

PB83253062

FINAL REPORT ON THE
SAMPLING DESIGN FOR THE OHSMI

VOLUME 3

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NIOSH Contract No. 210-80-0026
JRB Project No. 2-812-03-639

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Centers for Disease Control
National Institute for Occupational Safety and Health
Division of Respiratory Disease Studies
Morgantown, West Virginia 26505

November 1982

REPRODUCED BY:
U.S. Department of Commerce
National Technical Information Service
Springfield, Virginia 22161

NTIS
NATIONAL TECHNICAL INFORMATION SERVICE

REPORT DOCUMENTATION PAGE		1. REPORT NO.	2. NA	3. Recipient's Accession No. PB8 3 253062	
4. Title and Subtitle Final Report on the Sampling Design for the OHSMI Vol. 3 (Occupational Hazard Survey of the Mining Industry)				5. Report Date November 1982	
				6. NA	
7. Author(s) r. katt, g. elias, e. moore				8. Performing Organization Rept. No.	
9. Performing Organization Name and Address JRB Associates 8400 Westpark Drive McLean, VA 22102				10. Project/Task/Work Unit No. NA	
				11. Contract(C) or Grant(G) No. (C) 210-80-0026 (G)	
				12. Sponsoring Organization Name and Address NIOSH 4676 Columbia Parkway Cincinnati, Ohio 45226	
13. Type of Report & Period Covered				14. NA	
15. Supplementary Notes					
16. Abstract (Limit: 200 words) This technical documentation describes the data and programs used in developing Sample Frame #6 from the 1980 MSHA Address and Employment Files, in selecting a stratified sample of metal and nonmetal mines in NIOSH-selected commodity groups, and in producing the forms for data collection from these mines. The detailed system documentation is presented in three sections: (1) construction of the project data base; (2) development of Sampling Frame #6; and (3) selection of the sample for the Occupational Hazard Survey of the Mining Industry.					
17. Document Analysis a. Descriptors mining, statistical-analysis, epidemiology, sampling b. Identifiers/Open-Ended Terms c. COSATI Field/Group					
18. Availability Statement: AVAILABLE TO THE PUBLIC		19. Security Class (This Report) UNCLASSIFIED		21. No. of Pages	
		20. Security Class (This Page) UNCLASSIFIED		22. Price	

CONTENTS

1. Introduction	1
2. Construction of the Project Data Base	5
2.1 MSHA Address and Employment Files	5
2.2 Site Information File	8
2.3 Conversion of Address and Employment Files to Site Information File	9
3. Development of Sampling Frame	11
4. Selection of the OHSMI Prototype II Sample	13

Tables

LIST OF TABLES

1.	Data elements from MSHA Address and Employment files required for development of Site Information File	14
2.	Data elements from MSHA Address and Employment files not required for development of Site Information File	17
3.	MSHA mine identification and FIPS codes for states and U.S. possessions	19
4a.	MSHA SIC codes in numerical order	20
4b.	MSHA SIC codes in alphabetical order	21
5.	Definitions of MSHA operational status codes for coal and metal/nonmetal mining	22
6.	Subunit operation codes for MSHA Address and Employment files	23
7.	Listing of OSH.BOB.CNTL	24
8.	Data elements and file layout for interim conversion file (OSH.RUK.METAL80.SUMADD)	26
9.	Listing of OSH.FOLD.CNTL	29
10.	Data elements and file layout for Site Information File (OSH.RUK.METAL80.WORKFILE)	31
11.	Listing of OSH.BILDSIC.CNTL	34
12.	Data elements and file layout for MTLASIC.DATA and NMSIC.DATA	36
13.	Listing of OSH.FIRST.SRU.DATA	38
14.	Listing of OSH.BILD.AFILE.CNTL	39
15.	Data elements and file layout for ASTRATA.DATA, MTLSTRAT.DATA, NMSTRAT.DATA, MTLSRU.DATA, NMSRU.DATA, and CONCAT.DATA	46
16.	Listing of OSH.BILD.MTLSTRAT.CNTL	49
17.	Listing of OSH.BILD.NMSTRAT.CNTL	54
18.	Listing of OSH.MTLSRU.DATA	59
19.	Listing of OSH.NMSRU.DATA	60
20.	Listing of OSH.BILD.CONCAT.CNTL	61

LIST OF TABLES

21.	Listing of OSH.BILD.XSRU.CNTL	62
22.	Listing of OSH.BILD.SELECT.CNTL	63
23.	Contents of SAS data set INPUT1.SELECT	64
24.	Listing of OSH.BILD.LABELNEW.CNTL	65
25.	Data elements, file layout, and listing of OSH.SICFMT.DATA	68
26.	Data elements, file layout, and listing of OSH.SUBDFMT.DATA	69
27.	Contents of SAS data set INPUT1.LABELNEW	70
28.	Summary of Tables 29-34	71
29a.	Listing of OSH.OSPGM3.DATA	72
29b.	Data elements and file layout for OSH.RUKMNMSY.XFRAME	72
30a.	Listing of OSH.TYPE2S.DATA	73
30b.	Occupational Hazard Survey of the Mining Industry Probability Sample Size Determination	75
31a.	Listing of OSH.TYPE2SF.DATA	76
31b.	Data elements and file layout for OSH.RUKMNMSY.D2ZFIL	77
32a.	Listing of OSH.TYPE2D.DATA	78
32b.	Data elements and file layout for OSH.RUKMNMSY.D2FILEXX	79
33a.	Listing of OSH.TYPE2M.DATA	80
33b.	Contents of SAS data set INPUT1.TABLE2	82
34a.	Listing of OSH.TYPE2W.DATA	83
34b.	Occupational Hazard Survey of the Mining Industry, sample draw October 30, 1982 (copy of Sample Verification form).	84

1. INTRODUCTION

This technical documentation describes the data and programs used in developing Sample Frame #6 from the 1980 MSHA Address and Employment files, in selecting a stratified sample of metal and nonmetal mines in NIOSH-selected commodity groups, and in producing the forms for data collection from these mines.

The detailed system documentation is presented in three sections:

- Construction of the project data base
- Development of Sampling Frame #6
- Selection of the sample for the Occupational Hazard Survey of the Mining Industry.

Figure 1 depicts the computer system's development from the point at which NIOSH provided JRB access to the MSHA data through production of the forms for data collection.

MSHA made computer tapes containing Address and Employment files available to the NIOSH Project Officer, who gave JRB access to the tapes through the Parklawn Computer Center at the National Institutes of Health.

The Address and Employment files contain information on mining industry establishments, including the mine identification number, mine name, geographic location, owner, commodity produced, operating status, types of major operating subunits, and the average number of employees working at each major subunit. There are separate annual MSHA files for the coal and the metal/nonmetal industries with employment data recorded for each calendar quarter. The year-end files contain employment data (and, for coal only, production data) for each calendar quarter and the final update of the address data for that year.

Figure 1. OHSMI data flow.

In constructing the data base for this project, JRB revised the MSHA Address and Employment files to a more useful format. The original records are identified by a unique combination of the seven-digit mine ID and the contractor code (particularly in coal mining, an establishment may have several active contractors or may be operated by different contractors in succession). The revised files (called Site Information Files) have one record for each mine ID. In addition, the quarterly data on numbers of employees were combined to derive an annual average number of employees for each major subunit. Data elements that were not needed for the project have been omitted. The revised record length is 263 characters, compared with 734 characters per record in the original file.

JRB analyzed data from 1976 through the first quarter of 1981 (1976, 1980, and first-quarter 1981 Metal/Nonmetal; 1979 and 1980 Coal) to assist NIOSH in selecting from among the prototype survey designs provided by JRB. The data and programs being delivered as part of this final report are those resulting from the NIOSH decisions to use the Prototype II design on MSHA 1980 Metal/Nonmetal Address and Employment data. In the course of these analyses, data were divided into separate metal and nonmetal files using the commodity Standard Industrial Classification (SIC) codes. For commodity groups selected by NIOSH, these data were further divided into geographic regions within each industry for purposes of stratifying the sampling frame.

The first round of stratified sampling was completed manually (as described in Chapter 2 of Volume 1). Mine ID numbers for these units were entered into a file called FIRST.SRU.DATA (where SRU means self-representing unit) whose contents were verified for accuracy and used to move the records for these units from the sampling frame to a separate file until the balance of the sample was drawn.

The Prototype II sampling programs use annual average non-office employment figures to select (1) a second round of stratified samples and (2) the remaining samples by systematic selection with replacement and with probability

of selection proportional to employment. When the sample draw is complete, data for all units in the sample are combined, additional data elements are pulled from the Site Information File, and an OHSMI sample verification form is produced for each unit in the sample.

2. CONSTRUCTION OF THE PROJECT DATA BASE

2.1 MSHA ADDRESS AND EMPLOYMENT FILES

The MSHA Address and Employment files contain data collected by MSHA field inspectors throughout the United States. Two files per year are constructed: one for all coal mines, another for all metal and nonmetal mines. Each unit record represents the owner, the operator, or a contractor at a mining site. Thus, the file as it originates with MSHA is based on records of employer-entities, more than one of which may be associated with a single mining site. Complete technical documentation for this file has been provided by MSHA to the NIOSH Project Officer.

In addition to the original documentation from MSHA, JRB has prepared a more thorough documentation package for the Address and Employment files, based on our experience with the files in designing the sampling rationale for the Occupational Hazard Survey of the Mining Industry. This technical documentation describes each data element and the layout of each file. Only those data elements of importance to developing the sample frame will be described here.

Each MSHA record consists of two parts. In the first part, or header, 31 data elements provide information on the mining operation and the employer represented by that record. The second part consists of up to four "trailers," with each trailer holding information for one subunit operation under the control of the employer-entity. Up to four subunits can be described in a single record. All trailers have the same five data fields, which contain quarterly employment and production figures.

Each mining or milling site within the United States has a seven-digit identification number assigned by MSHA. This mine identification number (MID) is unique and fixed for each site, regardless of changes in ownership or in mining activity. The first two digits identify the state in which the mine is located; the next five digits are assigned chronologically to mining sites within a state.

There are two other MSHA data elements that may identify the employer at the site: the contractor identification number (CONTRACT) and the 30-character company name of the mine owner (OWNEROP). If the mine owner is not the employer of record, the three-digit CONTRACT code distinguishes among different employers at the site.

The Federal Information Processing Standards (FIPS) codes are used to designate the state and county in which the mining site is physically located. These FIPS state codes differ from the state codes used for the first two digits of the mine identification number; the latter set of codes are numbered sequentially in alphabetical order of each state. (Other data fields allow entry of free text for the mine name, the company name, and the mailing address. Often the mailing address is for an office that is not located at the mining site; thus, the mailing address and zip code can be misleading indicators of the location of the mining site.)

Each record also contains a five-digit code for the primary mineral commodity produced at the mining site. These codes were developed by MSHA from the four-digit Standard Industrial Classification codes and will hereafter be referred to as the MSHA SIC codes.

A single character defines the status of each operation within the site--whether the operation is active and under what conditions. Letters are used for coal mining sites, numbers for metal/nonmetal.

The last data element in the header specifies how many subunit operations, or types of mining activity, are under the control of the employer-entity. The record allows space for description of up to four subunits. The trailer describing each subunit begins with a code specifying the type of operation, such as underground extraction, surface extraction at a site with underground workings, surface extraction without underground workings, preparation plants, and offices. Following the subunit code, there are four 32-character blocks (also called "trailers"). Each block pertains to a calendar quarter and contains a document number, the average number of subunit employees during the quarter, the number of man-hours worked, and (for coal only) the tons of production. This subunit information is repeated for the other subunits at the site, up to the number indicated by the SUBUNIT data element at the end of each record's header.

All data elements in the MSHA Address and Employment files are described in Tables 1* and 2. Codes for the SIC, status, and subunit data elements are listed in Tables 4, 5, and 6.

In summary, the Address and Employment files supply the mine identification number, the FIPS state and county code, and the MSHA SIC code for the individual sites in the surveillance universe. Because of the central importance of these descriptors, the reformatted and edited version of the Address and Employment files is used as the source of all data required for stratifying and sampling the universe to be surveyed. The MSHA Address and Employment files contain information that is basic to developing the sampling frame, selecting a sample, and producing the required sample verification forms. In effect, the files define a complete universe of entities for which surveillance data can be gathered, sorted systematically, and retrieved for analysis.

*All tables are presented at the end of this volume.

2.2 SITE INFORMATION FILE

The Occupational Hazard Survey of the Mining Industry (OHSMI) sample frame consists of mining industry sites as defined by individually assigned MSHA mine identification numbers. Because the MSHA Address and Employment files are based on employer records, a Site Information File was constructed by reformatting and editing the MSHA data. This new file contains one record for each mining site and uses the MSHA mine identification number to identify each record.

