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NATIONAL OCCUPATIONAL HEALTH SURVEY OF MINING

ASBESTOS REPORT

FEBRUARY 4, 1988

COMMENTS SHOULD BE DIRECTED TO

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INTRODUCTION

This is one of a series of reports on the National Occupational Health Survey of Mining (NOHSM), which is being carried out by the National Institute for Occupational Safety and Health (NIOSH). This particular report provides NOHSM data for the asbestos commodity, which was surveyed during May, June, and July, 1984. Four asbestos mines were surveyed; these were the only active operations listed by MSHA when the sample was drawn. The NOHSM began in May, 1984, as an effort by NIOSH to obtain representative data related to occupational health from the mining industry. The data collected were similar to the information previously obtained in non-mining studies. Specifically, NOHSM data include:

- a. Occupational health program and policy information;
- b. An inventory of all health-related substances found on mine property; and
- c. A series of worksite observations which detail potential exposure to chemical and physical agents.

These data are being collected by surveyors who travel to each mine site. The survey sites have been chosen so as to provide a statistically valid representation of each commodity at the time of the NOHSM sample selection. With this representative sample, NIOSH can project survey data to the entire mining industry.

The NOHSM is being carried out primarily as a service to the Mine Safety and Health Administration (MSHA), and secondarily as a source of information for NIOSH investigators and other interested parties. MSHA plans to use the data for three purposes:

1. To set regulatory priorities and write improved health standards;
2. To improve compliance with existing standards; and
3. To identify and determine research needs and priorities.

This transfer of information to MSHA is mandated by Section 201 of the 1977 Federal Mine Safety and Health Amendments Act.

This report identifies potential exposures and provides the associated numbers of workers, the occupations of those workers, and the locations on the mine property where the potential exposures were observed. This information is categorized into seven tables: four concerning chemical agents; one concerning musculoskeletal overload conditions; one physical exposure conditions; and one welding processes. Estimated annual usage information is provided for chemical substances, both generic and tradenames. As noted on page 5, several other types of data were gathered under the survey protocol, including laboratory analyses of a portion of the bulk dust taken from several locations at each operation. While the bulk dust analyses are not reported in these tables, it should be understood that, as would be expected, asbestos fibers were identified in ninety-five percent of the analyzed bulk dust samples from the asbestos mines.

For the asbestos commodity, Table 1 contains 7 chemicals which were found on mine property and are regulated by MSHA. During the 4 surveys, no chemicals were encountered which would be displayed in Table 2 (chemicals found on mine property that have a NIOSH recommended exposure limit but are not regulated by MSHA). Seven chemicals were found which have no NIOSH or MSHA exposure limit (Table 3). Table 4 lists 190 tradename products to which workers in the asbestos commodity were found to be potentially exposed. Table 5 describes potential exposures to noise, process related temperature and whole-body vibration, the only physical agents observed by the surveyor. Table 6 lists potential exposures to the following 10 musculoskeletal conditions: prone or supine lying; sitting; frequent lifting; awkward lifting; heavy lifting; neck and/or back; wrist; lower limb; fingers and hands; and the forearm, arm, and shoulder. Table 7 indicates the three welding processes: arc welding, oxyfuel gas cutting, and electric iron soldering, which were observed to be used in the asbestos commodity.

It is extremely important that the limitations of the reported data be recognized. The data do not in any way document exposures or exposure levels. The data only indicate potential exposures. The term "potential exposure" means the agent was observed to be present at one or more worksites in such a way that there was a possibility of workers being exposed to the agent.

Likewise, the usage data presented in some of the tables are only a guide to the projected magnitude of usage and should not be taken as precise information. The usage data are based on estimates provided by mine management. It is expected that these estimates have widely varying accuracy. Occasionally, an item may be represented as having an annual usage of zero with workers observed to be potentially exposed. This may occur because annual usage estimates are generally based on purchases of the 12 months immediately preceding a survey. Therefore, items purchased prior to that 12 month period may be represented as having a zero annual usage rate even though potential exposures were observed during the survey. Other zero annual usage occurrences could involve recyclable items such as some catalysts and desiccants, items such as paints and coatings which are applied prior to the 12 month period but which are present in the workplace in such a way as to present a potential exposure, and obsolete items which are no longer actively used on the property but to which employees could still be potentially exposed in the course of their work. Furthermore, all the estimates were rounded to the nearest whole number, with all quantities between 0 and 1 being reported as 1. Thus, extremely small usage levels may actually be lower than estimated. With this possible exception, NIOSH believes the relative magnitude to be appropriately represented.

Another limitation to be observed is the terminology associated with the commodity, occupation, and location. These terms were adapted directly from MSHA information and applied by NIOSH. NIOSH recognizes that other parties may prefer other commodity, occupation, or location terminology. The MSHA terms were used because of MSHA's close interest in the data.

A separate report will be prepared for each commodity surveyed as a part of the NOHSM. During each year of the NOHSM, approximately 150 mining operations are surveyed as the sample from a number of selected commodities. A different set of commodities is surveyed during each year.

NIOSH plans for use of these data in the future include:

- a. Encourage MSHA use of the data, as outlined above;
- b. Determine the ranges of exposure to various agents, as required by Section 201 of the 1977 Federal Mine Safety and Health Amendments Act;
- c. Assist in setting priorities for mine-related occupational health research; and
- d. Respond to questions from other parties regarding occupational health aspects of the mining industry.

Information beyond that presented in this report has been collected during the NOHSM. All of the information not protected by trade secret claims is available to the public upon detailed written request. Other categories of available information include:

- a. Management policies related to occupational health;
- b. Duration of potential exposures;
- c. Operations associated with potential exposures;
- d. Controls employed with potential exposures; and
- e. Results of bulk dust analyses for silica, metals, and fibers.

Interested parties should direct their requests to:

Project Officer
National Occupational Health Survey of Mining
NIOSH
Division of Respiratory Disease Studies
944 Chestnut Ridge Road, Room 140
Morgantown, WV 26505-2888

TABLE DEFINITIONS

<u>AGENT NAME</u>	(1)	(2)	(3)	(4)	(5)	(6)
	<u># WORKERS POTENTIALLY EXPOSED (OBSERVED)</u>	<u># WORKERS POTENTIALLY EXPOSED (PREDICTED)</u>	<u>% WORKERS POTENTIALLY (PREDICTED)</u>	<u>PREDICTED ANNUAL USAGE</u>	<u>OCCUPATIONS</u>	<u>LOCATIONS</u>

Column (1) represents the total number of workers in occupations within this commodity in which a potential exposure to an agent was observed or identified through questioning of mine management or workers. This number only includes workers from the NOHSM sample sites. A "potential exposure" means the agent was observed to be present at the worksite in such a way that there was a possibility of workers being exposed to the agent. The potential exposures do not imply any exposure level, nor do they imply the absence or presence of controls.

Column (2) represents the number of workers within this commodity predicted to be potentially exposed to each agent. This number reflects a projection to this entire commodity, based on data obtained at NOHSM sample sites.

Column (3) represents the percentage of workers within this commodity predicted to be potentially exposed to each agent. Column (3) is obtained by dividing column (2) by the projected total population of workers in the commodity.

Column (4) represents the number of gallons (GAL) or the number of pounds (LBS) of each chemical that NIOSH has estimated to be used per year. This number is obtained from projections based on estimates of usage provided by mine management, and should only be used in determining the order of magnitude of usage. It should not be used as a precise figure. This number reflects a projection to this entire commodity, based on data obtained at NOHSM sample sites. In some cases, where usage data was unavailable, a "*" appears in this column.

Column (5) contains the occupations observed to have a potential for exposure to this agent. In each occupation, the percentage of workers with a potential for exposure to the agent is given in parentheses. This number only includes data obtained at NOHSM sample sites.

Column (6) contains the locations where workers were observed to have a potential for exposure to this agent at the NOHSM sample sites. The percentage of workers in each listed location with a potential exposure to the agent is given in parentheses. This number only includes data obtained at NOHSM sample sites.

TABLE 1, PAGE 1 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

MSHA REGULATED CHEMICALS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

CHEMICAL NAME	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
ACETIC ACID	9	9	2	1 GALS. 192,000 LBS.	010 SURFACE MILL (6%)
(5) OCCUPATIONS					
779 PELLETIZING OPERATIONS WORKER (100%)				782 FRONT-END LOADER OPTR (15%)	
ACETONE	3	3	<1	313 LBS.	009 SURFACE MISC (8%)
(5) OCCUPATIONS					
514 LABORATORY TECHNICIAN (20%)					
ACETYLENE	57	57	13	92,154 GALS. 192,322 LBS.	010 SURFACE MILL (6%) 006 SURFACE CRUSHING (24%) 005 SURFACE SHOP (62%)
(5) OCCUPATIONS					
604 MECHANIC (.71%)				618 GREASER; OILER (8%)	
619 WELDER (.40%)				804 PLUMBER; PIPE FTR; MILLWRT (96%)	
POLYCHLORINATED BIPHENYL	2	2	<1	0 GALS.	010 SURFACE MILL (1%)
(5) OCCUPATIONS					
602 ELECTRICIAN (20%)					

TABLE 1, PAGE 2 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

MSHA REGULATED CHEMICALS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

CHEMICAL NAME	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
PROPANE	42	42	9	52,920 GALS.	
(5) OCCUPATIONS					
389 FORKLIFT OPTR (100%)			413 JANITOR (100%)		005 SURFACE SHOP (21%)
604 MECHANIC (29%)			616 LABORER; BULLGANG (40%)		009 SURFACE MISC (32%)
649 ADMN, SUPERVISORY, MGT PERSNL (5%)			674 WAREHOUSEMAN; SUPPLY HANDLER (54%)		010 SURFACE MILL (11%)
682 SCRAPER-LOADER OPTR (100%)			782 FRONT-END LOADER OPTR (15%)		
879 BAGGING OR PACKING WRKR (25%)					
HYDROGEN CHLORIDE	3	3	<1	16 GALS.	
(5) OCCUPATIONS					
514 LABORATORY TECHNICIAN (20%)					(6) LOCATIONS
					009 SURFACE MISC (8%)
MAPP	3	3	<1	1,120 LBS.	
(5) OCCUPATIONS					
619 WELDER (30%)					(6) LOCATIONS
					010 SURFACE MILL (2%)

