\_\_\_ (GO TO BOX CHI-49)

PERCENT

4. / (GO TO BOX CHI-49)

FRACTION

5. Each time you were in a production area, how long, on average, were you there?

\_\_\_\_\_\_\_\_\_\_ MINUTES 1

HOURS 2

DK 8

BOX CHI-47

IF DENOMINATOR IN 1 = 1-3 (DAY, WEEK, MONTH), GO TO 6.

IF DENOMINATOR IN 1 = 4 (YEAR), GO TO BOX CHI-49.

BOX CHI-48

IF DENOMINATOR IN 2 = 4 (YEAR), GO TO BOX CHI-49.

6. Were you there year round?

YES 1 (GO TO BOX CHI-49)

NO 2

DK 8 (GO TO BOX CHI-49)

7. How many (DAYS/WEEKS/MONTHS) a year were you there?

DAYS/WEEKS/MONTHS |\_\_\_|\_\_\_|\_\_\_|

DK 998

BOX CHI-49

IF CHI-16 > 5 HOURS PER WEEK, ASK CHI-17. ELSE, GO TO BOX CHI-50.

CHI-17. What were other workers doing in the production area where you spent most of your time?

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

DK

CHI-18. What chemicals were being made here?

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

DK

BOX CHI-50

IF CHI-16 < 80% of C13 (HRS/WK), ASK CHI-19. ELSE, GO TO CHI-20.

CHI-19. What were other workers doing where you spent most of your time when you weren't in a production area?

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

DK

CHI-20. How often did you have chemicals on your hands?

| NEVER 00000  DID, DK HOW OFTEN 99996  DK 99998 | (GO TO CHI-22)  (GO TO 7)  (GO TO CHI-22) |
| --- | --- |

| 1. \_\_\_\_\_\_\_\_ DAY 1  # TIMES per WEEK 2  MONTH 3  YEAR 4 | } | (GO TO BOX CHI-51) |
| --- | --- | --- |

| 2. \_\_\_\_\_\_\_\_ HOURS 1 DAY 1  DAYS 2 per WEEK 2  WEEKS 3 MONTH 3  MONTHS 4 YEAR 4 | } | (GO TO BOX CHI-51) |
| --- | --- | --- |

3. \_\_\_\_\_\_\_\_\_\_ (GO TO 7)

PERCENT

4. / (GO TO 7)

FRACTION

BOX CHI-51

IF DENOMINATOR IN 1 OR 2 = 4 (YEAR), GO TO 7. ELSE, GO TO 5.

5. Did this happen year round?

YES 1 (GO TO 7)

NO 2

DK 8 (GO TO 7)

6. How many (DAYS/WEEKS/MONTHS) a year did this happen?

DAYS/WEEKS/MONTHS |\_\_\_|\_\_\_|\_\_\_|

DK 998

7. Each time you had chemicals on your hands, how much time passed before you washed it off?

|\_\_\_|\_\_\_|\_\_\_| MINUTES 1

HOURS 2

DAYS 3

AT LUNCH TIME 4

AT END OF THE DAY 5

BOTH AT LUNCH AND

END OF THE DAY 6

DK 8

BOX CHI-52

IF CHI-20 > 0 HOURS PER WEEK, ASK CHI-21. OTHERWISE, SKIP TO CHI-22.

CHI-21. What were the chemicals?

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

DK

CHI-22. How often did you smell chemicals?

| NEVER 00000  DID, DK HOW OFTEN 99996  DK 99998 | (GO TO CHI-24)  (GO TO 8)  (GO TO CHI-24) |
| --- | --- |

| 1. \_\_\_\_\_\_\_\_ DAY 1  # TIMES per WEEK 2  MONTH 3  YEAR 4 | } | (GO TO 5) |
| --- | --- | --- |

| 2. \_\_\_\_\_\_\_\_ HOURS 1 DAY 1  DAYS 2 per WEEK 2  WEEKS 3 MONTH 3  MONTHS 4 YEAR 4 | } | (GO TO BOX CHI-53) |
| --- | --- | --- |

3. \_\_\_\_\_\_\_\_\_\_ (GO TO 8)

PERCENT

4. / (GO TO 8)

FRACTION

5. Each time you smelled them, for how long, on average, did you smell them?

|\_\_\_|\_\_\_|\_\_\_| MINUTES 1

HOURS 2

DAYS 3

DK 8

BOX CHI-53

IF DENOMINATOR IN 1 OR 2 = 4 (YEAR), GO TO 8. ELSE, GO TO 6.