To conserve storage space and processing resources, data elements in the original files that are not needed for surveillance were omitted from the Site Information File. The elements presented in Table 1 are required for mining safety and health surveillance. For each element, the code, the code term, the explanation of the term, and the character position in the record are given. Address and Employment data elements that were omitted from the Site Information File are listed in Table 2.

The second portion of the original unit record has been edited in several ways. For each subunit, the code for subunit type and the subunit statistics for numbers of workers and worker hours are retained, but the quarterly data for each subunit are combined to give annual data. The document numbers and the production statistics are deleted. These changes in format shorten the record length considerably.

Systems work on this project was done at the NIH Parklawn Computer Center using the FORTRAN programming language, IBM's Job Control Language (JCL) and Time Sharing Option (TSO), and the Statistical Analysis System (SAS).

Data sets stored on tape or in mass storage (MSS) at Parklawn are named by giving the agency code ("OSH" represents NIOSH) ahead of the account initials ("RUK," the initials for this project). The remainder of the data set name follows in segments of eight or fewer characters divided by periods (i.e., OSH.RUK.METAL80.SUMADD). In general, data set names ending with ".DATA"

contain data; those ending in ".CNTL" contain programs. This convention was not used for the OSHMI sampling programs, whose data set names end with ".DATA" and contain programs. Permanent data sets stored on the disc have this project identification information in reverse and preceded by a \$ sign (i.e., \$RUK.OSH.BILDSIC.CNTL).

2.3 CONVERSION OF ADDRESS AND EMPLOYMENT FILES TO SITE INFORMATION FILE

Once access to MSHA Address and Employment tapes was gained by the NIOSH Project Officer, JRB implemented a two-stage process to convert the Address and Employment data to the Site Information File format.

JCL and SAS code to complete the first stage of this conversion are contained in a TSO data set catalogued as \$RUK.OSH.BOB.CNTL (Table 7). This code selects the desired data elements from the Address and Employment file (catalogued as OSH.RUK.METALADD.YEAR80A) listed in Table 1 and reads this information into a SAS data set. If the number of subunits in a record is not equal to zero, the trailer for each subunit is also read into the system.

The number of quarterly documents is counted to determine the number of quarters in which the subunit had active employment. The quarterly employment figures are then totaled. If the number of documents is not equal to zero, the total employment is divided by the number of documents to obtain the average annual employment by subunit. To complete the first stage of the conversion process, all of the above identification and summary information is reported out to an interim file on magnetic tape, catalogued as OSH.RUK.METAL80.SUMADD. The layout and description for this file are presented in Table 8.

The second-stage code is contained in a TSO data set catalogued as \$RUK.OSH.FOLD.CNTL (Table 9). This code reads all of the information from OSH.RUK.METAL80.SUMADD into a SAS data set, sorts the records by MID, summarizes each site's subunit information by type of subunit operation, and constructs a single unit record for each mine site, retaining the most active STATUS code reported by any contractor at that site.

To complete the second stage of the conversion process, these unit records are reported to a new file on tape, catalogued as OSH.RUK.METAL80A.WORKFILE. The layout and description for this file are presented in Table 10. This file has also been copied into Mass Storage for easier access, and is catalogued as OSH.RUK.METAL80.WORKMSS.

3. DEVELOPMENT OF SAMPLING FRAME #6

Once the Site Information File has been constructed, code in \$RUK.OSH.BILDSIC.CNTL (Table 11) is used to select records for active mines (STATUS EQ 1) and sort them into two new files. Records for mines producing metal commodities (SIC's 10110 through 10942) were sorted by SIC and stored in a TSO data set catalogued as \$RUK.OSH.MTLSIC.DATA (data elements and file layout in Table 12). Records for mines producing nonmetal commodities (SIC's 14530 through 14998) were sorted by SIC and stored in \$RUK.OSH.NMSIC.DATA (data elements and file layout also in Table 12). MTLSIC.DATA and NMSIC.DATA files include all possible records for the sampling frame.

Using data from MTLSIC and NMSIC, geographic strata were developed within each commodity group. Records in each strata were sorted in descending order by size (based on the average annual non-office employment at each site). Lists were printed (see Volume 2, Exhibit 1) to enable manual/visual selection of the first round of self-representing units (SRU's).

The MID of each site included in the first-round selection was entered into TSO data set \$RUK.OSH.FIRST.SRU.DATA and the list was verified for accuracy. The single data element, MID, occupies positions 1-7 in the file. Contents of the file are displayed in Table 13.

Code in \$RUK.OSH.BILD.AFILE.CNTL. (Table 14) is used to remove the already selected sites from the sampling frame. The operator enters the previously assigned GEO code for each record, and uses the FIRST.SRU list to pull appropriate records from MTLSIC and NMSIC files and store them in a new TSO data set catalogued as \$RUK.OSH.ASTRATA.DATA (data elements and file layout in Table 15). Slight modifications to the BILD.AFILE code to delete records for all mines reporting a total non-office employment (NUMAVM) of zero

were made in \$RUK.OSH.BILD.MTLSTRAT.CNTL (Table 16) and \$RUK.OSH.BILD.NMSTRAT.CNTL (Table 17) to create metal (\$RUK.OSH.MTLSTRAT.DATA) and nonmetal (\$RUK.OSH.NMSTRAT.DATA) files of data ready for the Prototype II sampling programs. In addition, strata with fewer than seven sites for probability sampling were set aside in MTLSRU.DATA and NMSRU.DATA (see Tables 18 and 19) until the Prototype II sampling programs had processed. Data elements and file layouts for the MTLSTRAT and NMSTRAT data files are the same as for the ASTRATA.DATA file presented in Table 15.

The code in \$RUK.OSH.BILD.CONCAT.CNTL (Table 20) concatenates the MTLSTRAT.DATA and NMSTRAT.DATA files (retaining the same data elements and file layout) and completes construction of the universe on which the Prototype II programs operate to complete the sampling process.

OSH.BILD.XSRU.CNTL (Table 21) concatenates MTLSRU.DATA and NMSRU.DATA into \$RUK.OSH.XSRU.DATA for later use by OSH.TYPE2M.DATA in building a complete file of sample units before the sample verification forms are generated.

4. SELECTION OF THE OHSMI PROTOTYPE II SAMPLE

The Prototype II sample selection process uses two source SAS data sets and six programs, five written in SAS and one in FORTRAN.

OSH.BILD.SELECT.CNTL (Table 22) uses the data in OSH.CONCAT.DATA (Sample Frame #6 minus the first-round SRU's and the strata leaving less than seven sites for probability sampling) to build OSH.RUKMNMSY.SELECT, a SAS data set whose data elements and file layout are the same as those given for OSH.CONCAT.DATA, except that an additional six-digit variable, STRATUM CODE (SC), is created by combining the five-digit SIC code with the single-digit GEO code (Table 23). This STRATUM code is required for the Prototype II sample selection programs.

OSH.BILD.LABELNEW.CNTL (Table 24) uses data from the METAL80A.WORKFILE and two formatting tables, OSH.SICFMT.DATA and OSH.SUBDFMT.DATA (contents of these tables, data elements, and file layouts are described in Tables 25 and 26, respectively) to build OSH.RUKMNMSY.LABELNEW. LABELNEW is a SAS data set with the same file layout as OSH.RUK.METAL80.WORKMSS (a copy of METAL80A.WORKFILE on mass storage) except names replace numbers for data elements SUB1 through SUB10, and data elements SICNM, SUBDNM, FIPSCTNM, and FIPSSTAB add names for numeric SIC, INSP, CTCD, and STCD codes (see Table 27).

The data set containing each of the six Prototype II sample selection programs is named according to the following convention: \$RUK.OSH.programname.DATA. Functions and products of the programs are summarized in Table 28. Under the labeling convention for Tables 29-34, which relate to each program, "a" is a listing of the program, and "b" describes the program's output.

TABLES

Table 1. Data elements from MSHA Address and Employment files required for development of Site Information File.

CHARACTER POSITIONS	MNEMONIC NAME	DATA ELEMENT	EXPLANATION
1-7	MID	Mine or plant name	Unique MSHA mine site identification number. The first two digits indicate the state; the next five digits are assigned sequentially within a state regardless of whether the site is in coal or metal/nonmetal mining.
8-10	CONTRACT	Contractor	Contractor performing work at the site of the primary mine identification operation. Blank if owner. The identification number is a three-character code--for coal, one letter and two numbers; for metal/nonmetal, three numbers.
11-12	COMPANY	Controlling company	Numeric code for selected major coal and metal/nonmetal producing companies controlling this mining operation.
12-16	INSPECT	Inspection office	Code for MSHA Field Office exercising jurisdiction over the mining operation. First two characters = District. First three characters = Subdistrict. All four characters designate Field office.
17-18	STATE	State code	FIPS code for the state in which the mine site is located (differs from the state code used for the first two digits of the mine identification number). See Table 3.
19-21	COUNTY	County code	FIPS code for the county in which the mine site is located.
22-26	SIC	Standard Industrial Classification	Five-digit code, developed by MSHA from the four-digit SIC codes, that designates the primary mineral commodity produced at a site. See Table 4.

Table 1. Data elements from MSHA Address and Employment files required for development of Site Information File (continued).

CHARACTER POSITIONS	MNEMONIC NAME	DATA ELEMENT	EXPLANATION
30	STATUS	Status code	Code for status of operations at the mine. See Table 5.
31-36	STATDATE	Status date	Date of latest add or change of operating status.
48-77	OWNEROP	Company name	Company that owns or has primary responsibility for the operation of the mining site.
78-107	MINENAME	Mine or plant name	Name applied to the site by the company.
108-137	STREET	Street or P.O. box number	Street or P.O. box of the mailing address for the mining site.
138-150	CITY	City	City in the mailing address for the mine site
151-152	STATE	State abbreviation	State abbreviation for mailing purposes.
153-157	ZIPCODE	Zip code	Zip code of the mailing address for the mining site.
158-181	COUNTYL	County name	Name of county in which mine is located.
210	SUBUNIT	Number of Subunits	Number of subunit operations at the site (maximum of four).
211-212	SUB	Subunit Operation	Code for type of operations in the subunit. See Table 6. Data elements numbered SUB1 through SUB4 for as many as four distinct subunits.
222-226	MENQxSy	Number of men at subunit y during quarter x	Average number of persons working in the subunit during that quarter.

Table 1. Data elements from MSHA Address and Employment files required for development of Site Information File (continued).

CHARACTER POSITIONS	MNEMONIC NAME	DATA ELEMENT	EXPLANATION
227-234	HOURQxRy	Number of man-hours in quarter x for sub-unit y	Total worker-hours worked during the x quarter in each subunit at the mine site as indicated at character position 210.

SOURCE: Technical documentation for the MSHA Address and Employment File

Table 2. Data elements from MSHA Address and Employment files
not required for development of Site Information File.

CHARACTER POSITIONS	MNEMONIC NAME	DATA ELEMENT	EXPLANATION
27	CANVASS	Canvass or class canvass	Designates a general product class based on the MSHA SIC code.
28-29	MINETYPE	Mine type	Metal/nonmetal mine type code based on the subunit operations codes and the canvass.
37-40	HEIGHT	Seam height	Coal seam height in inches. Coded for coal extraction sites only.
41-42	EDUCATE	Education and training district	The MSHA Education and Training District office with jurisdiction over the mining site.
43	INDICATE	Surface/ underground indicator	Indicator for Education and Training District use, showing surface (S) or underground (U) operation.
44-46	TRAVEL	Travel area	Metal/nonmetal inspection travel area. First character is alphabetic followed by two numeric characters.
47	MAILING	Mailing control	Provides for suppression of mailouts; 1 = all mailouts; 2 = suppress selected mailouts.
182	INJURY	Injury flag	Company statement that this company had reportable injuries or illnesses during this report quarter; 1 = yes, 2 = no.
183-185	COUNT	Injury count	Number of reportable accidents and illnesses given on employment form.
213-221	DOCQxSx	Document number for the x report on subunit x	Number assigned to the quarterly report- ing form for a subunit at the site when the report arrives in the HSAC mailroom.

Table 2. Data elements from MSHA Address and Employment files
not required for development of Site Information File
(continued).

CHARACTER POSITIONS	MNEMONIC NAME	DATA ELEMENT	EXPLANATION
200-201	UPDATEA	Update addition year	Year that address information on the site was added to the file.
202-204	UPDATEB	Update addition	Date when address information for the site was first added to the file.
205-206	UPDATEC	Update change year	Year of latest change to address infor- mation for the site.
207-209	UPDATED	Update change number	Update cycle number of the latest change to address information for the site.
235-244	TONSQxSx	Tons of production in quarter x for sub- unit x	Production of clean coal (short tons) during a quarter at a subunit (field blank for metal/nonmetal).