TABLE 2, PAGE 1 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

CHEMICALS FOUND ON MINE PROPERTY THAT HAVE A NIOSH RECOMMENDED EXPOSURE LIMIT BUT ARE NOT REGULATED BY MSHA

COMMODITY NAME: ASBESTOS

CHEMICAL NAME	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE
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NO DATA FOR THIS TABLE IN THIS COMMODITY

TABLE 3, PAGE 1 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

CHEMICALS FOUND ON MINE PROPERTY THAT HAVE NO NIOSH RECOMMENDATION OR MSHA EXPOSURE LIMIT

COMMODITY NAME: ASBESTOS

CHEMICAL NAME	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
DIESEL FUEL NO. 2	108	108	24	1,173,400 GALS.	
(5) OCCUPATIONS					
368 BULLDOZER OPTR (42%)			375 ROAD GRADER OPTR (100%)		010 SURFACE MILL (4%)
376 TRUCK DRIVER (100%)			379 DRYER OPTR; KILN OPTR (75%)		005 SURFACE SHOP (22%)
604 MECHANIC (29%)			616 LABORER; BULLGANG (33%)		009 SURFACE MISC (14%)
618 GREASER; OILER (67%)			634 ROTARY DRILL OPTR (100%)		004 SURFACE MINE (68%)
682 SCRAPER-LOADER OPTR (100%)			747 SCALING (HAND OR MECHANICAL) (100%)		
782 FRONT-END LOADER OPTR (55%)			807 POWDER GANG; BLASTER (25%)		
DENATURED ALCOHOL					
	5	5	1	55 GALS.	
(5) OCCUPATIONS					
514 LABORATORY TECHNICIAN (33%)					009 SURFACE MISC (14%)
AMMONIUM NITRATE					
	3	3	<1	919,000 LBS.	
(5) OCCUPATIONS					
807 POWDER GANG; BLASTER (75%)					004 SURFACE MINE (3%)

TABLE 3, PAGE 2 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

CHEMICALS FOUND ON MINE PROPERTY THAT HAVE NO NIOSH RECOMMENDATION OR MSHA EXPOSURE LIMIT

COMMODITY NAME: ASBESTOS

CHEMICAL NAME	(1) #/WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #/WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
NATURAL GAS	9	9	2	13,502,685 LBS.	
(5)					
OCCUPATIONS					
779 PELLETIZING OPERATIONS WORKER (100%)	9	9	2	744,000 LBS.	010 SURFACE MILL (6%)
(6)					
SODIUM SILICATE					
(5)					
OCCUPATIONS					
779 PELLETIZING OPERATIONS WORKER (100%)	9	9	2	744,000 LBS.	010 SURFACE MILL (6%)
(6)					
GASOLINE, LEADED					
(5)					
OCCUPATIONS					
604 MECHANIC (17%)	8	8	2	9,000 GALS.	010 SURFACE MILL (6%)
(6)					
GASOLINE-UNLEADED					
(5)					
OCCUPATIONS					
604 MECHANIC (29%)	17	17	4	58,500 GALS.	005 SURFACE SHOP (22%)
618 GREASER; OILER (25%)					006 SURFACE CRUSHING (6%)
616 LABORER; BULLGANG (7%)					
782 FRONT-END LOADER OPTR (5%)					

TABLE 4, PAGE 1 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY		COMMODITY NAME: ASBESTOS		
MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE
A.P.DESANNO & SONS INC.	23	23	5	10 LBS.
RADIAC				
(5) OCCUPATIONS				(6) LOCATIONS
804 PLUMBER; PIPE FTR; MILLWRT (96%)				005 SURFACE SHOP (32%)
A.W.CHESTERTON CO.				
SPRAGRIP	5	5	1	1 GALS.
(5) OCCUPATIONS				(6) LOCATIONS
514 LABORATORY TECHNICIAN (33%)				010 SURFACE MILL (4%)
SPRAGRIP NO. 80308 (AEROSOL)				
	1	1	<1	144 LBS.
(5) OCCUPATIONS				(6) LOCATIONS
660 MACHINIST (50%)				005 SURFACE SHIP (1%)

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TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
ADHESIVES, COATINGS AND SEALERS DIV./3M					
SCOTCH-GRIP INSULATION ADHESIVE (CLEAR)	34	12	3	68 GALS.	
(5) OCCUPATIONS					
782 FRONT-END LOADER OPTR (15%)			879 BAGGING OR PACKING WRKR (25%)		010 SURFACE MILL (9%)
SCOTCH-GRIP 1357 CONTACT CEMENT	8	8	2	2 GALS.	
(5) OCCUPATIONS					
604 MECHANIC (17%)			618 GREASER; OILER (8%)		010 SURFACE MILL (6%)
AIR COMPRESSOR ENGINEERING					
ALMASOL 500	5	5	1	55 GALS.	
(5) OCCUPATIONS					
634 ROTARY DRILL OPTR (50%)					(6) LOCATIONS 004 SURFACE MINE (4%)

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
AIRCO, INC	3	3	<1	300 LBS.	010 SURFACE MILL (2%)
7014					
OCCUPATIONS					
619 WELDER (30%)					

ALLPURE CHEMICAL COMPANY

GENERIC BLEACH	1	1	<1	18 GALS.	009 SURFACE MISC (3%)
OCCUPATIONS					
413 JANITOR (100%)					

AMALIE REFINING COMPANY DIVISION OF WITCO CHEMICALS CORPORATION

WHEEL BEARING GREASE NA-2 NLGI NO 2	1	1	<1	30 LBS.	005 SURFACE SHOP (1%)
OCCUPATIONS					
660 MACHINIST (50%)					

TABLE 4, PAGE 4 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS		(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
AMERICAN HARDWARE SUPPLY COMPANY	WHITE ACRYLIC LATEX CAULK	22	22	5	36 LBS.	005 SURFACE SHOP (30%)
OCCUPATIONS						
604 MECHANIC (54%)						
AMERICAN SUPPLY	EZ-BOWL	3	3	<1	6 GALS.	009 SURFACE MISC (8%)
OCCUPATIONS						
616 LABORER; BULLGANG (20%)						
AMERICAN SUPPLY COMPANY	CLEANER WITH BLEACHING ACTION	3	3	<1	18 LBS.	009 SURFACE MISC (8%)
OCCUPATIONS						
616 LABORER; BULLGANG (20%)						

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
58123 58122	1	1	<1	10 LBS.	

(5) OCCUPATIONS					
660 MACHINIST (50%)					005 SURFACE SHOP (1%)

ARM & HAMMER DIV OF CHURCH & DWIGHT CO. INC.					
ARM & HAMMER PURE BAKING SODA	1	1	<1	24 LBS.	

(5) OCCUPATIONS					
616 LABORER; BULLGANG (7%)					005 SURFACE SHOP (1%)

ASIA GRINDING WHEEL CO. LTD					
A46Q QUALIPY BRAND	1	1	<1	2 LBS.	

(5) OCCUPATIONS					
660 MACHINIST (50%)					005 SURFACE SHOP (1%)

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
ATLAS POWDER COMPANY SUBSIDIARY OF TYLER CORPORATION				
CORDEAU DETONANT FUSE #30	1	1	<1	625 LBS.
<u>(5)</u> OCCUPATIONS				
807 POWDER GANG; BLASTER (25%)				004 SURFACE MINE (<1%)
DECKMASTERS				
	1	1	<1	100 LBS.
<u>(5)</u> OCCUPATIONS				
807 POWDER GANG; BLASTER (25%)				004 SURFACE MINE (<1%)
KLEEN KUT				
	1	1	<1	300 LBS.
<u>(5)</u> OCCUPATIONS				
807 POWDER GANG; BLASTER (25%)				004 SURFACE MINE (<1%)
OXIDIZER 1320				
	1	1	<1	810,420 LBS.
<u>(5)</u> OCCUPATIONS				
807 POWDER GANG; BLASTER (25%)				004 SURFACE MINE (<1%)

TABLE 4, PAGE 7 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
PELLITE	1	1	<1	150 LBS.	004 SURFACE MINE (<1%)
OCCUPATIONS					
807 POWDER GANG; BLASTER (25%)					
POWER PRIMER	1	1	<1	30,000 LBS.	004 SURFACE MINE (<1%)
OCCUPATIONS					
807 POWDER GANG; BLASTER (25%)					
POWERMAX 840	1	1	<1	720 LBS.	004 SURFACE MINE (<1%)
OCCUPATIONS					
807 POWDER GANG; BLASTER (25%)					
ROCKMASTER ELECTRIC BLASTING CAP	1	1	<1	200 LBS.	004 SURFACE MINE (<1%)
OCCUPATIONS					
807 POWDER GANG; BLASTER (25%)					

TABLE 4, PAGE 8 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
1 1/4 INCH X 8 GIANT GELATIN	1	1	<1	2,400 LBS.	004 SURFACE MINE (<1%)

(5) OCCUPATIONS					
807 POWDER GANG; BLASTER (25%)					

BALKAMP INC.

NAPA BATTERY CLEANER NO. 765-1304 (AEROSOL)	4	4	<1	24 LBS.	(6) LOCATIONS

(5) OCCUPATIONS					
616 LABORER; BULLGANG (7%)					005 SURFACE SHOP (5%)

BELTRACTION CO

BUTTERCUTT #91458	1	1	<1	5 GALS.	(6) LOCATIONS

(5) OCCUPATIONS					
660 MACHINIST (50%)					005 SURFACE SHOP (1%)

TABLE 4, PAGE 9 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
BULLARD STEELER GOLD TYPE 20961	1	1	<1	1 LBS.	