6. Did this happen year round?

YES 1 (GO TO 8)

NO 2

DK 8 (GO TO 8)

7. How many (DAYS/WEEKS/MONTHS) a year did this happen?

DAYS/WEEKS/MONTHS |\_\_\_|\_\_\_|\_\_\_|

DK 998

8. How strong was the smell?

Slight 1

Moderate 2

Strong 3

DK 8

BOX CHI-54

IF CHI-22 > 1 HOUR PER WEEK, ASK CHI-23. ELSE, GO TO CHI-24.

CHI-23. What chemicals did you smell?

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

DK

CHI-24. Were there any parts of the process that were dusty?

YES 1

NO 2

DK 8

BOX CHI-55

IF CHI-24 = 1 (YES), ASK CHI-25. ELSE, GO TO CHI-27.

CHI-25. What kind of dust was it?

DK

CHI-26. How dusty was it?

Slightly dusty 1

Moderately dusty 2

Very dusty 3

DK 8

CHI-27. Did you wear any protective clothing or equipment?

YES 1

NO 2 (END MODULE)

DK 8 (END MODULE)

CHI-28. What protective clothing or equipment did you wear? (SHOW CARD)

YES NO DK

a. CHEMICAL CARTRIDGE RESPIRATOR 1 2 8

b. AN AIR-SUPPLIED OR SCUBA RESPIRATOR 1 2 8

c. SIMPLE DUST MASK 1 2 8

d. GLOVES 1 2 8

e. APRON OR SPECIAL CLOTHING 1 2 8

f. OTHER TYPE OF RESPIRATOR 1 2 8

BOX CHI-56

IF CHI-28a = 1 (YES), ASK CHI-29a. OTHERWISE, GO TO BOX CHI-57.

CHI-29.

a. What tasks did you do while you were wearing a chemical cartridge respirator?

YES NO DK

a. Taking samples? 1 2 8

b. Cleaning equipment? 1 2 8

c. Loading or unloading on top of car or truck? 1 2 8

d. Packing or packaging? 1 2 8

e. Other? (IDENTIFY) 1 2 8

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

BOX CHI-57

IF CHI-28b = 1 (YES), ASK CHI-29b. OTHERWISE, GO TO BOX CHI-58.

b. What tasks did you do while you were wearing an air-supplied or scuba respirator?

YES NO DK

a. Taking samples? 1 2 8

b. Cleaning equipment? 1 2 8

c. Loading or unloading on top of car or truck? 1 2 8

d. Packing or packaging? 1 2 8

e. Other? (IDENTIFY) 1 2 8

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

BOX CHI-58

IF CHI-28c = 1 (YES), ASK CHI-29c. OTHERWISE, GO TO BOX CHI-59.

c. What tasks did you do while you were wearing a simple dust mask?

YES NO DK

a. Taking samples? 1 2 8

b. Cleaning equipment? 1 2 8

c. Loading or unloading on top of car or truck? 1 2 8

d. Packing or packaging? 1 2 8

e. Other? (IDENTIFY) 1 2 8

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

BOX CHI-59

IF CHI-28d = 1 (YES), ASK CHI-29d. OTHERWISE, GO TO BOX CHI-60.

d. What tasks did you do while you were wearing gloves?

YES NO DK

a. Taking samples? 1 2 8

b. Cleaning equipment? 1 2 8

c. Loading or unloading on top of car or truck? 1 2 8

d. Packing or packaging? 1 2 8

e. Other? (IDENTIFY) 1 2 8

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

BOX CHI-60

IF CHI-28e = 1 (YES), ASK CHI-29e. OTHERWISE, GO TO BOX CHI-61.

e. What tasks did you do while you were wearing an apron or special clothing?

YES NO DK

a. Taking samples? 1 2 8

b. Cleaning equipment? 1 2 8

c. Loading or unloading on top of car or truck? 1 2 8

d. Packing or packaging? 1 2 8

e. Other? (IDENTIFY) 1 2 8

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

BOX CHI-61

IF CHI-28f = 1 (YES), ASK CHI-29f. OTHERWISE, END MODULE.

f. What tasks did you do while you were wearing an other type of respirator?

YES NO DK

a. Taking samples? 1 2 8

b. Cleaning equipment? 1 2 8

c. Loading or unloading on top of car or truck? 1 2 8

d. Packing or packaging? 1 2 8

e. Other? (IDENTIFY) 1 2 8

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