SOURCE: Technical documentation for the MSHA Address and Employment File

Table 3. MSHA mine identification and FIPS codes for states and U.S. possessions.

State name	Abbrev.	Mine ID code	FIPS code	State name	Abbrev.	Mine ID code	FIPS code
Alabama	AL	01	01	New Mexico	NM	29	35
Arizona	AZ	02	04	New York	NY	30	36
Arkansas	AR	03	05	North Carolina	NC	31	37
California	CA	04	06	North Dakota	ND	32	38
Colorado	CO	05	08	Ohio	OH	33	39
Connecticut	CT	06	09	Oklahoma	OK	34	40
Delaware	DE	07	10	Oregon	OR	35	41
Florida	FL	08	12	Pennsylvania	PA	36	42
Georgia	GA	09	13	Rhode Island	RI	37	44
Idaho	ID	10	16	South Carolina	SC	38	45
Illinois	IL	11	17	South Dakota	SD	39	46
Indiana	IN	12	18	Tennessee	TN	40	47
Iowa	IA	13	19	Texas	TX	41	48
Kansas	KS	14	20	Utah	UT	42	49
Kentucky	KY	15	21	Vermont	VT	43	50
Louisiana	LA	16	22	Virginia	VA	44	51
Maine	ME	17	23	Washington	WA	45	53
Maryland	MD	18	24	West Virginia	WV	46	54
Massachusetts	MA	19	25	Wisconsin	WI	47	55
Michigan	MI	20	26	Wyoming	WY	48	56
Minnesota	MN	21	27	District of Columbia	DC	49	11
Mississippi	MS	22	28	Alaska	AK	50	02
Missouri	MO	23	29	Hawaii	HI	51	15
Montana	MT	24	30	Pacific Island Possessions	PP	52	Mult Nos.
Nebraska	NE	25	31	Panama Canal Zone	CZ	53	61
Nevada	NV	26	32	Puerto Rico	PR	54	72
New Hampshire	NH	27	33	Virgin Islands	VI	55	78
New Jersey	NJ	28	34				

Table 4a. MSHA SIC codes in numerical order.

10110	Iron Ore	14530	Clay (fire)
10210	Copper Ore	14550	Clay (common)
10310	Lead and/or Zinc Ore	14590	Clay, Ceramic & Refractory, NEC
10410	Gold (lode and placer)	14591	Aplite
10440	Silver Ores	14592	Brucite
10510	Aluminum Ore	14593	Feldspar
10610	Ferroalloy Ores	14594	Kyanite
10611	Chromite	14595	Magnesite
10612	Cobalt	14596	Shale (common)
10613	Columbium - Tantalum	14720	Barite
10614	Manganese	14730	Fluorspar
10615	Molybdenum	14740	Potash, Soda & Borate Minerals, NEC
10616	Nickel	14741	Boron Minerals
10617	Tungsten	14742	Potash
10920	Mercury	14743	Trona
10940	Uranium - Vanadium Ores	14744	Sodium Compounds
10941	Uranium	14750	Phosphate Rock
10942	Vanadium	14760	Salt (rock)
10990	Metal Ores, NEC	14770	Sulfur
10991	Antimony	14790	Chemical and Fertilizer, NEC
10992	Beryl	14791	Lithium
10993	Platinum Group	14792	Pigment Mineral
10994	Rare Earths	14793	Pyrites
10995	Tin Ore	14794	Strontium
10996	Titanium	14920	Gypsum
10997	Zircon	14960	Talc, Soapstone & Pyrophyllite
11110	Coal, Anthracite	14990	Nonmetallic Minerals, NEC
12110	Coal, Bituminous	14991	Asbestos
13111	Oil Shale	14992	Gemstones
14110	Stone, NEC (dimension)	14993	Gilsonite
14111	Granite (dimension)	14994	Mica
14112	Limestone (dimension)	14995	Peat (before 1979)
14113	Marble (dimension)	14996	Perlite
14114	Sandstone (dimension)	14997	Pumice
14115	Slate (dimension)	14998	Vermiculite
14116	Traprock (dimension)	28190	Industrial chemicals, NEC
14220	Limestone (crushed & broken)	28191	Alumina (mill)
14230	Granite (crushed & broken)	28193	Bromine
14290	Stone, NEC (crushed & broken)	28991	Salt (evaporated)
14291	Marble (crushed & broken)	28992	Salt (in brine)
14292	Sandstone (crushed & broken)	29900	Leonardite
14293	Slate (crushed & broken)	32410	Cement
14294	Traprock (crushed & broken)	32740	Lime
14410	Sand & Gravel		

Table 4b. MSHA SIC codes in alphabetical order.

28191	Alumina (mill)	10990	Metal Ores, NEC
10510	Aluminum ore	14994	Mica
10991	Antimony	10615	Molybdenum
14591	Aplite	10616	Nickel
14991	Asbestos	14990	Nonmetallic Minerals, NEC
14720	Barite	13111	Oil Shale
10992	Beryl	14995	Peat (before 1979)
14741	Boron minerals	14996	Perlite
28193	Bromine	14750	Phosphate Rock
14592	Brucite	14792	Pigment Mineral
32410	Cement	10993	Platinum Group
14790	Chemical and Fertilizer, NEC	14742	Potash
10611	Chromite	14740	Potash, Soda & Borate Minerals, NEC
14590	Clay, Ceramic & Refractory, NEC	14997	Pumice
14550	Clay (common)	14793	Pyrites
14530	Clay (fire)	10994	Rare Earths
11110	Coal, Anthracite	28991	Salt (evaporated)
12110	Coal, Bituminous	28992	Salt (in brine)
10612	Cobalt	14760	Salt (rock)
10613	Columbium - Tantalum	14410	Sand & Gravel
10210	Copper ore	14292	Sandstone (crushed & broken)
14593	Feldspar	14114	Sandstone (dimension)
10610	Ferroalloy ores	14596	Shale (common)
14730	Fluorspar	10440	Silver Ores
14992	Gemstones	14293	Slate (crushed & broken)
14993	Gilsonite	14115	Slate (dimension)
10410	Gold (lode and placer)	14744	Sodium Compounds
14230	Granite (crushed & broken)	14290	Stone, crushed & broken, NEC
14111	Granite (dimension)	14110	Stone, dimension NEC
14920	Gypsum	14794	Strontium
28190	Industrial chemicals, NEC	14770	Sulfur
10110	Iron Ore	14960	Talc, Soapstone & Pyrophyllite
14594	Kyanite	10995	Tin ore
10310	Lead and/or Zinc Ore	10996	Titanium
29900	Leonardite	14294	Traprock (crushed & broken)
32740	Lime	14116	Traprock (dimension)
14220	Limestone (crushed & broken)	14743	Trona
14112	Limestone (dimension)	10617	Tungsten
14791	Lithium	10941	Uranium
14595	Magnesite	10940	Uranium - Vanadium Ores
10614	Manganese	10942	Vanadium
14291	Marble (crushed & broken)	14998	Vermiculite
14113	Marble (dimension)	10997	Zircon
10920	Mercury		

SOURCE: Technical documentation for the MSHA Address and Employment File

Table 5. Definitions of MSHA operational status codes for coal and metal/nonmetal mining.

MSHA DIVISION	STATUS CODE	MSHA DEFINITION
Coal	A	Active site
	B	Site closed by MSHA
	C	Temporarily closed site
	D	Permanently abandoned site
	E	Active site, not producing, men working
	F	Active site, not producing, men not working
	G	New site, under construction
	H	New site, no men working
Metal/nonmetal	1	Active site
	2	Temporarily closed site
	3	Permanently abandoned site

SOURCE: Technical documentation for the MSHA Address and Employment File

Table 6. Subunit operation codes for MSHA Address and Employment files.

SUB CODE	TYPE OF OPERATION	DESCRIPTION
01	Underground operations	Below the surface of the ground.
02	Surface at underground	Includes associated shops and yards and tippie when located at the mine.
03	Surface	Open pit, strip and quarry mines. Includes associated shops and yards at the mine.
04	Auger	Surface mining done with a boring machine (coal only).
05	Culm bank or refuse pile	Reworkings of previously processed coal (coal only).
06	Dredge	Mining underwater from a floating platform.
12	Other surface mining	Other than 03 and 06, e.g., pumping, hydraulicking, ditching (metal/nonmetal only).
17	Independent shops and yards	Shops and yards not associated with a specific mine. They will carry a unique MSHA identification number distinct from that of any mine.
30	Mill, preparation plant, or breaker	In coal operations, the mill, preparation plant, or breaker is reported in one of two ways. If the mill, preparation plant, or breaker serves one mine, it uses the same mine identification number as the mine it serves. If the mill, preparation plant, or breaker serves several mines, it generally carries its own mine identification number. There are some exceptions. The district office makes the determination as to whether a mill, preparation plant, or breaker has a separate identification number. Metal/nonmetal district office determines whether a milling operation that serves one mine or several mines carries a separate identification number.
99	Office	Professional and clerical workers at mine or plant.

SOURCE: Technical documentation for the MSHA Address and Employment File

Table 7. Listing of OSH.BOB.CNTL.

```

OBS      REC1
1      //RUK005 JOB (OSH,MNMSY),MOORE,CLASS=C,NOTIFY=$RUK,MSGCLASS=T
2      /*SETUP          016088
3      //STEP1 EXEC SAS
4      //FT11F001 DD SYSOUT=T,HOLD=YES
5      //FT12F001 DD SYSOUT=T,HOLD=YES
6      //INDATA DD DSN=OSH.RUK.METALADD.YEAR80A,DISP=OLD,
7      //      UNIT=TAPE9,VOL=SER=016088
8      //OUTDATA DD DSN=OSH.RUK.METAL80.SUMADD,DISP=(NEW,CATLG,DELETE),
9      //      UNIT=TAPE9,LABEL=(,SL,RETPD=180),
10     //      DCB=(LRECL=200,BLKSIZE=200,RECFM=F)
11     //SYSIN DD *
12     DATA ONE;
13     INFILE INDATA MISSEVER;
14     INPUT @1 MID 7. @11 COMP 2. @13 INSP 4. @17 STCD 2. @19 CTCD 3.
15     @22 SIC 5. @30 STATUS $1. @31 STDT $6. @48 CONAME $CHAR30.
16     @78 MNNAME $CHAR30. @108 STADD $CHAR30. @138 CITY $CHAR13.
17     @151 STATE $2. @153 ZIP 5. @205 UPDTC 2. @210 SUBUNIT 1.;
18     IF SUBUNIT GE 1 THEN INPUT @211 SUB1 2. @213 DOC11 9. @222 MEN11 5.
19     @245 DOC21 9. @254 MEN21 5. @277 DOC31 9.
20     @286 MEN31 5. @309 DOC41 9. @318 MEN41 5.;
21     IF SUBUNIT GE 2 THEN INPUT @341 SUB2 2. @343 DOC12 9. @352 MEN12 5.
22     @375 DOC22 9. @384 MEN22 5. @407 DOC32 9.
23     @416 MEN32 5. @439 DOC42 9. @448 MEN42 5.;
24     IF SUBUNIT GE 3 THEN INPUT @471 SUB3 2. @473 DOC13 9. @482 MEN13 5.
25     @505 DOC23 9. @514 MEN23 5. @537 DOC33 9.
26     @546 MEN33 5. @569 DOC43 9. @578 MEN43 5.;
27     IF SUBUNIT GE 4 THEN INPUT @601 SUB4 2. @603 DOC14 9. @612 MEN14 5.
28     @635 DOC24 9. @644 MEN24 5. @667 DOC34 9.
29     @676 MEN34 5. @699 DOC44 9. @708 MEN44 5.;
30     IF SUBUNIT GE 1 THEN DO; C1=0; M1=0;
31     IF DOC11 NE 0 THEN DO; C1=C1+1;
32     M1=M1+MEN11;
33     END;
34     IF DOC21 NE 0 THEN DO; C1=C1+1;
35     M1=MEN21+M1;
36     END;
37     IF DOC31 NE 0 THEN DO; C1=C1+1;
38     M1=M1+MEN31;
39     END;
40     IF DOC41 NE 0 THEN DO; C1=C1+1;
41     M1=M1+MEN41;
42     END;
43     IF C1 NE 0 THEN DO; AM1=M1/C1;
44     AMT=M1/C1;
45     END;
46     END;
47     IF SUBUNIT GE 2 THEN DO; C2=0; M2=0;
48     IF DOC12 NE 0 THEN DO; C2=C2+1;
49     M2=M2+MEN12;
50     END;
51     IF DOC22 NE 0 THEN DO; C2=C2+1;
52     M2=M2+MEN22;
53     END;
54     IF DOC32 NE 0 THEN DO; C2=C2+1;
55     M2=M2+MEN32;
56     END;