(5) OCCUPATIONS 660 MACHINIST (50%)					005 SURFACE SHOP (1%)

CALIFORNIA OIL RECYCLERS WASTE OIL	4	4	<1	810,000 GALS.	

(5) OCCUPATIONS 379 DRYER OPTR; KILN OPTR (25%)					010 SURFACE MILL (3%)

CATERPILLAR TRACTOR CO. CATERPILLAR LIQUID GASKET MATERIAL 7M7260	2	2	<1	10 LBS.	

(5) OCCUPATIONS 618 GREASER; OILER (17%)					010 SURFACE MILL (1%)

TABLE 4, PAGE 10 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
CERTANIUM 706	3	3	<1	322 LBS.	
(5) OCCUPATIONS					
619 WELDER (30%)					005 SURFACE SHOP (4%)
CERTANIUM 100	3	3	<1	10 LBS.	
(5) OCCUPATIONS					
619 WELDER (30%)					005 SURFACE SHOP (4%)
CERTANIUM 707 SP	3	3	<1	471 LBS.	
(5) OCCUPATIONS					
619 WELDER (30%)					005 SURFACE SHOP (4%)
CERTANIUM 889	3	3	<1	101 LBS.	
(5) OCCUPATIONS					
619 WELDER (30%)					005 SURFACE SHOP (4%)

CERTANIUM ALLOYS & RESEARCH CO.

TABLE 4, PAGE 11 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
267 HARDFACING ROD	3	3	<1	50 LBS.	005 SURFACE SHOP (4%)

(5) OCCUPATIONS					
619 WELDER (30%)					

CHASE PRODUCTS CO.					
SPRAY PAK INSTITUTIONAL FORMULA HE 1	1	1	<1	1,728 LBS.	(6) LOCATIONS
AVY DUTY GLASS CLEANER (AEROSOL)					

(5) OCCUPATIONS					
413 JANITOR (100%)					

CHEVRON U.S.A. INC.					
ATF DEXTRON 2	23	23	5	5,000 GALS.	(6) LOCATIONS

(5) OCCUPATIONS					
604 MECHANIC (29%)					
618 GREASER; OILER (83%)					

616 LABORER; BULLGANG (7%)					

004 SURFACE MINE (4%)					
005 SURFACE SHOP (22%)					
010 SURFACE MILL (1%)					

TABLE 4, PAGE 12 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
AW 220 MACHINE OIL	2	2	<1	16,000 GALS.	
(5) OCCUPATIONS					
618 GREASER; OILER (17%)					010 SURFACE MILL (1%)
AW 32 HYDRAULIC OIL	2	2	<1	4,000 GALS.	
(5) OCCUPATIONS					
618 GREASER; OILER (17%)					010 SURFACE MILL (1%)
AW 46 HYDRAULIC	2	2	<1	1,400 GALS.	
(5) OCCUPATIONS					
618 GREASER; OILER (17%)					010 SURFACE MILL (1%)
AW 68 HYDRAULIC OIL	2	2	<1	2,000 GALS.	
(5) OCCUPATIONS					
618 GREASER; OILER (17%)					010 SURFACE MILL (1%)

TABLE 4, PAGE 13 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
CHEVRON NL GEAR COMPOUND 68 OCCUPATIONS	2	2	<1	4,000 GALS.	010 SURFACE MILL (1%)
618 GREASER; OILER (17%)					
GST TURBINE OIL OCCUPATIONS	2	2	<1	700 GALS.	010 SURFACE MILL (1%)
618 GREASER; OILER (17%)					
GST 32 TRBINE OIL OCCUPATIONS	2	2	<1	1,400 GALS.	010 SURFACE MILL (1%)
618 GREASER; OILER (17%)					
NO. 325 SOLVENT OCCUPATIONS	13	13	3	1,500 GALS.	005 SURFACE SHOP (18%)
604 MECHANIC (29%)			616 LABORER; BULLGANG (7%)		

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
NO. 5 TORQUE FLUID	20	20	5	6,000 GALS.	
(5) OCCUPATIONS					
604 MECHANIC (29%)		616 LABORER; BULLGANG (20%)			005 SURFACE SHOP (25%)
618 GREASER; OILER (42%)					010 SURFACE MILL (1%)
SOLVENT NO. 325	6	6	1	5,000 GALS.	
(5) OCCUPATIONS					
613 CLEANUP MAN (16%)					010 SURFACE MILL (4%)
ZINC LUBRICANT	5	5	1	750 LBS.	
(5) OCCUPATIONS					
634 ROTARY DRILL OPTR (50%)					004 SURFACE MINE (4%)
10-30W MOTOR OIL	10	10	2	755 GALS.	
(5) OCCUPATIONS					
376 TRUCK DRIVER (2%)			413 JANITOR (100%)		

(CONTINUED NEXT PAGE)

TABLE 4, PAGE 15 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
10-30W MOTOR OIL (CONTINUED)	10	10	2	755 GALS.	
OCCUPATIONS					
674 WAREHOUSEMAN; SUPPLY HANDLER (54%)		782	FRONT-END LOADER OPTR (5%)		009 SURFACE MISC (16%) 010 SURFACE MILL (2%) 006 SURFACE CRUSHING (6%)
100-40W DELO MOTOR OIL	10	10	2	11,000 GALS.	
OCCUPATIONS					
616 LABORER; BULLGANG (13%)		618	GREASER; OILER (67%)		004 SURFACE MINE (4%) 005 SURFACE SHOP (7%)
150X VISTAC	2	2	<1	2,500 GALS.	
OCCUPATIONS					
616 LABORER; BULLGANG (13%)					005 SURFACE SHOP (3%)

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
300-10W DELO MOTOR OIL	23	23	5	4,000 GALS.	
(5)					
OCCUPATIONS					
604 MECHANIC (29%)			616 LABORER; BULLGANG (20%)		004 SURFACE MINE (4%)
618 GREASER; OILER (67%)					005 SURFACE SHOP (25%)
400-30W DELO MOTOR OIL	57	57	13	11,000 GALS.	
(5)					
OCCUPATIONS					
368 BULLDOZER OPTR (58%)			376 TRUCK DRIVER (64%)		005 SURFACE SHOP (22%)
604 MECHANIC (29%)			616 LABORER; BULLGANG (33%)		004 SURFACE MINE (34%)
618 GREASER; OILER (25%)			807 POWDER GANG; BLASTER (25%)		
80-90W GEAR LUBE	15	15	3	300 GALS.	
(5)					
OCCUPATIONS					
604 MECHANIC (29%)			616 LABORER; BULLGANG (20%)		005 SURFACE SHOP (21%)

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
80-90W GEAR OIL	2	2	<1	700 GALS.	
<hr/>					
(5) OCCUPATIONS					
618 GREASER; OILER (17%)					010 SURFACE MILL (1%)
<hr/>					
COLGATE-PALMOLIVE CO.					
AJAX WITH CHLORINE BLEACH CLEANER	6	6	1	16 LBS.	
<hr/>					
(5) OCCUPATIONS					
616 LABORER; BULLGANG (40%)					004 SURFACE MINE (3%) 005 SURFACE SHOP (3%)
<hr/>					
COLGATE-PALMOLIVE COMPANY					
AJAX WITH BLEACH THE FOAMING CLEAN SER	1	1	<1	135 LBS.	
<hr/>					
(5) OCCUPATIONS					
413 JANITOR (100%)					009 SURFACE MISC (3%)

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
CONOCO INC	57	57	13	500 GALS.	
ANTIFREEZE AND COOLANT					
(5) OCCUPATIONS					
368 BULLDOZER OPTR (42%)					005 SURFACE SHOP (30%)
376 TRUCK DRIVER (33%)					004 SURFACE MINE (29%)
634 ROTARY DRILL OPTR (50%)					
807 POWDER GANG; BLASTER (25%)					

CRC CHEMICALS INC

SILICONE #05074 AEROSOL	22	22	5	45 LBS.	
(5) OCCUPATIONS					(6) LOCATIONS
604 MECHANIC (54%)					005 SURFACE SHOP (30%)

5-56 AEROSOL

(5) OCCUPATIONS	29	29	7	59 GALS.	(6) LOCATIONS
602 ELECTRICIAN (30%)					
604 MECHANIC (54%)					

(CONTINUED NEXT PAGE)

TABLE 4, PAGE 19 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
5-56 AEROSOL (CONTINUED)	29	29	7	59 GALS.	
OCCUPATIONS					
619 WELDER (30%)			660 MACHINIST (50%)		010 SURFACE MILL (4%) 005 SURFACE SHOP (32%)

CRC CHEMICALS USA

CO CONTACT CLEANER NO. 02016 EROSOL	(A) 7	7	2	100 LBS.	(6) LOCATIONS
OCCUPATIONS					
602 ELECTRICIAN (50%)			618 GREASER; OILER (17%)		010 SURFACE MILL (5%)
CRC SILICONE NO. 02094 MULTI-USE L UBRICANT (AEROSOL)	2	2	<1	162 LBS.	(6) LOCATIONS
OCCUPATIONS					
618 GREASER; OILER (17%)					010 SURFACE MILL (1%)

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS		(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
LECTRA-CLEAN NO. 02018 (AEROSOL)	6	6	6	1	325 LBS.	010 SURFACE MILL (4%) 005 SURFACE SHOP (1%)
OCCUPATIONS						
602 ELECTRICIAN (50%)				660 MACHINIST (50%)		
DACO ABRASIVES						
A24R GRINDING WHEEL	4	4	4	<1	2 LBS.	
OCCUPATIONS						
619 WELDER (30%)				660 MACHINIST (50%)		010 SURFACE MILL (2%) 005 SURFACE SHOP (1%)
DAP INC.						
DERUSTO GALV.A.GRIP G-31 WHITE	8	8	8	2	0 GALS.	
OCCUPATIONS						
604 MECHANIC (17%)				618 GREASER; OILER (8%)		010 SURFACE MILL (6%)

TABLE 4, PAGE 21 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
DAYTON ELECTRIC MFG CO					
METAL CUT-OFF WHEEL #5X604	1	1	<1	2 LBS.	005 SURFACE SHOP (1%)
(5)					
OCCUPATIONS					
660 MACHINIST (50%)					
(5)					
DIAGRAPH-BRADLEY INDUSTRIES INC					
ROLLER SYSTEM STENCIL INK	1	1	<1	5 GALS.	009 SURFACE MISC (3%)
(5)					
OCCUPATIONS					
674 WAREHOUSEMAN; SUPPLY HANDLER (8%)					
(5)					
DIAGRAPH-BRADLY INDUSTRIES INC					
INK RED #0824-050	1	1	<1	4 GALS.	009 SURFACE MISC (3%)
(5)					
OCCUPATIONS					
674 WAREHOUSEMAN; SUPPLY HANDLER (8%)					

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS DOW CORNING CORP.	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS 005 SURFACE SHOP (4%)
SILASTIC 732 RTV ADHESIVE/SEALANT	3	3	<1	86 LBS.	
(5)					
OCCUPATIONS					
618 GREASER; OILER (25%)					

DOW CORNING CORPORATION

SILASTIC 732 RTV ADHESIVE/SEALANT	24	24	5	937 GALS.	(6) LOCATIONS 005 SURFACE SHOP (33%)
(5)					
OCCUPATIONS					
804 PLUMBER; PIPE FTR; MILLWRT (100%)					

DRESSER INDUSTRIES, INC.

DRESSER FA222	8	8	2	25 LBS.	(6) LOCATIONS 010 SURFACE MILL (6%)
(5)					
OCCUPATIONS					
604 MECHANIC (17%)					
618 GREASER; OILER (8%)					

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
E. I. DUPONT DE NEMOURS & CO. INC. DETA DRIVE BOOSTER	2	2	<1	4,881 LBS.	004 SURFACE MINE (2%)

(5) OCCUPATIONS 807 POWDER GANG; BLASTER (50%)					
DUPONT ANFO P	3	3	<1	25,000 LBS.	004 SURFACE MINE (3%)

(5) OCCUPATIONS 807 POWDER GANG; BLASTER (75%)					
DUPONT TOVEX E881	3	3	<1	1,184,000 LBS.	004 SURFACE MINE (3%)

(5) OCCUPATIONS 807 POWDER GANG; BLASTER (75%)					
DUPONT TOVEX 930	2	2	<1	1,700 LBS.	004 SURFACE MINE (2%)

(5) OCCUPATIONS 807 POWDER GANG; BLASTER (50%)					

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
ELECTO-PRODUCTS DIVISION/3M					
SCOTCH 3M 1602 LVI-SPRAY RED ELECT RICAL GRADE	5	5	1	30 LBS.	
OCCUPATIONS					
602 ELECTRICIAN (50%)					010 SURFACE MILL (4%)
ENGELHARD MINERALS AND CHEMICALS DIVISION					
SOL SPEEDI DRI ABSORBENT	31	31	7	2,000 LBS.	
OCCUPATIONS					
601 CONVEYOR BELT CREW (100%)					004 SURFACE MINE (8%) 005 SURFACE SHOP (30%)
604 MECHANIC (54%)					
ENSIGH BICKFORD CO.					
DETONATING CORD	2	2	<1	619 LBS.	
OCCUPATIONS					
807 POWDER GANG; BLASTER (50%)					004 SURFACE MINE (2%)

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
ESCHEM INC					
SWIFT ADHESIVES AND COATINGS	1	1	<1	110 GALS.	
(5) OCCUPATIONS					
674 WAREHOUSEMAN; SUPPLY HANDLER (8%)					009 SURFACE MISC (3%)
WH2 42928 OIG	1	1	<1	275 GALS.	
(5) OCCUPATIONS					
674 WAREHOUSEMAN; SUPPLY HANDLER (8%)					009 SURFACE MISC (3%)
WM3 46303 OIF	1	1	<1	275 LBS.	
(5) OCCUPATIONS					
674 WAREHOUSEMAN; SUPPLY HANDLER (8%)					009 SURFACE MISC (3%)
EXXON					
CARROT OIL	8	8	2	110 GALS.	
(5) OCCUPATIONS					
604 MECHANIC (17%)					010 SURFACE MILL (6%)
618 GREASER; OILER (8%)					

TABLE 4, PAGE 27 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
FEDERATED METALS CORP. ROSIN CORE SOLDER 60/40	5	5	1	12 LBS.	010 SURFACE MILL (4%)
(5) OCCUPATIONS 602 ELECTRICIAN (50%)					
FRANK W. DUNNE CO. DUNNE DUN-TEC GLOSS ENAMEL 1586 CL ASSIC GRAY	6	6	1	100 GALS.	010 SURFACE MILL (4%)
(5) OCCUPATIONS 613 CLEANUP MAN (16%)					
FREYLUBE CORP. FREYLUB NORIMRUST	1	1	<1	150 LBS.	005 SURFACE SHOP (1%)
(5) OCCUPATIONS 616 LABORER; BULLIGANG (7%)					

TABLE 4, PAGE 28 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
COMMODITY NAME: ASBESTOS					
GENERAL ELECTRIC					
GLYPTAL 1201-A RED	3	3	<1	5 LBS.	
(5) OCCUPATIONS					
602 ELECTRICIAN (30%)					010 SURFACE MILL (2%)
GREASWEEP WESTERN					
GREASEWEEP RICE HULL ASH	5	5	1	2,000 LBS.	
(5) OCCUPATIONS					
616 LABORER; BULLGANG (13%)					005 SURFACE SHOP (7%)
GULF OIL CORPORATION					
AUTOMATIC TF DEXRON 2	1	1	<1	110 GALS.	
(5) OCCUPATIONS					
375 ROAD GRADER OPTR (100%)					004 SURFACE MINE (<1%)

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
GULFCROWN GREASE EP NO 1	71	71	16	1,500 LBS.	
(5)					
OCCUPATIONS					
079 CRUSHER OPTR (50%)					005 SURFACE SHOP (30%)
375 ROAD GRADER OPTR (100%)					010 SURFACE MILL (16%)
604 MECHANIC (54%)					004 SURFACE MINE (23%)
618 GREASER; OILER (8%)					
747 SCALING (HAND OR MECHANICAL) (100%)					
807 POWDER GANG; BLASTER (25%)					
GULFCROWN GREASE EP NO 2	75	75	17	1,500 LBS.	
(5)					
OCCUPATIONS					
368 BULLDOZER OPTR (42%)					005 SURFACE SHOP (30%)
379 DRYER OPTR; KILN OPTR (75%)					010 SURFACE MILL (16%)
604 MECHANIC (54%)					004 SURFACE MINE (26%)
618 GREASER; OILER (8%)					
747 SCALING (HAND OR MECHANICAL) (100%)					
GULFCUT SOLUBLE S-PO-TE	1	1	<1	5 GALS.	
(5)					
OCCUPATIONS					
660 MACHINIST (50%)					005 SURFACE SHOP (1%)

TABLE 4, PAGE 30 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
GULFLUBE XHD SAE 30	61	61	14	8,250 GALS.	
OCCUPATIONS					
368 BULLDOZER OPTR (42%)		375 ROAD GRADER OPTR (100%)			005 SURFACE SHOP (30%)
376 TRUCK DRIVER (33%)		604 MECHANIC (54%)			010 SURFACE MILL (<1%)
618 GREASER; OILER (8%)		634 ROTARY DRILL OPTR (50%)			004 SURFACE MINE (32%)
747 SCALING (HAND OR MECHANICAL) (100%)		782 FRONT-END LOADER OPTR (40%)			
807 POWDER GANG; BLASTER (25%)					
HARMONY 68 AW					
	1	1	<1	2,750 GALS.	
OCCUPATIONS					
618 GREASER; OILER (8%)					010 SURFACE MILL (<1%)
MULTI-PURPOSE GEAR LUBE 80W/90					
	28	28	6	1,600 GALS.	
OCCUPATIONS					
375 ROAD GRADER OPTR (100%)		379 DRYER OPTR; KILN OPTR (75%)			010 SURFACE MILL (5%)
601 CONVEYOR BELT CREW (100%)		618 GREASER; OILER (8%)			004 SURFACE MINE (18%)
747 SCALING (HAND OR MECHANICAL) (100%)		782 FRONT-END LOADER OPTR (40%)			

TABLE 4, PAGE 31 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
ROCK DRILL 32 G-A-SP-A-TP	5	5	1	110 GALS.	
OCCUPATIONS					(6) LOCATIONS
634 ROTARY DRILL OPTR (50%)					004 SURFACE MINE (4%)
SUPER PREMIUM 10W/40	22	22	5	24 GALS.	
OCCUPATIONS					(6) LOCATIONS
604 MECHANIC (54%)					005 SURFACE SHOP (30%)
XHD SAE 10 W	17	17	4	8,250 GALS.	
OCCUPATIONS					(6) LOCATIONS
376 TRUCK DRIVER (33%)					010 SURFACE MILL (<1%)
807 POWDER GANG; BLASTER (25%)				618 GREASER; OILER (8%)	004 SURFACE MINE (13%)
H.B. REED AND CO. INC					
BLACK BEAUTY SLAG PRODUCTS	22	22	5	500 LBS.	
OCCUPATIONS					(6) LOCATIONS
604 MECHANIC (54%)					005 SURFACE SHOP (30%)

TABLE 4, PAGE 32 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
HEIN-WERNER CORPORATION					
HYDRAULIC JACK OIL #60179	44	44	10	5 GALS.	
(5) OCCUPATIONS					
368 BULLDOZER OPTR (42%)			375 ROAD GRADER OPTR (100%)		005 SURFACE SHOP (30%)
604 MECHANIC (54%)			634 ROTARY DRILL OPTR (50%)		004 SURFACE MINE (18%)
747 SCALING (HAND OR MECHANICAL) (100%)			782 FRONT-END LOADER OPTR (40%)		
HERCULES CHEMICAL COMPANY, INC.					
HERCULES PRO DOPE PIPE JOINT COMPO UND	1	1	<1	1 GALS.	
(5) OCCUPATIONS					
804 PLUMBER; PIPE FTR; MILLWRT (4%)					(6) LOCATIONS
HUDCO INDUSTRIAL PRODUCTS, INC					
CRL EPOXY ADHESIVE HARDENER	22	22	5	5 GALS.	
(5) OCCUPATIONS					
604 MECHANIC (54%)					(6) LOCATIONS
					005 SURFACE SHOP (30%)