```

Table 7. Listing of OSH.BOB.CNTL (continued).

```

OBS      REC1
57      IF DOC42 NE 0 THEN DO; C2=C2+1;
58      M2=M2+MEN42;
59      END;
60      IF C2 NE 0 THEN DO; AM2=M2/C2;
61      AMT=(M1+M2)/(C1+C2);
62      END;
63      END;
64      IF SUBUNIT GE 3 THEN DO; C3=0; M3=0;
65      IF DOC13 NE 0 THEN DO; C3=C3+1;
66      M3=M3+MEN13;
67      END;
68      IF DOC23 NE 0 THEN DO; C3=C3+1;
69      M3=M3+MEN23;
70      END;
71      IF DOC33 NE 0 THEN DO; C3=C3+1;
72      M3=M3+MEN33;
73      END;
74      IF DOC43 NE 0 THEN DO; C3=C3+1;
75      M3=M3+MEN43;
76      END;
77      IF C3 NE 0 THEN DO; AM3=M3/C3;
78      AMT=(M1+M2+M3)/(C1+C2+C3);
79      END;
80      END;
81      IF SUBUNIT GE 4 THEN DO; C4=0; M4=0;
82      IF DOC14 NE 0 THEN DO; C4=C4+1;
83      M4=M4+MEN14;
84      END;
85      IF DOC24 NE 0 THEN DO; C4=C4+1;
86      M4=M4+MEN24;
87      END;
88      IF DOC34 NE 0 THEN DO; C4=C4+1;
89      M4=M4+MEN34;
90      END;
91      IF DOC44 NE 0 THEN DO; C4=C4+1;
92      M4=M4+MEN44;
93      END;
94      IF C4 NE 0 THEN DO; AM4=M4/C4;
95      AMT=(M1+M2+M3+M4)/(C1+C2+C3+C4);
96      END;
97      END;
98      FILE OUTDATA;
99      PUT @1 MID 7. @8 COMP 2. @10 INSP 4. @14 STCD 2. @16 CTCD 3.
100     @19 SIC 5. @24 STATUS $1. @25 STD 6. @31 CONAME $CHAR30.
101     @61 MNNAME $CHAR30. @91 STADD $CHAR30. @121 CITY $CHAR13.
102     @134 STATE $2. @136 ZIP 5. @141 UPDTC 2. @143 SUBUNIT 1.
103     @144 SUB1 2. @146 AM1 8.2 @154 SUB2 2. @156 AM2 8.2
104     @164 SUB3 2. @166 AM3 8.2 @174 SUB4 2. @176 AM4 8.2
105     @184 AMT 8.2 ;

```

Table 8. Data elements and file layout for interim conversion file
(OSH.RUK.METAL80.SUMADD).

CHARACTER POSITIONS	MNEMONIC NAME	DATA ELEMENT	EXPLANATION/DESCRIPTION
1-7	MID	Mine or plant name	MSHA mine identification number unique for a mining site. The first two digits indicate the state; the next five digits are assigned sequentially within a state.
8-9	COMP	Controlling company	Numeric code for selected major metal/nonmetal producing companies controlling this mining operation.
10-13	INSP	Inspection office	Code for MSHA Field Office exercising jurisdiction over this mining operation. First two characters = District. First three characters = Subdistrict. All four characters designate Field Office.
14-15	STCD	State code	FIPS code for the state in which the mine site is located (differs from the state codes used for the first two digits of the mine identification number). See Table 3.
16-18	CTCD	County code	FIPS codes for the county in which the mine site is located.
19-23	SIC	Standard Industrial Classification	Five-digit code, developed by MSHA from the four-digit SIC codes, that designates the primary mineral commodity produced at a site. See Table 4.
24	STATUS	Status code	Code for operating status at the mining site. See Table 5.
25-30	STDT	Status date	Date of latest add or change of operating status.

Table 8. Data elements and file layout for interim conversion file
(OSH.RUK.METAL80.SUMADD) (continued).

CHARACTER POSITIONS	MNEMONIC NAME	DATA ELEMENT	EXPLANATION/DESCRIPTION
31-60	CONAME	Company Name	Company that owns or has primary responsibility for the operation of the mining site.
61-90	MNNAME	Mine or plant name	Name applied to the site by the company.
91-120	STADD	Street or P.O. box number	Street or P.O. box of the mailing address for the mining site.
121-133	CITY	City	City in the mailing address for the mine site.
134-135	STATE	State abbreviation	State abbreviation for mailing purposes.
136-140	ZIP	Zip code	Zip code of the mailing address for the mining site.
141-142	UPDTC	Update change year	Year of latest change to address information for the site.
143	SUBUNIT	Number of Subunits	Number of subunit operations at the site (maximum of four).
144-145	SUB1	First Subunit's Operation	Code for type of subunit listed first in the record's "trailer"
146-153	AM1	SUB1 Employment	Annual average employment in subunit 1.
154-155	SUB2	Second Subunit's Operation	Code for type of subunit listed second in the record.
156-163	AM2	SUB2 Employment	Annual average employment in subunit 2.
164-165	SUB3	Third Subunit's Operation	Code for type of subunit listed third in the record.
166-173	AM3	SUB3 Employment	Annual average employment in subunit 3.

Table 8. Data elements and file layout for interim conversion file
(OSH.RUK.METAL80.SUMADD) (continued).

CHARACTER POSITIONS	MNEMONIC NAME	DATA ELEMENT	EXPLANATION/DESCRIPTION
174-175	SUB4	Fourth Sub- unit's Operation	Code for type of subunit listed fourth in the record.
176-183	AM4	SUB4 Employment	Annual average employment in subunit 4.
184-191	AMT	Total Employment	Total employment of all subunits included in the record.

Table 9. Listing of OSH.FOLD.CNTL.

OBS	REC1
1	//RUK080 JOB (OSH,MNMSY),MOORE,CLASS=C,NOTIFY=\$RUK,MSGCLASS=T
2	//*SETUP 016038
3	//STEP1 EXEC SAS, SORT=10, REGION=512K
4	//FT11F001 DD SYSOUT=T, HOLD=YES
5	//FT12F001 DD SYSOUT=T, HOLD=YES
6	//INDATA DD DSN=OSH.RUK.METAL80.SUMADD, UNIT=TAPE9,
7	// VOL=SER=016038, DISP=OLD
8	//OUTDATA DD DSN=OSH.RUK.METAL80.WORKFILE, UNIT=TAPE9,
9	// DISP=(NEW,CATLG,DELETE), LABEL=(,SL,RETPD=180),
10	// DCB=(LRECL=263, BLKSIZE=263, RECFM=F)
11	//SYSIN DD *
12	DATA ONE;
13	INFILE INDATA;
14	INPUT @1 MID 7. @8 COMP 2. @10 INSP 4. @14 STCD 2. @16 CTCD 3.
15	@19 SIC 5. @24 STATUS \$1. @25 STDT \$6. @31 CONAME \$CHAR30.
16	@61 MNNAME \$CHAR30. @91 STADD \$CHAR30. @121 CITY \$CHAR13.
17	@134 STATE \$2. @136 ZIP 5. @141 UPDTC 2. @143 SUBUNIT 1.
18	@144 SUB1 2. @146 AV1 8.2 @154 SUB2 2. @156 AV2 8.2
19	@164 SUB3 2. @166 AV3 8.2 @174 SUB4 2. @176 AV4 8.2
20	@184 AMT 8.2 ;
21	PROC SORT; BY MID;
22	DATA TWO;
23	ARRAY UNIT (I) UNIT1-UNIT10;
24	ARRAY SUM (I) SUM1-SUM10;
25	ARRAY NUM (I) NUM1-NUM10;
26	ARRAY AVM (I) AVM1-AVM10;
27	RETAIN TSTATUS ' ' UNIT1-UNIT10 SUM1-SUM10 NUM1-NUM10 AVM1-AVM10 ;
28	SET ONE;
29	BY MID;
30	IF FIRST.MID THEN DO; DO I=1 TO 10;
31	NUM=0; SUM=0;
32	AVM=0; UNIT=0;
33	END;
34	TSTATUS=STATUS;
35	END;
36	I=0;
37	IF STATUS LT TSTATUS THEN TSTATUS=STATUS;
38	DO JJ=1,2,3,4,5,6,12,17,30,99;
39	I=I+1;
40	IF SUB1 EQ JJ THEN DO; UNIT=SUB1;
41	SUM=AV1+SUM;
42	NUM=NUM+1;
43	AVM=SUM;
44	END;
45	IF SUB2 EQ JJ THEN DO; UNIT=SUB2;
46	SUM=AV2+SUM;
47	NUM=NUM+1;
48	AVM=SUM;
49	END;
50	IF SUB3 EQ JJ THEN DO; UNIT=SUB3;
51	SUM=AV3+SUM;
52	NUM=NUM+1;
53	AVM=SUM;
54	END;
55	IF SUB4 EQ JJ THEN DO; UNIT=SUB4;
56	SUM=AV4+SUM;

Table 9. Listing of OSH.FOLD.CNTL. (continued)

```

OBS      REC1
57      NUM=NUM+1;
58      AVM=SUM;
59      END;
60      END;
61      IF LAST.MID THEN DO; FILE OUTDATA;
62      NUMSUB=0;
63      NUMAVM=0;
64      DO I=1 TO 10;
65      IF NUM NE . THEN NUMSUB=NUM+NUMSUB;
66      IF AVM NE . THEN NUMAVM=AVM+NUMAVM;
67      END;
68      STATUS=TSTATUS;
69      PUT @1 MID 7. @8 COMP 2. @10 INSP 4. @14 STCD 2. @16 CTCD 3.
70      @19 SIC 5. @24 STATUS $1. @25 STDT $6. @31 CONAME $CHAR30.
71      @61 MNNAME $CHAR30. @91 STADD $CHAR30. @121 CITY $CHAR13.
72      @134 STATE $2. @136 ZIP 5. @141 UPDTC 2. @143 NUMSUB 2.
73      @145 NUMAVM 10.2 @155 NUM1 2. @157 AVM1 8.2 @165 NUM2 2.
74      @167 AVM2 8.2 @175 NUM3 2. @177 AVM3 8.2 @185 NUM4 2.
75      @187 AVM4 8.2 @195 NUM5 2. @197 AVM5 8.2 @205 NUM6 2.
76      @207 AVM6 8.2 @215 NUM7 2. @217 AVM7 8.2 @225 NUM8 2.
77      @227 AVM8 8.2 @235 NUM9 2. @237 AVM9 8.2 @245 NUM10 2.
78      @247 AVM10 8.2 ;
79      END;

```

Table 10. Data elements and file layout for Site Information File
(OSH.RUK.METAL80.WORKFILE).

CHARACTER POSITIONS	MNEMONIC NAME	DATA ELEMENT	EXPLANATION/DESCRIPTION
1-7	MID	Mine or plant name	MSHA mine identification number unique for a mining site. The first two digits of the seven-digit number indicate the state; the next five digits are assigned sequentially within a state.
8-9	COMP	Controlling company	Numeric code for selected major metal/ nonmetal producing companies controlling this mining operation.
10-13	INSP	Inspection office	Code for MSHA field office that exer- cises jurisdiction over the mining operation. First two characters = District. First three characters = subdistrict. All four characters designate Field office.
14-15	STCD	State code	FIPS code for the state in which the mine site is located (differs from the state codes used for the first two digits of the mine identification number). See Table 3.
16-18	CTCD	County code	FIPS code for the county in which the mine site is located.
19-23	SIC	Standard Industrial Classification	Five-digit code, developed by MSHA from the four-digit SIC codes, that desig- nates the primary mineral commodity produced at a site. See Table 4.
24	STATUS	Status code	Code for operating status at the mining site. See Table 5.
25-30	STDT	Status date	Date of latest add or change of operating status.
31-60	CONAME	Company name	Company that owns or has primary respon- sibility for the operation of the mining site.
61-90	MNNAME	Mine or plant name	Name applied to the site by the company.

Table 10. Data elements and file layout for Site Information File
(OSH.RUK.METAL80.WORKFILE) (continued).

CHARACTER POSITIONS	MNEMONIC NAME	DATA ELEMENT	EXPLANATION/DESCRIPTION
91-120	STADD	Street or P.O. box number	Street or P.O. box of the mailing address for the mining site.
121-133	CITY	City	City in the mailing address for the mine site.
134-135	STATE	State abbrev- iation	State abbreviation for mailing purposes.
136-140	ZIP	Zip code	Zip code of the mailing address for the mining site.
141-142	UPDTC	Update change year	Year of latest change to address infor- mation for the site.
143-144	NUMSUB	Number of Subunits	Number of subunit operations at the site.
145-154	NUMAVM	Average Mine- site Employment	Average annual employment at the mine site (all subunits).
155-156	NUM1	No. type 1 subunits	Number of underground subunits at the site.
157-164	AVM1	Annual average code 01 subunit employment	Annual average employment in underground operations at the site.
165-166	NUM2	No. type 2 subunits	Number of "surface at underground" subunits at the site.
167-174	AVM2	Annual average code 2 subunit employment	Annual average employment in "surface at underground" operations at the site.
175-176	NUM3	No. type 3 subunits	Number of surface subunits at site.
177-184	AVM3	Annual average code 3 subunit employment	Annual average employment in surface operations at the site.
185-186	NUM4	No. type 4 subunits	Number of auger subunits at site.

Table 10. Data elements and file layout for Site Information File
(OSH.RUK.METAL80.WORKFILE) (continued).

CHARACTER POSITIONS	MNEMONIC NAME	DATA ELEMENT	EXPLANATION/DESCRIPTION
187-194	AVM4	Annual average code 4 subunit employment	Annual average employment in auger operations at the site.
195-196	NUM5	No. type 5 subunits	Number of "culm bank or refuse pile" subunits at the site.
197-204	AVM5	Annual average code 5 subunit employment	Annual average employment in "culm bank and refuse pile" operations at the site.
205-206	NUM6	No. type 6 subunits	Number of dredge subunits at the site.
207-214	AVM6	Annual average code 6 subunit employment	Annual average employment in dredge operations at the site.
215-216	NUM7	No. type 12 subunits	Number of "other surface mining" operations at the site.
217-224	AVM7	Annual average code 12 subunit employment	Annual average employment in "other surface mining" operations at the site.
225-226	NUM8	No. type 17 subunits	Number of "independent shops and yards" subunits at the site.
227-234	AVM8	Annual average code 17 subunit employment	Annual average employment in "inde- pendent shops and yards" operations at the site.
235-236	NUM9	No. type 30 subunits	Number of "mill or preparation plant" subunits at the site.
237-244	AVM9	Annual average code 30 subunit employment	Annual average employment in "mill or preparation plant" operations at the site.
245-246	NUM10	No. type 99 subunits	Number of "office" subunits at the site.
247-254	AVM10	Annual average code 99 subunit employment	Annual average employment in office operations at the site.

Table 11. Listing of OSH.BILDSIC.CNTL.

```
//RUKSIC JOB (OSH,MNMSY),MOORE,CLASS=A,NOTIFY=$RUK,MSGCLASS=T
/*PASS $$$
/*SETUP 015839
// EXEC SAS
//FT11F001 DD SYSOUT=T,HOLD=YES
//FT12F001 DD SYSOUT=T,HOLD=YES
//INDATA1 DD DSN=OSH.RUK.METAL80.WORKFILE,DISP=OLD,
// UNIT=TAPE,VOL=SER=015839,LABEL=(1,SL)
//OUTDATA1 DD DSN=$RUK.OSH.MTLSIC.DATA,DISP=(NEW,CATLG,DELETE),
// UNIT=3350,VOL=SER=USRTS3,SPACE=(TRK,(40,10),RLSE),
// DCB=(LRECL=125,BLKSIZE=2500,RECFM=FB)
//OUTDATA2 DD DSN=$RUK.OSH.NMSIC.DATA,DISP=(NEW,CATLG,DELETE),
// UNIT=3350,VOL=SER=USRTS3,SPACE=(TRK,(40,10),RLSE),
// DCB=(LRECL=125,BLKSIZE=2500,RECFM=FB)
//SYSIN DD *
* ;
* OSH.BILDSIC.CNTL * ;
* ;
* CREATE SIC FILES PER SURVEILLANCE PROJECT NEEDS * ;
* ;
DATA ONE;
INFILE INDATA1;
INPUT @1 MID 7. @19 SIC 5. @24 STATUS 1.
      @143 NUMSUB 2. @145 NUMAVM 10.2
      @155 SUB1 2. @157 AVM1 8.2
      @165 SUB2 2. @167 AVM2 8.2
      @175 SUB3 2. @177 AVM3 8.2
      @185 SUB4 2. @187 AVM4 8.2
      @195 SUB5 2. @197 AVM5 8.2
      @205 SUB6 2. @207 AVM6 8.2
      @215 SUB7 2. @217 AVM7 8.2
      @225 SUB8 2. @227 AVM8 8.2
      @235 SUB9 2. @237 AVM9 8.2
      @245 SUB10 2. @247 AVM10 8.2;
IF (AVM10 NE .) THEN NUMAVM=NUMAVM-AVM10;
IF (SUB10 NE .) THEN NUMSUB=NUMSUB-SUB10;
IF STATUS EQ 1;
PROC SORT;
BY SIC;
DATA METAL;
SET ONE; BY SIC;
IF (SIC EQ 10110) OR
(SIC EQ 10210) OR
(SIC EQ 10310) OR
(SIC EQ 10440) OR
((SIC EQ 10510) OR (SIC EQ 28191)) OR
(SIC EQ 10612) OR
(SIC EQ 10614) OR
(SIC EQ 10615) OR
(SIC EQ 10616) OR
((SIC EQ 10940) OR (SIC EQ 10941)) OR
(SIC EQ 10942);
FILE OUTDATA1;
PUT @1 MID 7. @8 SIC 5.
      @13 NUMSUB 2. @15 NUMAVM 10.2
      @25 SUB1 2. @27 AVM1 8.2
      @35 SUB2 2. @37 AVM2 8.2
      @45 SUB3 2. @47 AVM3 8.2
      @55 SUB4 2. @57 AVM4 8.2
      @65 SUB5 2. @67 AVM5 8.2
      @75 SUB6 2. @77 AVM6 8.2
      @85 SUB7 2. @87 AVM7 8.2
      @95 SUB8 2. @97 AVM8 8.2
      @105 SUB9 2. @107 AVM9 8.2;
```

Table 11. Listing of OSH.BILDSIC.CNTL (continued).

PROC PRINT N;	00000600
TITLE1 'CONTENTS OF MTL.SIC.DATA';	00000610
DATA NMTL;	00000620
SET ONE; BY SIC;	00000630
IF ((SIC EQ 14530) OR (SIC EQ 14550) OR (SIC EQ 14590)) OR	00000640
(SIC EQ 14720) OR	00000650
(SIC EQ 14750) OR	00000660
(SIC EQ 14920) OR	00000661
(SIC EQ 14991) OR	00000670
(SIC EQ 14993) OR	00000680
(SIC EQ 14994) OR	00000690
(SIC EQ 14998) ;	00000700
FILE OUTDATA2;	00000720
PUT @1 MID 7. @8 SIC 5.	00000730
@13 NUMSUB 2. @15 NUMAVM 10.2	00000740
@25 SUB1 2. @27 AVM1 8.2	00000750
@35 SUB2 2. @37 AVM2 8.2	00000760
@45 SUB3 2. @47 AVM3 8.2	00000770
@55 SUB4 2. @57 AVM4 8.2	00000780
@65 SUB5 2. @67 AVM5 8.2	00000790
@75 SUB6 2. @77 AVM6 8.2	00000800
@85 SUB7 2. @87 AVM7 8.2	00000810
@95 SUB8 2. @97 AVM8 8.2	00000820
@105 SUB9 2. @107 AVM9 8.2;	00000830
PROC PRINT N;	00000850
TITLE1 'CONTENTS OF NMSIC.DATA';	00000860

Table 12. Data elements and file layout for MTLASIC.DATA and NMSIC.DATA.

CHARACTER POSITIONS	MNEMONIC NAME	DATA ELEMENT	EXPLANATION/DESCRIPTION
1-7	MID	Mine or plant name	MSHA mine identification number unique for a mining site. The first two digits of the seven-digit number indicate the state; the next five digits are assigned sequentially within a state.
8-12	SIC	Standard Industrial Classification	Five-digit code, developed by MSHA from the four-digit SIC codes, that designates the primary mineral commodity produced at a site. See Table 4.
13-14	NUMSUB	Number of Subunits	Number of non-office subunit operations at the site.
15-24	NUMAVM	Average Mine-site Employment	Average annual non-office employment at the mine site.
25-26	SUB1	No. type 1 subunits	Number of underground subunits at the site.
27-34	AVM1	Annual average code 01 subunit employment	Annual average employment in underground operations at the site.
35-36	SUB2	No. type 2 subunits	Number of "surface at underground" subunits at the site.
37-44	AVM2	Annual average code 2 subunit employment	Annual average employment in "surface at underground" operations at the site.
45-46	SUB3	No. type 3 subunits	Number of surface subunits at site.
47-54	AVM3	Annual average employment in code 3 subunits	Annual average employment in surface operations at the site.
55-56	SUB4	No. type 4 subunits	Number of auger subunits at site.
57-64	AVM4	Annual average code 4 subunit employment	Annual average employment in auger operations at the site.

Table 12. Data elements and file layout for MTL5IC.DAT and NMSIC.DAT (continued).

CHARACTER POSITIONS	MNEMONIC NAME	DATA ELEMENT	EXPLANATION/DESCRIPTION
65-66	SUB5	No. type 5 subunits	Number of "culm bank or refuse pile" subunits at the site.
67-74	AVM5	Annual average code 5 subunit employment	Annual average employment in "culm bank and refuse pile" operations at the site.
75-76	SUB6	No. type 6 subunits	Number of dredge subunits at the site.
77-84	AVM6	Annual average code 6 subunit employment	Annual average employment in dredge operations at the site.
85-86	SUB7	No. type 12 subunits	Number of "other surface mining" operations at the site.
87-94	AVM7	Annual average code 12 subunit employment	Annual average employment in "other surface mining" operations at the site.
95-96	SUB8	No. type 17 subunits	Number of "independent shops and yards" subunits at the site.
97-104	AVM8	Annual average code 17 subunit employment	Annual average employment in "independent shops and yards" operations at the site.
105-106	SUB9	No. type 30 subunits	Number of "mill or preparation plant" subunits at the site.
107-114	AVM9	Annual average code 30 subunit employment	Annual average employment in "mill or preparation plant" operations at the site.

Table 13. Listing of OSH.FIRST.SRU.DATA.

MID	OBS	MID	OBS
402511	00000010	1001416	00000700
4200946	00000020	3500391	00000710
404358	00000030	4800490	00000720
2100256	00000040	4800466	00000730
2000422	00000050	4502424	00000740
2101600	00000060	300479	00000750
2300455	00000070	501784	00000760
2300454	00000080	900125	00000770
4101643	00000090	900110	00000780
4102764	00000100	900135	00000790
4100922	00000110	2300159	00000800
4800145	00000120	2301602	00000810
4800144	00000130	3600630	00000820
200024	00000140	2200035	00000830
200157	00000150	100034	00000840
200305	00000160	2200032	00000850
2000371	00000170	4000194	00000870
2400338	00000180	1500187	00000880
2400689	00000190	4100262	00000890
2900159	00000200	4100298	00000900
4201153	00000210	3100135	00000910
2900708	00000220	4800070	00000920
4002039	00000230	4801016	00000930
4000704	00000240	4800611	00000940
4000603	00000250	300787	00000950
4000707	00000260	2600411	00000960
1000458	00000280	2601592	00000970
500417	00000290	900244	00000980
500516	00000300	900245	00000990
500412	00000310	4000749	00001000
1000083	00000320	800178	00001010
1000086	00000330	800183	00001020
1000088	00000340	800177	00001030
2300457	00000350	1000556	00001040
2300458	00000360	1000094	00001050
2300494	00000370	1000093	00001060
4000864	00000380	3100212	00001070
4000168	00000390	4000629	00001080
4000606	00000400	4000920	00001090
4001981	00000410	4000611	00001100
4000866	00000420	4002630	00001120
4001749	00000430	3400266	00001130
1000082	00000440	2600097	00001140
1000089	00000450	1200427	00001150
0500413	00000460	200951	00001160
300257	00000470	200954	00001170
300069	00000480	401061	00001180
300262	00000490	402547	00001190
300472	00000500	4300065	00001200
300261	00000510	401062	00001210
100650	00000520	402550	00001220
900684	00000530	4200854	00001230
101565	00000540	4201146	00001240
102214	00000550	4200876	00001250
900921	00000560	4201446	00001260
1000533	00000570	3100375	00001270
1100876	00000590	3100273	00001280
4102978	00000600	1260	00001281
4100148	00000610	3100274	00001290
2900762	00000620	2400165	00001300
3800206	00000630	3800085	00001310
500354	00000640	3800251	00001320
502337	00000650	3800259	00001330
500790	00000660	3800086	00001340
29006164	00000670	4405101	00001350
502256	00000680		
1000531	00000690		