TABLE 4, PAGE 33 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
CRL EPOXY ADHESIVE RESIN	22	22	5	5 GALS.	
(5) OCCUPATIONS					
604 MECHANIC (54%)					005 SURFACE SHOP (30%)
IMPERIAL OIL/ DIV. OF BEATRICE FOODS CO.					
MOLUB ALLOY 777	16	16	4	5,525 LBS.	
(5) OCCUPATIONS					
604 MECHANIC (29%) 618 GREASER; OILER (25%)					(6) LOCATIONS 005 SURFACE SHOP (22%)
IMPERIAL OIL, DIV. OF BEATRICE FOODS CO.					
MOLB-ALLOY OPEN GEAR GREASE 777	2	2	<1	1,400 GALS.	
(5) OCCUPATIONS					
618 GREASER; OILER (17%)					(6) LOCATIONS 010 SURFACE MILL (1%)

TABLE 4, PAGE 34 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
MOLUB-ALLOY 690 GEAR OIL	2	2	<1	2,000 GALS.	
(5) OCCUPATIONS					
618 GREASER; OILER (17%)					010 SURFACE MILL (1%)

JOHNS-MANVILLE SALES CORP.

INSULKOTE ET SUMMER GRADE	7	7	2	15 GALS.	
(5) OCCUPATIONS					
604 MECHANIC (17%)					(6) LOCATIONS 010 SURFACE MILL (5%)

KLEEN BLAST DIVISION OF LEISURE INVESTMENT CO.

KLEEN BLAST ALL PURPOSE ABRASIVE	3	3	<1	3,600 LBS.	
(5) OCCUPATIONS					
616 LABORER; BULLGANG (20%)					(6) LOCATIONS 009 SURFACE MISC (8%)

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
KLIX CHEMICAL CO., INC.	3	3	<1	5 GALS.	009 SURFACE MISC (8%)
MINTOX					
OCCUPATIONS					
616 LABORER; BULLGANG (20%)					

LOCTITE CORP.

LOCTITE PST PIPE SEALANT NO. 56747	1	1	<1	7 LBS.	005 SURFACE SHOP (1%)
OCCUPATIONS					
804 PLUMBER; PIPE FTR; MILLWRT (4%)					

PERMATEX GASKET REMOVER

PERMATEX GASKET REMOVER	2	2	<1	10 LBS.	010 SURFACE MILL (1%)
OCCUPATIONS					
618 GREASER; OILER (17%)					

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
LOCTITE CORPORATION AVIATION 3D LIQUID FORM-A-GASKET	3	3	<1	4 GALS.	010 SURFACE MILL (2%)
(5)					
OCCUPATIONS	-----				
602 ELECTRICIAN (30%)	-----				
(5)					
HYDRAULIC JACK OIL # 78E	44	44	10	10 GALS.	005 SURFACE SHOP (30%) 004 SURFACE MINE (18%)
(5)					
OCCUPATIONS	-----				
368 BULLDOZER OPTR (42%)	-----				
604 MECHANIC (54%)	-----				
747 SCALING (HAND OR MECHANICAL) (100%)	-----				
		375 ROAD GRADER OPTR (100%)			
		634 ROTARY DRILL OPTR (50%)			
		782 FRONT-END LOADER OPTR (40%)			
(5)					
SILICONE FORM-A-GASKET RTV BLUE	3	3	<1	5 LBS.	010 SURFACE MILL (2%)
(5)					
OCCUPATIONS	-----				
602 ELECTRICIAN (30%)	-----				

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
MALCO					
SC-1077 STEAM CLEANER	25	25	6	60 LBS.	
OCCUPATIONS					
602 ELECTRICIAN (30%)			604 MECHANIC (54%)		010 SURFACE MILL (2%) 005 SURFACE SHOP (30%)

MARSH STENCIL

MARSH ROLMARK CLEANER-SOLVENT FOR ROLLER STENCIL INK	12	12	3	2 GALS.	
OCCUPATIONS					
782 FRONT-END LOADER OPTR (15%)			879 BAGGING OR PACKING WRKR (25%)		010 SURFACE MILL (9%)

POLY ROLMARK
ACK

POLY ROLMARK ROLLER STENCIL INK BL	12	12	3	6 GALS.	
OCCUPATIONS					
782 FRONT-END LOADER OPTR (15%)			879 BAGGING OR PACKING WRKR (25%)		010 SURFACE MILL (9%)

TABLE 4, PAGE 39 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
MARVEL OIL COMPANY INC.					
MARVEL MYSTERY OIL TOP CYLINDER LU 6 BRICATION	6	6	1	12 GALS.	
OCCUPATIONS					
616 LABORER; BULLGANG (7%)		618 GREASER; OILER (42%)			005 SURFACE SHOP (1%) 004 SURFACE MINE (4%)
MCKAY MFC CO.					
426 WHEEL BEARING & U JOINT GREASE	8	8	2	15 LBS.	
OCCUPATIONS					
604 MECHANIC (17%)		618 GREASER; OILER (8%)			010 SURFACE MILL (6%)
MCKAY TELDYNE MCKAY					
MCKAY ELECTRODES E-6011	27	27	6	100 LBS.	
OCCUPATIONS					
619 WELDER (40%)		804 PLUMBER; PIPE FTR; MILLWRT (96%)			006 SURFACE CRUSHING (24%) 005 SURFACE SHOP (32%)

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
MOBIL OIL CORPORATION					
ATF 220	1	1	<1	110 GALS.	004 SURFACE MINE (<1%)

(5) OCCUPATIONS					
375 ROAD GRADER OPTR (100%)					

BLOCKGREASE RA5F97567	6	6	1	50 LBS.	

(5) OCCUPATIONS					(6) LOCATIONS
379 DRYER OPTR; KILN OPTR (75%)					010 SURFACE MILL (4%)

LUBRITE SAE 40	1	1	<1	55 GALS.	

(5) OCCUPATIONS					(6) LOCATIONS
674 WAREHOUSEMAN; SUPPLY HANDLER (8%)					009 SURFACE MISC (3%)

10 W MS DG SF 24L5	1	1	<1	1 GALS.	

(5) OCCUPATIONS					(6) LOCATIONS
660 MACHINIST (50%)					005 SURFACE SHOP (1%)

TABLE 4, PAGE 41 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
MOTHER LODE WHOLESale, INC.	6	6	1	12 GALS.	004 SURFACE MINE (3%) 005 SURFACE SHOP (3%)
PINTEX					
(5) OCCUPATIONS					
616 LABORER; BULLGANG (40%)					
SIERRA PINETEX	1	1	<1	30 GALS.	
(5) OCCUPATIONS					(6) LOCATIONS
413 JANITOR (100%)					009 SURFACE MISC (3%)
NAPA					
NAPA 209514 REFRIGERANT 12	8	8	2	720 LBS.	
(5) OCCUPATIONS					(6) LOCATIONS
604 MECHANIC (17%)					010 SURFACE MILL (6%)
618 GREASER; OILER (8%)					

TABLE 4, PAGE 42 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS		(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
NATIONAL CHEMSEARCH CORPORATION						
NC-123		3	3	<1	0 LBS.	
(5)						
OCCUPATIONS						
602 ELECTRICIAN (30%)						010 SURFACE MILL (2%)
(5)						
SS-25 SOLVENT DEGREASER						
		3	3	<1	35 GALS.	
(5)						
OCCUPATIONS						
602 ELECTRICIAN (30%)						010 SURFACE MILL (2%)
(5)						
NEVER-SEEZ COMPOUND CO.						
NEVER-SEEZ ANTI-SEIZE AND LUBRICATING COMPOUND NO. NSBT-8		13	13	3	216 LBS.	
(5)						
OCCUPATIONS						
604 MECHANIC (29%)						005 SURFACE SHOP (18%)
						616 LABORER; BULLGANG (7%)

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
NEVER-SEEZ COMPOUND CORP.					
NEVER-SEEZ ANTI-SEIZE AND LUBRICATING COMPOUND # NS BT-8	10	10	2	6 LBS.	
OCCUPATIONS					
602 ELECTRICIAN (20%)			604 MECHANIC (17%)		
618 GREASER; OILER (8%)					010 SURFACE MILL (7%)
NORTH AMERICAN DELCAR INC					
SILICONE SPRAY #623 AEROSOL	22	22	5	45 LBS.	
OCCUPATIONS					
604 MECHANIC (54%)					005 SURFACE SHOP (30%)
NORTON					
GENERAL PURPOSE SAUCER 9-1/4 IN.	10	10	2	120 LBS.	
OCCUPATIONS					
604 MECHANIC (17%)			619 WELDER (30%)		005 SURFACE SHOP (14%)

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
ONOX INC.					
ONOX PROTECTIVE HANDCREAM	2	2	<1	27 LBS.	
(5) OCCUPATIONS					
618 GREASER; OILER (17%)					010 SURFACE MILL (1%)
PERRY MANUFACTURING					
LIQUID PERRY LP-20	13	13	3	100 GALS.	
(5) OCCUPATIONS					
604 MECHANIC (29%)			616 LABORER; BULLGANG (7%)		(6) LOCATIONS 005 SURFACE SHOP (18%)
PPG INDUSTRIES, INC.					
INTERIOR MACHINERY ENAMEL 23-830 S AFETY WHITE	3	3	<1	12 GALS.	
(5) OCCUPATIONS					
616 LABORER; BULLGANG (20%)					(6) LOCATIONS 009 SURFACE MISC (8%)

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
RAYBESTOS MANHATTAN					
DOT 3 MOTOR VEHICLE BRAKE FLUID	8	8	2	4 GALS.	
OCCUPATIONS					
604 MECHANIC (17%)		618 GREASER; OILER (8%)			010 SURFACE MILL (6%)

RELTON CORP.