Table 14. Listing of OSH.BILD.AFIL.CNTL.

```

//RUKAFL JOB (OSH,MNMSY,99),MOORE,CLASS=A,NOTIFY=$RUK,MSGCLASS=T
/*PASS $$$
// EXEC SAS
//FT11F001 DD SYSOUT=A
//FT12F001 DD SYSOUT=A
//INDATA1 DD DSN=$RUK.OSH.MTLSIC.DATA,DISP=SHR
//INDATA2 DD DSN=$RUK.OSH.NMSIC.DATA,DISP=SHR
//INDATA3 DD DSN=$RUK.OSH.FIRST.SRU.DATA,DISP=SHR
//OUTDATA1 DD DSN=$RUK.OSH.ASTRATA.DATA,DISP=(NEW,CATLG,DELETE),
// UNIT=3350,VOL=SER=USRTS3,DCB=(RECFM=FB,LRECL=130,BLKSIZE=2600),
// SPACE=(TRK,(40,10),RLSE)
//SYSIN DD *
* ;
* OSH.BILD.AFIL.CNTL--CREATE AND LIST ASTRATA.DATA * ;
* ;
DATA ONE;
  INFILE INDATA1;
  INPUT @1 MID 7. @1 STCD 2. @8 SIC 5. @8 SICX 5.
        @13 NUMSUB 2. @15 NUMAVM 10.2
        @25 SUB1 2. @27 AVM1 8.2
        @35 SUB2 2. @37 AVM2 8.2
        @45 SUB3 2. @47 AVM3 8.2
        @55 SUB4 2. @57 AVM4 8.2
        @65 SUB5 2. @67 AVM5 8.2
        @75 SUB6 2. @77 AVM6 8.2
        @85 SUB7 2. @87 AVM7 8.2
        @95 SUB8 2. @97 AVM8 8.2
        @105 SUB9 2. @107 AVM9 8.2;
  GEO=0;
  IF SICX EQ 10941 THEN SIC=10940;
  IF SICX EQ 14550 THEN SIC=14530;
  IF SICX EQ 14590 THEN SIC=14530;
  IF SICX EQ 28191 THEN SIC=10510;
  PROC FORMAT;
    VALUE SICFMT
      10110='IRON ORE'
      10210='COPPER ORE'
      10310='LEAD/ZINC ORES'
      10440='SILVER'
      10510='ALUMINUM ORE+'
      10612='COBALT'
      10614='MANGANESE'
      10615='MOLYBDENUM'
      10616='NICKEL'
      10940='URANIUM+'
      10942='VANADIUM'
      14530='CLAY GROUP'
      14720='BARITE'
      14750='PHOSPHATE ROCK'
      14920='GYPSUM'
      14991='ASBESTOS'
      14993='GILSONITE'
      14994='MICA'
      14998='VERMICULITE';
  PROC SORT;
    BY SIC
      DESCENDING NUMAVM;
  DATA MONE;
    SET ONE; BY SIC DESCENDING NUMAVM;
    IF SIC EQ 10110;

```

Table 14. Listing of OSH.BILD.AFILE.CNTL (continued).

IF ((STCD EQ 04) OR (STCD EQ 42))	00000610
THEN GEO=0 ;	00000620
IF ((STCD EQ 41))	00000630
THEN GEO=0 ;	00000640
IF ((STCD EQ 21) OR (STCD EQ 20) OR (STCD EQ 47))	00000650
THEN GEO=2 ;	00000660
IF ((STCD EQ 23))	00000670
THEN GEO=9 ;	00000680
IF ((STCD EQ 48))	00000690
THEN GEO=9 ;	00000700
PROC SORT;	00000710
BY SIC GEO DESCENDING NUMAVM;	00000720
DATA MTWO;	00000730
SET ONE; BY SIC DESCENDING NUMAVM;	00000740
IF SIC EQ 10210;	00000750
IF ((STCD EQ 02))	00000760
THEN GEO=1 ;	00000770
IF ((STCD EQ 29) OR (STCD EQ 26) OR (STCD EQ 42))	00000780
THEN GEO=4 ;	00000790
IF ((STCD EQ 40) OR (STCD EQ 10))	00000800
THEN GEO=0 ;	00000810
IF ((STCD EQ 20))	00000820
THEN GEO=9 ;	00000830
IF ((STCD EQ 24))	00000840
THEN GEO=0 ;	00000850
PROC SORT;	00000860
BY SIC GEO DESCENDING NUMAVM;	00000870
	00000880
	00000890
DATA MTHREE;	00000900
SET ONE; BY SIC DESCENDING NUMAVM;	00000910
IF SIC EQ 10310;	00000920
IF ((STCD EQ 23))	00000930
THEN GEO=3 ;	00000940
IF ((STCD EQ 40))	00000950
THEN GEO=5 ;	00000960
IF ((STCD EQ 10))	00000970
THEN GEO=0 ;	00000980
IF ((STCD EQ 05))	00000990
THEN GEO=0 ;	00001000
PROC SORT;	00001010
BY SIC GEO DESCENDING NUMAVM;	00001020
DATA MSILVER;	00001030
SET ONE; BY SIC DESCENDING NUMAVM;	00001040
IF SIC EQ 10440;	00001050
GEO=8 ;	00001060
PROC SORT;	00001070
BY SIC GEO DESCENDING NUMAVM;	00001080
	00001090
DATA MFOUR;	00001100
SET ONE; BY SIC DESCENDING NUMAVM;	00001110
IF SIC EQ 10510;	00001120
IF ((STCD EQ 03))	00001130
THEN GEO=0 ;	00001140
IF ((STCD EQ 09) OR (STCD EQ 01))	00001150
THEN GEO=9 ;	00001160
PROC SORT;	00001170
BY SIC GEO DESCENDING NUMAVM;	00001180
	00001190
	00001200

Table 14. Listing of OSH.BILD.AFILE.CNTL (continued).

DATA MFIVE;	00001210
SET ONE; BY SIC DESCENDING NUMAVM;	00001220
IF SIC EQ 10612;	00001230
GEO=9 ;	00001240
PROC SORT;	00001250
BY SIC GEO DESCENDING NUMAVM;	00001260
	00001270
	00001280
DATA MSIX;	00001290
SET ONE; BY SIC DESCENDING NUMAVM;	00001300
IF SIC EQ 10614;	00001310
GEO=9 ;	00001320
PROC SORT;	00001330
BY SIC GEO DESCENDING NUMAVM;	00001340
	00001350
	00001360
DATA MSEVEN;	00001370
SET ONE; BY SIC DESCENDING NUMAVM;	00001380
IF SIC EQ 10615;	00001390
IF ((STCD EQ 05) OR (STCD EQ 29))	00001400
THEN GEO=0 ;	00001410
IF ((STCD EQ 42))	00001420
THEN GEO=9 ;	00001430
IF ((STCD EQ 10))	00001440
THEN GEO=9 ;	00001450
PROC SORT;	00001460
BY SIC GEO DESCENDING NUMAVM;	00001470
	00001480
	00001490
DATA MEIGHT;	00001500
SET ONE; BY SIC DESCENDING NUMAVM;	00001510
IF SIC EQ 10616;	00001520
GEO=9 ;	00001530
PROC SORT;	00001540
BY SIC GEO DESCENDING NUMAVM;	00001550
	00001560
	00001570
DATA MNINE;	00001580
SET ONE; BY SIC DESCENDING NUMAVM;	00001590
IF SIC EQ 10940;	00001600
GEO=8 ;	00001610
PROC SORT;	00001620
BY SIC GEO DESCENDING NUMAVM;	00001630
DATA MTEN;	00001640
SET ONE; BY SIC DESCENDING NUMAVM;	00001650
IF SIC EQ 10942;	00001660
IF ((STCD EQ 03))	00001670
THEN GEO=9 ;	00001680
IF ((STCD EQ 10))	00001690
THEN GEO=9 ;	00001700
IF ((STCD EQ 05))	00001710
THEN GEO=9 ;	00001720
PROC SORT;	00001730
BY SIC GEO DESCENDING NUMAVM;	00001740
	00001750
	00001760
DATA METAL;	00001770
SET MONE MTWO MTHREE MSILVER MFOUR MFIVE MSIX MSEVEN MEIGHT	00001780
MNINE MTEN;	00001790
BY SIC GEO DESCENDING NUMAVM;	00001800

Table 14. Listing of OSH.BILD.AFILE.CNTL (continued).

```

PROC SORT; BY MID;                                00001860
DATA AMETAL;                                       00001870
  INFILE INDATA3;                                00001880
  INPUT @1 MID 7. ;                               00001890
  WT=' A';                                        00001900
PROC SORT; BY MID;                                00001910
DATA MTLMERGE;                                    00001920
  MERGE METAL(IN=IN1)                             00001930
    AMETAL(IN=IN2);                              00001940
  BY MID;                                         00001950
  IF IN1 & IN2 ;                                00001960
DATA TWO;                                         00001970
  INFILE INDATA2;                                00001980
  INPUT @1 MID 7. @1 STCD 2. @8 SIC 5.   @8 SICX 5. 00001990
    @13 NUMSUB 2. @15 NUMAVM 10.2           00002000
    @25 SUB1 2. @27 AVM1 8.2                00002010
    @35 SUB2 2. @37 AVM2 8.2                00002020
    @45 SUB3 2. @47 AVM3 8.2                00002030
    @55 SUB4 2. @57 AVM4 8.2                00002040
    @65 SUB5 2. @67 AVM5 8.2                00002050
    @75 SUB6 2. @77 AVM6 8.2                00002060
    @85 SUB7 2. @87 AVM7 8.2                00002070
    @95 SUB8 2. @97 AVM8 8.2                00002080
    @105 SUB9 2. @107 AVM9 8.2;              00002090
  GEO=0;                                         00002110
  IF SICX EQ 10941 THEN SIC=10940;           00002120
  IF SICX EQ 14550 THEN SIC=14530;           00002130
  IF SICX EQ 14590 THEN SIC=14530;           00002140
  IF SICX EQ 28191 THEN SIC=10510;           00002150
PROC FORMAT;                                     00002160
  VALUE SICFNT                                   00002170
    10110='IRON ORE'                          00002180
    10210='COPPER ORE'                        00002190
    10310='LEAD/ZINC ORES'                    00002200
    10440='SILVER'                            00002210
    10510='ALUMINUM ORE+'                     00002220
    10612='COBALT'                            00002230
    10614='MANGANESE'                        00002240
    10615='MOLYBDENUM'                      00002250
    10616='NICKEL'                           00002260
    10940='URANIUM+'                          00002270
    10942='VANADIUM'                         00002280
    14530='CLAY GROUP'                       00002290
    14720='BARITE'                           00002300
    14750='PHOSPHATE ROCK'                   00002310
    14920='GYPSUM'                           00002320
    14991='ASBESTOS'                         00002330
    14993='GILSONITE'                       00002340
    14994='MICA'                             00002350
    14998='VERMICULITE';                     00002360
PROC SORT;                                       00002370
  BY SIC                                         00002380
  DESCENDING NUMAVM;                           00002390
DATA NMONE;                                     00002400
  SET TWO; BY SIC DESCENDING NUMAVM;           00002410
  IF SIC EQ 14530;                             00002420
  IF ((STCD EQ 48) OR (STCD EQ 24) OR (STCD EQ 39)) 00002430
    THEN GEO=7 ;                               00002440
  IF (( STCD EQ 22) OR (STCD EQ 01))           00002450
    THEN GEO=3 ;                               00002460

```

Table 14. Listing of OSH.BILD.AFILE.CNTL (continued).

IF ((STCD EQ 23) OR (STCD EQ 33) OR (STCD EQ 36))	00002470
THEN GEO=2 ;	00002480
IF ((STCD EQ 09) OR (STCD EQ 08) OR (STCD EQ 38))	00002490
THEN GEO=1 ;	00002500
IF ((STCD EQ 40) OR (STCD EQ 15))	00002510
THEN GEO=5 ;	00002520
IF ((STCD EQ 41) OR (STCD EQ 31))	00002530
THEN GEO=6 ;	00002540
PROC SORT;	00002550
BY SIC GEO DESCENDING NUMAVM;	00002560
	00002570
	00002580
DATA NMTWO;	00002590
SET TWO; BY SIC DESCENDING NUMAVM;	00002600
IF SIC EQ 14720;	00002610
IF ((STCD EQ 03) OR (STCD EQ 26))	00002620
THEN GEO=1 ;	00002630
IF ((STCD EQ 24) OR (STCD EQ 09) OR (STCD EQ 40))	00002640
THEN GEO=0 ;	00002650
PROC SORT;	00002660
BY SIC GEO DESCENDING NUMAVM;	00002670
	00002680
	00002690
DATA NMTHREE;	00002700
SET TWO; BY SIC DESCENDING NUMAVM;	00002710
IF SIC EQ 14750;	00002720
IF ((STCD EQ 08))	00002730
THEN GEO=1 ;	00002740
IF ((STCD EQ 31))	00002750
THEN GEO=9 ;	00002760
IF ((STCD EQ 10))	00002770
THEN GEO=0 ;	00002780
IF ((STCD EQ 40))	00002790
THEN GEO=5 ;	00002800
PROC SORT;	00002810
BY SIC GEO DESCENDING NUMAVM;	00002820
	00002830
	00002840
DATA NMFIVE;	00002850
SET TWO; BY SIC DESCENDING NUMAVM;	00002860
IF SIC EQ 14920;	00002870
GEO=8 ;	00002880
PROC SORT;	00002890
BY SIC GEO DESCENDING NUMAVM;	00002900
	00002910
	00002920
	00002930
DATA NMFIVE;	00002940
SET TWO; BY SIC DESCENDING NUMAVM;	00002950
IF SIC EQ 14991;	00002960
IF ((MID EQ 401061) OR (MID EQ 402547))	00002970
THEN GEO=9 ;	00002980
IF ((MID EQ 401059) OR (MID EQ 401062) OR (MID EQ 402550)	00002990
OR (MID EQ 402554))	00003000
THEN GEO=9 ;	00003010
IF ((STCD EQ 02))	00003020
THEN GEO=9 ;	00003030
IF ((STCD EQ 43))	00003040
THEN GEO=9 ;	00003050
PROC SORT;	00003060
BY SIC GEO DESCENDING NUMAVM;	

Table 14. Listing of OSH.BILD.AFILE.CNTL (continued).

DATA NMSIX;	00003070
SET TWO; BY SIC DESCENDING NUMAVM;	00003080
IF SIC EQ 14993;	00003090
GEO=9 ;	00003100
PROC SORT;	00003110
BY SIC GEO DESCENDING NUMAVM;	00003120
	00003130
	00003140
	00003150
	00003160
DATA NMSEVEN;	00003170
SET TWO; BY SIC DESCENDING NUMAVM;	00003180
IF SIC EQ 14994;	00003190
IF ((STCD EQ 31))	00003200
THEN GEO=1 ;	00003210
PROC SORT;	00003220
BY SIC GEO DESCENDING NUMAVM;	00003230
	00003240
	00003250
DATA NMEIGHT;	00003260
SET TWO; BY SIC DESCENDING NUMAVM;	00003270
IF SIC EQ 14998;	00003280
IF ((STCD EQ 24))	00003290
THEN GEO=9 ;	00003300
IF ((STCD EQ 44))	00003310
THEN GEO=9 ;	00003320
IF ((STCD EQ 38))	00003330
THEN GEO=9 ;	00003340
IF ((STCD EQ 41))	00003350
THEN GEO=9 ;	00003360
PROC SORT;	00003370
BY SIC GEO DESCENDING NUMAVM;	00003380
	00003390
	00003400
	00003410
	00003420
DATA NMETAL;	00003430
SET NMONE NMTWO NMTHREE NMFOUR NMFIVE NMSIX NMSEVEN NMEIGHT ;	00003440
BY SIC GEO DESCENDING NUMAVM;	00003450
PROC SORT; BY MID;	00003520
DATA ANMETAL;	00003530
INFILE INDATA3;	00003540
INPUT @1 MID 7. ;	00003550
WT=' A' ;	00003560
PROC SORT; BY MID;	00003570
DATA NMWIERGE;	00003580
MERGE NMETAL(IN=IN1)	00003590
ANMETAL(IN=IN2);	00003600
BY MID;	00003610
IF IN1 & IN2 ;	00003620
DATA AMERGE;	00003630
MERGE MTLMERGE NMWIERGE ;	00003640
BY MID;	00003650
PROC SORT;	00003660
BY SIC MID;	00003670
PROC PRINT PAGE N;	00003680
BY SIC ;	00003690
VAR MID SIC GEO NUMAVM AVM1 AVM2 AVM3 AVM4 AVM5 AVM6	00003700
AVM7 AVM8 AVM9 WT;	00003710
FORMAT SIC SICFMT.;	00003720

Table 14. Listing of OSH.BILD.AFILE.CNTL (continued).

TITLE1 'SAMPLE FRAME #6';	00003730
TITLE2 'MANUALLY SELECTED FIRST ROUND SRUS' ;	00003740
TITLE3 'BY SIC AND MID';	00003750
PROC PRINT N;	00003760
VAR MID SIC GEO NUMAVM AVM1 AVM2 AVM3 AVM4 AVM5 AVM6	00003771
AVM7 AVM8 AVM9 WT;	00003781
FORMAT SIC SICFMT.;	00003791
TITLE1 'SAMPLE FRAME #6';	00003801
TITLE2 'MANUALLY SELECTED FIRST ROUND SRUS' ;	00003811
TITLE3 'BY SIC AND MID';	00003821
PROC SORT;	00003822
BY SIC GEO DESCENDING NUMAVM;	00003823
DATA AFILE;	00003824
SET ANERGE; BY SIC GEO DESCENDING NUMAVM;	00003825
FILE OUTDATA1;	00003826
PUT @1 MID 7. @8 SIC 5. @13 GEO 1. @14 WT \$3.	00003830
@17 NUMSUB 2. @19 NUMAVM 10.2	00003840
@29 SUB1 2. @31 AVM1 8.2	00003850
@39 SUB2 2. @41 AVM2 8.2	00003860
@49 SUB3 2. @51 AVM3 8.2	00003870
@59 SUB4 2. @61 AVM4 8.2	00003880
@69 SUB5 2. @71 AVM5 8.2	00003890
@79 SUB6 2. @81 AVM6 8.2	00003900
@89 SUB7 2. @91 AVM7 8.2	00003910
@99 SUB8 2. @101 AVM8 8.2	00003920
@109 SUB9 2. @111 AVM9 8.2;	00003930

Table 15. Data elements and file layout for ASTRATA.DATA, MTLSTRAT.DATA, NMSTRAT.DATA, MTLSRU.DATA, NMSRU.DATA, and CONCAT.DATA.

CHARACTER POSITIONS	MNEMONIC NAME	DATA ELEMENT	EXPLANATION/DESCRIPTION
1-7	MID	Mine or plant name	MSHA mine identification number unique for a mining site. The first two digits of the seven-digit number indicate the state; the next five digits are assigned sequentially within a state.
8-12	SIC	Standard Industrial Classification	Five-digit code, developed by MSHA from the four-digit SIC codes, that designates the primary mineral commodity produced at a site. See Table 4.
13	GEO	Geographic strata code	Single numeric character representing each geographic strata within each SIC group.
14	WT	Selection status code	Single alphabetic reference (A or B) representing the first or second round self-representing unit selections, or a single digit which represents the number of times the site was drawn by random selection process.
17-18	NUMSUB	Number of Subunits	Number of non-office subunit operations at the site.
19-28	NUMAVM	Average Mine-site Employment	Average annual non-office employment at the mine site.
29-30	SUB1	No. type 1 subunits	Number of underground subunits at the site.
31-38	AVM1	Annual average code 01 subunit employment	Annual average employment in underground operations at the site.
39-40	SUB2	No. type 2 subunits	Number of "surface at underground" subunits at the site.
41-48	AVM2	Annual average code 2 subunit employment	Annual average employment in "surface at underground" operations at the site.

Table 15. Data elements and file layout for ASTRATA.DATA, MTLSTRAT.DATA, NMSTRAT.DATA, MTLSTRU.DATA, NMSRU.DATA, and CONCAT.DATA (continued).

CHARACTER POSITIONS	MNEMONIC NAME	DATA ELEMENT	EXPLANATION/DESCRIPTION
49-50	SUB3	No. type 3 subunits	Number of surface subunits at site.
51-58	AVM3	Annual average employment in code 3 subunits	Annual average employment in surface operations at the site.
59-60	SUB4	No. type 4 subunits	Number of auger subunits at site.
61-68	AVM4	Annual average code 4 subunit employment	Annual average employment in auger operations at the site.
69-70	SUB5	No. type 5 subunits	Number of "culm bank or refuse pile" subunits at the site.
71-78	AVM5	Annual average code 5 subunit employment	Annual average employment in "culm bank and refuse pile" operations at the site.
79-80	SUB6	No. type 6 subunits	Number of dredge subunits at the site.
81-88	AVM6	Annual average code 6 subunit employment	Annual average employment in dredge operations at the site.
89-90	SUB7	No. type 12 subunits	Number of "other surface mining" operations at the site.
91-98	AVM7	Annual average code 12 subunit employment	Annual average employment in "other surface mining" operations at the site.
99-100	SUB8	No. type 17 subunits	Number of "independent shops and yards" subunits at the site.
101-108	AVM8	Annual average code 17 subunit employment	Annual average employment in "independent shops and yards" operations at the site.

Table 15. Data elements and file layout for ASTRATA.DATA, MTLSTRAT.DATA, NMSTRAT.DATA, MTLSTRU.DATA, NMSRU.DATA, and CONCAT.DATA.
(continued).

CHARACTER POSITIONS	MNEMONIC NAME	DATA ELEMENT	EXPLANATION/DESCRIPTION
109-110	SUB9	No. type 30 subunits	Number of "mill or preparation plant" subunits at the site.
111-118	AVM9	Annual average code 30 subunit employment	Annual average employment in "mill or preparation plant" operations at the site.

Table 16. Listing of OSH.BILD.MTLSTRAT.CNTL.

```
//RUKTST JOB (OSH,MNMSY,99),MOORE,CLASS=A,NOTIFY=$RUK,MSGCLASS=T
//*PASS $$$
// EXEC SAS
//FT11F001 DD SYSOUT=A
//FT12F001 DD SYSOUT=A
//INDATA1 DD DSN=$RUK.OSH.MTLSIC.DATA,DISP=SHR
//INDATA2 DD DSN=$RUK.OSH.FIRST.SRU.DATA,DISP=SHR
//OUTDATA2 DD DSN=$RUK.OSH.MTLSTRAT.DATA,DISP=(NEW,CATLG,DELETE),
// UNIT=3350,VOL=SER=USRTS3,DCB=(RECFM=FB,LRECL=130,BLKSIZE=2600),
// SPACE=(TRK,(40,10),RLSE)
//OUTDATA3 DD DSN=$RUK.OSH.MTLSTRU.DATA,DISP=(NEW,CATLG,DELETE),
// UNIT=3350,VOL=SER=USRTS3,DCB=(RECFM=FB,LRECL=130,BLKSIZE=2600),
// SPACE=(TRK,(40,10),RLSE)
//SYSIN DD *
* ;
* OSH.BILD.MTLSTRAT.CNTL--CREATE AND LIST OSH.MTLSTRAT.DATA * ;
* NMSTRAT.DATA FILES * ;
* ;
OPTIONS MISSING='0';
DATA ONEA;
INFILE INDATA1;
INPUT @1 MID 7. @1 STCD 2. @8 SIC 5. @8 SICX 5.
      @13 NUMSUB 2. @15 NUMAVM 10.2
      @25 SUB1 2. @27 AVM1 8.2
      @35 SUB2 2. @37 AVM2 8.2
      @45 SUB3 2. @47 AVM3 8.2
      @55 SUB4 2. @57 AVM4 8.2
      @65 SUB5 2. @67 AVM5 8.2
      @75 SUB6 2. @77 AVM6 8.2
      @85 SUB7 2. @87 AVM7 8.2
      @95 SUB8 2. @97 AVM8 8.2
      @105 SUB9 2. @107 AVM9 8.2;
TOT=SUM(AVM1, AVM2, AVM3, AVM4, AVM5, AVM6, AVM7, AVM8, AVM9);
GEO=0;
IF SICX EQ 10941 THEN SIC=10940;
IF SICX EQ 14550 THEN SIC=14530;
IF SICX EQ 14590 THEN SIC=14530;
IF SICX EQ 28191 THEN SIC=10510;
DATA ONE;
SET ONEA;
IF TOT NE 0;
IF NUMAVM NE 0;
PROC FORMAT;
VALUE SICFMT
  10110='IRON ORE'
  10210='COPPER ORE'
  10310='LEAD/ZINC ORES'
  10440='SILVER'
  10510='ALUMINUM ORE+'
  10612='COBALT'
  10614='MANGANESE'
  10615='MOLYBDENUM'
  10616='NICKEL'
  10940='URANIUM+'
  10942='VANADIUM'
  14530='CLAY GROUP'
  14720='BARITE'
  14750='PHOSPHATE ROCK'
  14920='GYPSUM'
  14991='ACRESTOS'
```

Table 16. Listing of OSH.BILD.MTLSTRAT.CNTL (continued).