A-9 ALUMINUM CUTTING FLUID	8	8	2	1 GALS.	
OCCUPATIONS					
604 MECHANIC (17%)		618 GREASER; OILER (8%)			010 SURFACE MILL (6%)

RELTON CORPORATION

RAPID TAP CUTTING FLUID	1	1	<1	16 GALS.	
OCCUPATIONS					
660 MACHINIST (50%)					005 SURFACE SHOP (1%)

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
REMACO INC. REMA TIP TOP SELF VULCANIZING REPA IR MATERIALS NO. 204 (5) OCCUPATIONS 616 LABORER; BULLGANG (7%)	1	<1	<1	1 GALS.	005 SURFACE SHOP (1%)
RUST-OLEUM CORP. 769 DAMP-PROOF RED PRIMER (5) OCCUPATIONS 616 LABORER; BULLGANG (20%)	3	3	<1	12 GALS.	009 SURFACE MISC (8%)
RUST-OLEUM CORPORATION READY MIXED ALUMINUM ROOF PAINT (5) OCCUPATIONS 602 ELECTRICIAN (30%)	25	25	6	50 GALS.	010 SURFACE MILL (2%) 005 SURFACE SHOP (30%)

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
RUST-OLEUM FAST DRY HARD HAT DARK MACHINE GRAY NO. 2187 (AEROSOL) OCCUPATIONS 602 ELECTRICIAN (50%)	7	7	2	150 LBS.	010 SURFACE MILL (5%)
RUST-OLEUM FAST DRY HARD HAT DEEP BLUE NO. 2125 (AEROSOL) OCCUPATIONS 618 GREASER; OILER (17%)	2	2	<1	60 LBS.	010 SURFACE MILL (1%)
RUST-OLEUM FAST DRY HARD HAT GLOSS WHITE NO. 2192 (AEROSOL) OCCUPATIONS 674 WAREHOUSEMAN; SUPPLY HANDLER (23%)	3	3	<1	280 LBS.	010 SURFACE MILL (2%)
RUST-OLEUM HART HAT FLUORESCENT RED (AEROSOL) OCCUPATIONS 623 SURVEYOR; TRANSIT MAN (100%)	2	2	<1	183 LBS.	004 SURFACE MINE (2%)

TABLE 4, PAGE 49 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
WATERLESS HAND CLEANER 602 (CONTINUED)	120	120	27	2,144 LBS.	006 SURFACE CRUSHING (35%) 010 SURFACE MILL (25%) 009 SURFACE MISC (3%) 004 SURFACE MINE (26%) 005 SURFACE SHOP (64%)
(5) OCCUPATIONS					
616 LABORER; BULLGANG (13%)			618 GREASER; OILER (25%)		
619 WELDER (70%)			634 ROTARY DRILL OPTR (50%)		
660 MACHINIST (100%)			674 WAREHOUSEMAN; SUPPLY HANDLER (8%)		
747 SCALING (HAND OR MECHANICAL) (100%)			782 FRONT-END LOADER OPTR (40%)		
804 PLUMBER; PIPE FTR; MILLWRT (96%)					

SAFETY-KLEEN CORP.

SPRAY PENTRANT 611 SAFETY-KLEEN (A 42 42 9 1,000 LBS.
EROSOL)

(5) OCCUPATIONS

613 CLEANUP MAN (16%)			618 GREASER; OILER (17%)		
660 MACHINIST (50%)			674 WAREHOUSEMAN; SUPPLY HANDLER (23%)		
804 PLUMBER; PIPE FTR; MILLWRT (100%)			879 BAGGING OR PACKING WRKR (17%)		

STOD 29 29 7 1,400 GALS.

(5) OCCUPATIONS

602 ELECTRICIAN (50%)			604 MECHANIC (29%)		
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(CONTINUED NEXT PAGE)

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
STOD (CONTINUED)	29	29	7	1,400 GALS.	
(5) OCCUPATIONS					
616 LABORER; BULLGANG (40%)		618 GREASER; OILER (25%)			005 SURFACE SHOP (25%) 006 SURFACE CRUSHING (35%)
619 WELDER (33%)					
WATERLESS HAND CLEANER 602	18	18	4	500 LBS.	
(5) OCCUPATIONS					
604 MECHANIC (29%)		616 LABORER; BULLGANG (20%)			005 SURFACE SHOP (25%)
618 GREASER; OILER (25%)					
SERVICISED PRODUCTS CORP.					
PARA-PLASTIC	7	7	2	15 LBS.	
(5) OCCUPATIONS					
604 MECHANIC (17%)					010 SURFACE MILL (5%)

TABLE 4, PAGE 51 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
SHELL OIL CO.					
SHELLZONE ALL SEASON ANTIFREEZE/AN TIBOIL PROTECTION	2	2	<1	15 GALS.	010 SURFACE MILL (1%)
OCCUPATIONS					
618 GREASER; OILER (17%)					
SHELLZONE ALL-SEASON ANTIFREEZE/AN TIBOIL	13	13	3	264 GALS.	005 SURFACE SHOP (18%)
OCCUPATIONS					
604 MECHANIC (29%)					
616 LABORER; BULLGANG (7%)					
SIMONDS					
099-3855	8	8	2	12 LBS.	
OCCUPATIONS					
604 MECHANIC (17%)					
618 GREASER; OILER (8%)					

TABLE 4, PAGE 52 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS SMOOTH-ON INC.	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
METALSET A4 PART A	23	23	5	10 LBS.	
(5) OCCUPATIONS					
804 PLUMBER; PIPE FTR; MILLWRT (96%)					005 SURFACE SHOP (32%)
SMOOTH-ON ADHESIVE CEMENTS METALSE 23					
T A4 PARTB	23	23	5	10 LBS.	
(5) OCCUPATIONS					
804 PLUMBER; PIPE FTR; MILLWRT (96%)					005 SURFACE SHOP (32%)
SNAP-ON TOOLS CORP					
SNAP-ON IM-19 AIR MOTOR OIL	1	1	<1	1 GALS.	
(5) OCCUPATIONS					
616 LABORER; BULLGANG (7%)					005 SURFACE SHOP (1%)

TABLE 4, PAGE 53 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
SPRAYON PRODUCTS					
ALL PURPOSE SILICONE LUBRICANT NO. 15 00206 (AEROSOL)	15	15	3	18 LBS.	
OCCUPATIONS					
613 CLEANUP MAN (16%)			879 BAGGING OR PACKING WRKR (25%)		010 SURFACE MILL (11%)
TEXACO INC.					
TRANSFORMER OIL	3	3	<1	30 GALS.	
OCCUPATIONS					
602 ELECTRICIAN (30%)					010 SURFACE MILL (2%)
TEXAS REFINERY CORP.					
BIG RED CHEMICAL CLEANER	15	15	3	220 GALS.	
OCCUPATIONS					
604 MECHANIC (29%)			616 LABORER; BULLGANG (20%)		005 SURFACE SHOP (21%)

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
THE BLACK AND DECKER MFG CO	1	1	<1	1 LBS.	005 SURFACE SHOP (1%)
3042 ALUMINUM OXIDE					
OCCUPATIONS					
660 MACHINIST (50%)					

THE CARBORUNDUM COMPANY

A60-I6-V30	1	1	<1	2 LBS.	005 SURFACE SHOP (1%)
OCCUPATIONS					
660 MACHINIST (50%)					

THE HENRY COMPANY

HENRY PLASTIC ROOF CEMENT 204	7	7	2	15 GALS.	010 SURFACE MILL (5%)
OCCUPATIONS					
604 MECHANIC (17%)					

TABLE 4, PAGE 55 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
HENRY 220 ALUMINUM FIBER COATING	7	7	2	15 GALS.	
OCCUPATIONS					
604 MECHANIC (17%)					010 SURFACE MILL (5%)
THE LINCOLN ELECTRIC CO.					
FLEETWELD E6013	8	8	2	200 LBS.	
OCCUPATIONS					
604 MECHANIC (17%)					010 SURFACE MILL (6%)
FLEETWELD 5P E6010					
OCCUPATIONS	8	8	2	200 LBS.	
604 MECHANIC (17%)					010 SURFACE MILL (6%)
THE LINCOLN ELECTRIC COMPANY					
FACEWELD 12	3	3	<1	1,000 LBS.	
OCCUPATIONS					
619 WELDER (30%)					010 SURFACE MILL (2%)

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
THE STECO CORPORATION	1	1	<1	1 GALS.	005 SURFACE SHOP (1%)
TAP MAGIC					
OCCUPATIONS					
660 MACHINIST (50%)					

TIG ARC MANUFACTURING CO.

ARC GOUGING CARBONS	3	3	<1	80 LBS.	005 SURFACE SHOP (4%)
OCCUPATIONS					
619 WELDER (30%)					

TIG ARC MANUFACTURING COMPANY

ARC GOUGING CARBONS	23	23	5	60 LBS.	005 SURFACE SHOP (32%)
OCCUPATIONS					
804 PLUMBER; PIPE FTR; MILLWRT (96%)					

TABLE 4, PAGE 57 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
UNIGARD CORPORATION					
ANTIFREEZE 7191 CHEMCRAFT	57	57	13	1,500 GALS.	
OCCUPATIONS					
368 BULLDOZER OPTR (42%)			375 ROAD GRADER OPTR (100%)		005 SURFACE SHOP (30%)
376 TRUCK DRIVER (33%)			604 MECHANIC (54%)		004 SURFACE MINE (29%)
634 ROTARY DRILL OPTR (50%)			782 FRONT-END LOADER OPTR (40%)		
807 POWDER GANG; BLASTER (25%)					
UNION CARBIDE CORP.					
PRESTONE 2 ANTIFREEZE	8	8	2	72 GALS.	
OCCUPATIONS					
604 MECHANIC (17%)			618 GREASER; OILER (8%)		010 SURFACE MILL (6%)
UNION OIL COMPANY OF CALIFORNIA					
ATF DEXRON 2	9	9	2	110 GALS.	
OCCUPATIONS					
604 MECHANIC (17%)			618 GREASER; OILER (8%)		010 SURFACE MILL (6%)

(CONTINUED NEXT PAGE)

TABLE 4, PAGE 58 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
ATF DEXRON 2 (CONTINUED)	9	9	2	110 GALS.	
OCCUPATIONS					
682 SCRAPER-LOADER OPTR (100%)					009 SURFACE MISC (3%)
EXTRA DUTY NL GEAR LUBE AGMA GRADE 1	1	1	<1	400 LBS.	
OCCUPATIONS					
618 GREASER; OILER (8%)					010 SURFACE MILL (<1%)
GUARDOL MOTOR OIL SAE 30	26	26	6	165 GALS.	
OCCUPATIONS					
389 FORKLIFT OPTR (100%)					
616 LABORER; BULLGANG (20%)					
682 SCRAPER-LOADER OPTR (100%)					009 SURFACE MISC (24%)
879 BAGGING OR PACKING WRKR (25%)					010 SURFACE MILL (14%)

TABLE 4, PAGE 59 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
HEAVY DUTY MOTOR OIL 30W	11	11	2	110 GALS.	
(5)					
OCCUPATIONS					
604 MECHANIC (17%)			618 GREASER; OILER (8%)		010 SURFACE MILL (6%)
782 FRONT-END LOADER OPTR (15%)					009 SURFACE MISC (8%)
(5)					
HI-TEMP GREASE-2	1	1	<1	5 LBS.	
(5)					
OCCUPATIONS					
618 GREASER; OILER (8%)					010 SURFACE MILL (<1%)
(5)					
UNAX AW ISO UG 68	20	20	5	550 GALS.	
(5)					
OCCUPATIONS					
604 MECHANIC (17%)			618 GREASER; OILER (8%)		009 SURFACE MISC (8%)
782 FRONT-END LOADER OPTR (15%)			879 BAGGING OR PACKING WRKR (25%)		010 SURFACE MILL (14%)
(5)					
UNION GUARDOL MOTOR OIL SAE 10W	17	17	4	55 GALS.	
(5)					
OCCUPATIONS					
389 FORKLIFT OPTR (100%)			604 MECHANIC (17%)		010 SURFACE MILL (14%)

(CONTINUED NEXT PAGE)

TABLE 4, PAGE 60 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
UNION GUARDOL MOTOR OIL SAE 10W (CONTINUED)	17	17	4	55 GALS.	
(5)					
OCCUPATIONS					
616 LABORER; BULLGANG (20%)			618 GREASER; OILER (8%)		010 SURFACE MILL (6%)
682 SCRAPER-LOADER OPTR (100%)			782 FRONT-END LOADER OPTR (15%)		009 SURFACE MISC (24%)
(5)					
UNOBA EP-2 GREASE	1	1	<1	120 LBS.	
(5)					
OCCUPATIONS					
682 SCRAPER-LOADER OPTR (100%)					009 SURFACE MISC (3%)
(5)					
WAGNER DIV.					
W GNER BRAKE FLUID 21-B SUPER HEAVY DUTY	13	13	3	200 GALS.	
(5)					
OCCUPATIONS					
604 MECHANIC (29%)			616 LABORER; BULLGANG (7%)		005 SURFACE SHOP (18%)

TABLE 4, PAGE 61 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

TRADENAME PRODUCTS FOUND ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MANUFACTURE'S NAME AND TRADENAME PRODUCTS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)	(4) PREDICTED ANNUAL USAGE	(6) LOCATIONS
WD-40 CO.					
WD-40 (AEROSOL)	31	31	7	81 LBS.	
(5) OCCUPATIONS					
602 ELECTRICIAN (20%)		604 MECHANIC (46%)			004 SURFACE MINE (4%)
616 LABORER; BULLGANG (7%)		618 GREASER; OILER (75%)			005 SURFACE SHOP (22%)
					010 SURFACE MILL (7%)
WD-40 COMPANY					
WD-40 NO. 42150 (AEROSOL)	1	1	<1	250 LBS.	
(5) OCCUPATIONS					
660 MACHINIST (50%)					005 SURFACE SHOP (1%)
WESTERN WIRE & ALLOYS					
# 705 ELECTRODE	10	10	2	2,410 LBS.	
(5) OCCUPATIONS					
604 MECHANIC (17%)					005 SURFACE SHOP (14%)
					619 WELDER (30%)

TABLE 5, PAGE 1 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

PHYSICAL AGENT CONDITIONS IDENTIFIED ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

PHYSICAL AGENT CONDITION	#WORKERS POTENTIALLY EXPOSED (OBSERVED)	#WORKERS POTENTIALLY EXPOSED (PREDICTED)	%WORKERS POTENTIALLY EXPOSED (PREDICTED)	LOCATIONS
NOISE	249	249	56	
OCCUPATIONS				
079 CRUSHER OPTR (50%)		368 BULLDOZER OPTR (58%)		006 SURFACE CRUSHING (94%)
376 TRUCK DRIVER (62%)		379 DRYER OPTR; KILN OPTR (100%)		009 SURFACE MISC (62%)
389 FORKLIFT OPTR (100%)		394 CARPENTER (100%)		005 SURFACE SHOP (68%)
413 JANITOR (100%)		488 DRY SCREENING PLANT OPTR (100%)		004 SURFACE MINE (56%)
514 LABORATORY TECHNICIAN (27%)		588 SIZING AND WASHING OPNS WRKR (100%)		010 SURFACE MILL (69%)
601 CONVEYOR BELT CREW (100%)		602 ELECTRICIAN (70%)		
604 MECHANIC (46%)		613 CLEANUP MAN (61%)		
616 LABORER; BULLGANG (100%)		618 GREASER; OILER (100%)		
619 WELDER (70%)		623 SURVEYOR; TRANSIT MAN (100%)		
634 ROTARY DRILL OPTR (50%)		649 ADMN, SUPERVISORY, MGT PERSNL (81%)		
660 MACHINIST (50%)		674 WAREHOUSEMAN; SUPPLY HANDLER (92%)		
682 SCRAPER-LOADER OPTR (100%)		779 PELLETIZING OPERATIONS WORKER (100%)		
782 FRONT-END LOADER OPTR (20%)		804 PLUMBER; PIPE FTR; MILLWRT (100%)		
807 POWDER GANG; BLASTER (75%)		879 BAGGING OR PACKING WRKR (58%)		

TEMPERATURE (PROCESS RELATED)	17	17	4	LOCATIONS
OCCUPATIONS				
379 DRYER OPTR; KILN OPTR (100%)		779 PELLETIZING OPERATIONS WORKER (100%)		010 SURFACE MILL (12%)
782 FRONT-END LOADER OPTR (15%)				

PHYSICAL AGENT CONDITIONS IDENTIFIED ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)
PHYSICAL AGENT CONDITION	206	206	46
WHOLE BODY VIBRATION			

(5)
OCCUPATIONS

- 079 CRUSHER OPTR (75%)
- 375 ROAD GRADER OPTR (100%)
- 379 DRYER OPTR; KILN OPTR (25%)
- 488 DRY SCREENING PLANT OPTR (100%)
- 588 SIZING AND WASHING OPNS WRKR (100%)
- 602 ELECTRICIAN (50%)
- 616 LABORER; BULLGANG (20%)
- 619 WELDER (70%)
- 649 ADMN SUPERVISORY, MGT PERSNL (43%)
- 674 WAREHOUSEMAN; SUPPLY HANDLER (54%)
- 782 FRONT-END LOADER OPTR (95%)
- 807 POWDER GANG; BLASTER (25%)

(6)
LOCATIONS

- 010 SURFACE MILL (43%)
- 006 SURFACE CRUSHING (41%)
- 009 SURFACE MISC (51%)
- 005 SURFACE SHOP (33%)
- 004 SURFACE MINE (81%)

- 368 BULLDOZER OPTR (100%)
- 376 TRUCK DRIVER (96%)
- 389 FORKLIFT OPTR (100%)
- 514 LABORATORY TECHNICIAN (80%)
- 601 CONVEYOR BELT CREW (100%)
- 613 CLEANUP MAN (55%)
- 618 GREASER; OILER (75%)
- 634 ROTARY DRILL OPTR (50%)
- 668 TRACTOR OPTR (100%)
- 682 SCRAPER-LOADER OPTR (100%)
- 804 PLUMBER; PIPE FTR; MILLWRT (100%)

MUSCULOSKELETAL OVERLOAD CONDITIONS IDENTIFIED ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)
MUSCULOSKELETAL CONDITION	104	104	23
FINGER AND HANDS			

(5)
OCCUPATIONS

- 079 CRUSHER OPTR (50%)
- 375 ROAD GRADER OPTR (100%)
- 514 LABORATORY TECHNICIAN (33%)
- 604 MECHANIC (100%)
- 618 GREASER; OILER (58%)
- 634 ROTARY DRILL OPTR (100%)
- 668 TRACTOR OPTR (100%)
- 682 SCRAPER-LOADER OPTR (100%)
- 782 FRONT-END LOADER OPTR (5%)
- 879 BAGGING OR PACKING WRKR (8%)

(6)
LOCATIONS

- 009 SURFACE MISC (27%)
- 004 SURFACE MINE (23%)
- 006 SURFACE CRUSHING (6%)
- 005 SURFACE SHOP (55%)
- 010 SURFACE MILL (22%)

FREQUENT LIFTING

(5)
OCCUPATIONS

- 376 TRUCK DRIVER (2%)
- 613 CLEANUP MAN (29%)
- 782 FRONT-END LOADER OPTR (5%)
- 879 BAGGING OR PACKING WRKR (25%)

(6)
LOCATIONS

- 009 SURFACE MISC (3%)
- 005 SURFACE SHOP (3%)
- 006 SURFACE CRUSHING (29%)
- 004 SURFACE MINE (5%)
- 010 SURFACE MILL (14%)

MUSCULOSKELETAL OVERLOAD CONDITIONS IDENTIFIED ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)
MUSCULOSKELETAL CONDITION	84	84	19
HEAVY LIFTING			

(5)
OCCUPATIONS

376 TRUCK DRIVER (2%)	379 DRYER OPTR; KILN OPTR (75%)	005 SURFACE SHOP (30%)
394 CARPENTER (100%)	514 LABORATORY TECHNICIAN (7%)	009 SURFACE MISC (19%)
601 CONVEYOR BELT CREW (100%)	602 ELECTRICIAN (30%)	004 SURFACE MINE (15%)
604 MECHANIC (54%)	613 CLEANUP MAN (16%)	010 SURFACE MILL (26%)
616 LABORER; BULLGANG (20%)	619 WELDER (30%)	
634 ROTARY DRILL OPTR (50%)	674 WAREHOUSEMAN; SUPPLY HANDLER (31%)	
682 SCRAPER-LOADER OPTR (100%)	747 SCALING (HAND OR MECHANICAL) (100%)	
807 POWDER GANG; BLASTER (25%)	879 BAGGING OR PACKING WRKR (42%)	

(6)
LOCATIONS

005 SURFACE SHOP (30%)
009 SURFACE MISC (19%)
004 SURFACE MINE (15%)
010 SURFACE MILL (26%)

LOWER LIMB

107 107 24

(5)
OCCUPATIONS

079 CRUSHER OPTR (50%)	376 TRUCK DRIVER (2%)	006 SURFACE CRUSHING (47%)
379 DRYER OPTR; KILN OPTR (25%)	488 DRY SCREENING PLANT OPTR (100%)	009 SURFACE MISC (8%)
514 LABORATORY TECHNICIAN (7%)	588 SIZING AND WASHING OPNS WRKR (100%)	005 SURFACE SHOP (45%)
602 ELECTRICIAN (20%)	604 MECHANIC (17%)	004 SURFACE MINE (10%)
613 CLEANUP MAN (45%)	616 LABORER; BULLGANG (47%)	010 SURFACE MILL (36%)
618 GREASER; OILER (50%)	619 WELDER (30%)	
634 ROTARY DRILL OPTR (50%)	674 WAREHOUSEMAN; SUPPLY HANDLER (15%)	
779 PELLETIZING OPERATIONS WORKER (100%)	782 FRONT-END LOADER OPTR (15%)	
804 PLUMBER; PIPE FTR; MILLWRT (100%)	807 POWDER GANG; BLASTER (50%)	
879 BAGGING OR PACKING WRKR (25%)		

(6)
LOCATIONS

006 SURFACE CRUSHING (47%)
009 SURFACE MISC (8%)
005 SURFACE SHOP (45%)
004 SURFACE MINE (10%)
010 SURFACE MILL (36%)

TABLE 6, PAGE 4 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

MUSCULOSKELETAL OVERLOAD CONDITIONS IDENTIFIED ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MUSCULOSKELETAL CONDITION	#WORKERS POTENTIALLY EXPOSED (OBSERVED)	#WORKERS POTENTIALLY EXPOSED (PREDICTED)	%WORKERS POTENTIALLY EXPOSED (PREDICTED)	LOCATIONS
NECK AND/OR BACK	187	187	42	005 SURFACE SHOP (29%) 004 SURFACE MINE (69%) 006 SURFACE CRUSHING (53%) 009 SURFACE MISC (38%) 010 SURFACE MILL (46%)
(5) OCCUPATIONS				
079 CRUSHER OPTR (50%)		368 BULLDOZER OPTR (42%)		
375 ROAD GRADER OPTR (100%)		376 TRUCK DRIVER (98%)		
379 DRYER OPTR, KILN OPTR (75%)		389 FORKLIFT OPTR (100%)		
601 CONVEYOR BELT CREW (100%)		602 ELECTRICIAN (20%)		
604 MECHANIC (46%)		613 CLEANUP MAN (39%)		
616 LABORER; BULLGANG (40%)		618 GREASER; OILER (75%)		
619 WELDER (70%)		649 ADMN SUPERVISORY MGT PERSNL (19%)		
674 WAREHOUSEMAN; SUPPLY HANDLER (54%)		682 SCRAPER-LOADER OPTR (100%)		
782 FRONT-END LOADER OPTR (95%)		879 BAGGING OR PACKING WRKR (75%)		
(5) OCCUPATIONS				
602 ELECTRICIAN (30%)	47	604 MECHANIC (83%)	47	
618 GREASER; OILER (25%)		619 WELDER (70%)		
(5) OCCUPATIONS				
079 CRUSHER OPTR (25%)	45	368 BULLDOZER OPTR (42%)	45	
376 TRUCK DRIVER (33%)		634 ROTARY DRILL OPTR (50%)		
782 FRONT-END LOADER OPTR (55%)		807 POWDER GANG; BLASTER (25%)		
879 BAGGING OR PACKING WRKR (17%)				
(5) OCCUPATIONS				
PRONE OR SUPINE LYING	47		11	
(5) OCCUPATIONS				
602 ELECTRICIAN (30%)		604 MECHANIC (83%)		
618 GREASER; OILER (25%)		619 WELDER (70%)		
(5) OCCUPATIONS				
005 SURFACE SHOP (51%)		006 SURFACE CRUSHING (24%)		
010 SURFACE MILL (4%)		010 SURFACE MILL (4%)		
(5) OCCUPATIONS				
SITTING	45		10	
(5) OCCUPATIONS				
079 CRUSHER OPTR (25%)		368 BULLDOZER OPTR (42%)		
376 TRUCK DRIVER (33%)		634 ROTARY DRILL OPTR (50%)		
782 FRONT-END LOADER OPTR (55%)		807 POWDER GANG; BLASTER (25%)		
879 BAGGING OR PACKING WRKR (17%)				
(5) OCCUPATIONS				
005 SURFACE SHOP (51%)		006 SURFACE CRUSHING (24%)		
010 SURFACE MILL (4%)		010 SURFACE MILL (4%)		

MUSCULOSKELETAL OVERLOAD CONDITIONS IDENTIFIED ON MINE PROPERTY

COMMODITY NAME: ASBESTOS

MUSCULOSKELETAL CONDITION	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)
WRIST	105	105	24

(5)
OCCUPATIONS

368 BULLDOZER OPTR (58%)	376 TRUCK DRIVER (62%)
389 FORKLIFT OPTR (100%)	604 MECHANIC (46%)
616 LABORER; BULLGANG (13%)	618 GREASER; OILER (92%)
619 WELDER (40%)	634 ROTARY DRILL OPTR (50%)
649 ADMN SUPERVISORY MGT PERSNL (19%)	668 TRACTOR OPTR (100%)
674 WAREHOUSEMAN; SUPPLY HANDLER (54%)	782 FRONT-END LOADER OPTR (60%)
804 PLUMBER; PIPE FTR; MILLWRT (4%)	807 POWDER GANG; BLASTER (25%)

(6)
LOCATIONS

010 SURFACE MILL (9%)
006 SURFACE CRUSHING (35%)
009 SURFACE MISC (27%)
005 SURFACE SHOP (25%)
004 SURFACE MINE (49%)

TABLE 7, PAGE 1 NOTE: THIS TABLE DOES NOT CONTAIN DATA CLAIMED TO BE TRADE SECRET.

WELDING POTENTIAL EXPOSURE

COMMODITY NAME: ASBESTOS

WELDING PROCESS	(1) #WORKERS POTENTIALLY EXPOSED (OBSERVED)	(2) #WORKERS POTENTIALLY EXPOSED (PREDICTED)	(3) %WORKERS POTENTIALLY EXPOSED (PREDICTED)
ARC WELDING	48	48	11

(5)
OCCUPATIONS

604 MECHANIC (34%)	618 GREASER; OILER (8%)	006 SURFACE CRUSHING (24%)
619 WELDER (100%)	804 PLUMBER; PIPE FTR; MILLWRT (96%)	010 SURFACE MILL (8%)
		005 SURFACE SHOP (45%)

(6)
LOCATIONS

OXYFUEL GAS CUTTING

(5)
OCCUPATIONS

604 MECHANIC (71%)	618 GREASER; OILER (8%)	006 SURFACE CRUSHING (24%)
619 WELDER (70%)	804 PLUMBER; PIPE FTR; MILLWRT (96%)	010 SURFACE MILL (8%)
		005 SURFACE SHOP (62%)

(6)
LOCATIONS

ELECTRIC IRON-SOLDERING

(5)
OCCUPATIONS

602 ELECTRICIAN (50%)	5	5	1
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(6)
LOCATIONS

010 SURFACE MILL (4%)	1
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REPORT DOCUMENTATION PAGE		1. REPORT NO.	2.	PB90-163676	
4. Title and Subtitle National Occupational Health Survey of Mining, Asbestos Report			5. Report Date 88/02/04		
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15. Supplementary Notes			13. Type of Report & Period Covered		
			14.		
16. Abstract (Limit: 200 words) This report concerned the results of surveys of four asbestos mines (SIC-1499) which were visited during May, June and July of 1984. The data collected were related to occupational health program and policy information in place at these facilities; an inventory of all health related substances found on mine property; and a series of worksite observations detailing potential exposures to chemical and physical agents. The report identified potential exposures and provided the associated numbers of workers, the occupations of those workers, and the locations on the mine property where the potential exposures were observed. This information was categorized into seven tables: four concerning chemical agents; one concerning musculoskeletal overload conditions; one physical exposure conditions; and one welding processes. Estimated annual usage information was provided for chemical substances, both generic and tradenames. Several other types of data were also gathered including laboratory analyses of a portion of the bulk dust taken from several locations at each operation.					
17. Document Analysis a. Descriptors					
b. Identifiers/Open-Ended Terms NIOSH-Publication, Mining-industry, Miners, Occupational-exposure, Musculoskeletal-system, Welders, Asbestos-dust, Occupational-health					
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