14993='GILSONITE'	00000650
14994='MICA'	00000660
14998='VERMICULITE';	00000670
PROC SORT;	00000680
BY SIC	00000690
DESCENDING NUMAVM;	00000700
DATA MONE;	00000710
SET ONE; BY SIC DESCENDING NUMAVM;	00000720
IF SIC EQ 10110;	00000730
IF ((STCD EQ 04) OR (STCD EQ 42))	00000740
THEN GEO=9 ;	00000750
IF ((STCD EQ 41))	00000760
THEN GEO=4 ;	00000770
IF ((STCD EQ 21) OR (STCD EQ 20) OR (STCD EQ 47))	00000780
THEN GEO=2 ;	00000790
IF ((STCD EQ 23))	00000800
THEN GEO=9 ;	00000810
IF ((STCD EQ 48))	00000820
THEN GEO=9 ;	00000830
PROC SORT;	00000840
BY SIC GEO DESCENDING NUMAVM;	00000850
DATA MTWO;	00000860
SET ONE; BY SIC DESCENDING NUMAVM;	00000870
IF SIC EQ 10210;	00000880
IF ((STCD EQ 02))	00000890
THEN GEO=1 ;	00000900
IF ((STCD EQ 29) OR (STCD EQ 26) OR (STCD EQ 42))	00000910
THEN GEO=4 ;	00000920
IF ((STCD EQ 40) OR (STCD EQ 10))	00000930
THEN GEO=5 ;	00000940
IF ((STCD EQ 20))	00000950
THEN GEO=9 ;	00000960
IF ((STCD EQ 24))	00000970
THEN GEO=3 ;	00000980
PROC SORT;	00000990
BY SIC GEO DESCENDING NUMAVM;	00001000
	00001010
	00001020
DATA MTHREE;	00001030
SET ONE; BY SIC DESCENDING NUMAVM;	00001040
IF SIC EQ 10310;	00001050
IF ((STCD EQ 23))	00001060
THEN GEO=3 ;	00001070
IF ((STCD EQ 40))	00001080
THEN GEO=4 ;	00001090
IF ((STCD EQ 10))	00001100
THEN GEO=2 ;	00001110
IF ((STCD EQ 05))	00001120
THEN GEO=1 ;	00001130
PROC SORT;	00001140
BY SIC GEO DESCENDING NUMAVM;	00001150
DATA MSILVER;	00001160
SET ONE; BY SIC DESCENDING NUMAVM;	00001170
IF SIC EQ 10440;	00001180
GEO=8 ;	00001190
PROC SORT;	00001200
BY SIC GEO DESCENDING NUMAVM;	00001210
	00001220
DATA MFOUR;	00001230
SET ONE; BY SIC DESCENDING NUMAVM;	00001240

Table 16. Listing of OSH.BILD.MTLSTRAT.CNTL (continued).

IF SIC EQ 10510;	00001250
IF ((STCD EQ 03))	00001260
THEN GEO=1 ;	00001270
IF ((STCD EQ 09) OR (STCD EQ 01))	00001280
THEN GEO=9 ;	00001290
PROC SORT;	00001300
BY SIC GEO DESCENDING NUMAVM;	00001310
	00001320
	00001330
DATA MFIVE;	00001340
SET ONE; BY SIC DESCENDING NUMAVM;	00001350
IF SIC EQ 10612;	00001360
GEO=9 ;	00001370
PROC SORT;	00001380
BY SIC GEO DESCENDING NUMAVM;	00001390
	00001400
	00001410
	00001420
DATA MSIX;	00001430
SET ONE; BY SIC DESCENDING NUMAVM;	00001440
IF SIC EQ 10614;	00001450
GEO=9 ;	00001460
PROC SORT;	00001470
BY SIC GEO DESCENDING NUMAVM;	00001480
	00001490
	00001500
DATA MSEVEN;	00001510
SET ONE; BY SIC DESCENDING NUMAVM;	00001520
IF SIC EQ 10615;	00001530
IF ((STCD EQ 05) OR (STCD EQ 29))	00001540
THEN GEO=1 ;	00001550
IF ((STCD EQ 42))	00001560
THEN GEO=9 ;	00001570
IF ((STCD EQ 10))	00001580
THEN GEO=9 ;	00001590
PROC SORT;	00001600
BY SIC GEO DESCENDING NUMAVM;	00001610
	00001620
	00001630
DATA MEIGHT;	00001640
SET ONE; BY SIC DESCENDING NUMAVM;	00001650
IF SIC EQ 10616;	00001660
GEO=9 ;	00001670
PROC SORT;	00001680
BY SIC GEO DESCENDING NUMAVM;	00001690
	00001700
	00001710
DATA MNINE;	00001720
SET ONE; BY SIC DESCENDING NUMAVM;	00001730
IF SIC EQ 10940;	00001740
GEO=8 ;	00001750
PROC SORT;	00001760
BY SIC GEO DESCENDING NUMAVM;	00001770
DATA MTEN;	00001780
SET ONE; BY SIC DESCENDING NUMAVM;	00001790
IF SIC EQ 10942;	00001800
IF ((STCD EQ 03))	00001810
THEN GEO=9 ;	00001820
IF ((STCD EQ 10))	00001830
THEN GEO=9 ;	00001840
IF ((STCD EQ 05))	

Table 16. Listing of OSH.BILD.MTLSTRAT.CNTL (continued).

THEN GEO=9 ;	00001850
PROC SORT;	00001860
BY SIC GEO DESCENDING NUMAVM;	00001870
	00001880
	00001890
DATA METAL;	00001900
SET MONE MTWO MTHREE MSILVER MFOUR MFIVE MSIX MSEVEN MEIGHT	00001910
MNINE MTEN;	00001920
BY SIC GEO DESCENDING NUMAVM;	00001930
IF ((AVM1 EQ 0) AND	00001940
(AVM2 EQ 0) AND	00001950
(AVM4 EQ 0) AND	00001960
(AVM5 EQ 0) AND	00001970
(AVM8 EQ 0) AND	00001980
(AVM13 EQ 0) AND	00001990
(AVM6 EQ 0) AND	00002000
(AVM7 EQ 0) AND	00002010
(AVM9 EQ 0)) THEN DELETE;	00002020
PROC SORT; BY MID;	00002030
DATA AMETAL;	00002040
INFILE INDATA2;	00002050
INPUT @1 MID 7. ;	00002060
WT=' A';	00002070
PROC SORT; BY MID;	00002080
DATA MTLMERGE;	00002090
MERGE METAL	00002100
AMETAL;	00002110
BY MID;	00002120
PROC SORT; BY SIC GEO DESCENDING NUMAVM;	00002130
DATA METAL2;	00002140
SET MTLMERGE;	00002150
BY SIC GEO DESCENDING NUMAVM;	00002160
IF (WT EQ ' A') THEN DELETE;	00002170
PROC SORT; BY SIC MID;	00002180
PROC PRINT PAGE N;	00002190
BY SIC ;	00002200
VAR MID SIC GEO NUMAVM AVM1 AVM2 AVM3 AVM4 AVM5 AVM6	00002210
AVM7 AVM8 AVM9 WT;	00002220
FORMAT SIC SICFMT.;	00002230
TITLE1 'SAMPLE FRAME #6';	00002240
TITLE2 'ACTIVE METAL MINES FOR SECOND ROUND OF SAMPLING';	00002250
TITLE3 'LISTED BY SIC, MID';	00002260
PROC SORT; BY MID;	00002270
PROC PRINT N;	00002280
VAR MID SIC GEO NUMAVM AVM1 AVM2 AVM3 AVM4 AVM5 AVM6	00002290
AVM7 AVM8 AVM9 WT;	00002300
FORMAT SIC SICFMT.;	00002310
TITLE1 'SAMPLE FRAME #6';	00002320
TITLE2 'ACTIVE METAL MINES FOR SECOND ROUND OF SAMPLING';	00002330
TITLE3 'LISTED BY MID';	00002340
PROC SORT;	00002350
BY SIC GEO DESCENDING NUMAVM;	00002360
DATA METAL3;	00002370
SET METAL2; BY SIC GEO DESCENDING NUMAVM;	00002380
FILE OUTDATA2;	00002390
PUT @1 MID 7. @8 SIC 5. @13 GEO 1. @14 WT \$3.	00002400
@17 NUMSUB 2. @19 NUMAVM 10.2	00002410
@29 SUB1 2. @31 AVM1 8.2	00002420
@39 SUB2 2. @41 AVM2 8.2	00002430
@49 SUB3 2. @51 AVM3 8.2	00002440

Table 16. Listing of OSH.BILD.MTLSTRAT.CNTL (continued).

259 SUB4 2. 261 AVM4 8.2	00002450
269 SUB5 2. 271 AVM5 8.2	00002460
279 SUB6 2. 281 AVM6 8.2	00002470
289 SUB7 2. 291 AVM7 8.2	00002480
299 SUB8 2. 2101 AVM8 8.2	00002490
2109 SUB9 2. 2111 AVM9 8.2;	00002500
DATA METAL4;	00002520
SET METAL2; BY SIC GEO DESCENDING NUMAVM;	00002530
FILE OUTDATA3;	00002540
IF (((SIC EQ 10110) AND (GEO EQ 4)) OR	00002550
((SIC EQ 10210) AND ((GEO EQ 0) OR (GEO EQ 3) OR (GEO EQ 5))) OR	00002560
((SIC EQ 10310) AND ((GEO EQ 1) OR (GEO EQ 2))) OR	00002570
((SIC EQ 10510) AND (GEO EQ 1)) OR	00002580
((SIC EQ 10612) AND (GEO EQ 9)) OR	00002585
((SIC EQ 10615) AND ((GEO EQ 0) OR (GEO EQ 1))));	00002590
IF WT=' ' THEN WT=' 0';	00002600
FILE OUTDATA3;	00002610
PUT 21 MID 7. 28 SIC 5. 213 GEO 1. 214 WT \$3.	00002620
217 NUMSUB 2. 219 NUMAVM 10.2	00002630
229 SUB1 2. 231 AVM1 8.2	00002640
239 SUB2 2. 241 AVM2 8.2	00002650
249 SUB3 2. 251 AVM3 8.2	00002660
259 SUB4 2. 261 AVM4 8.2	00002670
269 SUB5 2. 271 AVM5 8.2	00002680
279 SUB6 2. 281 AVM6 8.2	00002690
289 SUB7 2. 291 AVM7 8.2	00002700
299 SUB8 2. 2101 AVM8 8.2	00002710
2109 SUB9 2. 2111 AVM9 8.2;	00002720

Table 17. Listing of OSH.BILD.NMSTRAT.CNTL

```
//RUK119 JOB (OSH,MNMSY,99),MOORE,CLASS=A,NOTIFY=$RUK,MSGCLASS=T      00000010
/*PASS $$$                                                              00000015
// EXEC SAS                                                              00000020
//FT11F001 DD SYSOUT=A                                                 00000030
//FT12F001 DD SYSOUT=A                                                 00000040
//INDATA2 DD DSN=$RUK.OSH.NMSIC.DATA,DISP=SHR                          00000050
//INDATA3 DD DSN=$RUK.OSH.FIRST.SRU.DATA,DISP=SHR                     00000060
//OUTDATA2 DD DSN=$RUK.OSH.NMSTRAT.DATA,DISP=(NEW,CATLG,DELETE),      00000070
// UNIT=3350,VOL=SER=USRTS3,DCB=(RECFN=FB,LRECL=130,BLKSIZE=2600),  00000080
// SPACE=(TRK,(40,10),RLSE)                                           00000090
//OUTDATA3 DD DSN=$RUK.OSH.NMSRU.DATA,DISP=(NEW,CATLG,DELETE),        00000100
// UNIT=3350,VOL=SER=USRTS3,DCB=(RECFN=FB,LRECL=130,BLKSIZE=2600),  00000110
// SPACE=(TRK,(40,10),RLSE)                                           00000120
//SYSIN DD *                                                            00000130
* ;                                                                      00000140
* OSH.BILD.NMSTRAT..CNTL--CREATE AND LIST NMSTRAT.DATA FILE * ;      00000150
* ;                                                                      00000160
OPTIONS MISSING='0';                                                  00000170
DATA ONE1;                                                            00000180
- INFILE INDATA2;                                                      00000190
  INPUT @1 MID 7. @1 STCD 2. @8 SIC 5. @8 SICX 5.                      00000200
    @13 NUMSUB 2. @15 NUMAVM 10.2                                     00000210
    @25 SUB1 2. @27 AVM1 8.2                                         00000220
    @35 SUB2 2. @37 AVM2 8.2                                         00000230
    @45 SUB3 2. @47 AVM3 8.2                                         00000240
    @55 SUB4 2. @57 AVM4 8.2                                         00000250
    @65 SUB5 2. @67 AVM5 8.2                                         00000260
    @75 SUB6 2. @77 AVM6 8.2                                         00000270
    @85 SUB7 2. @87 AVM7 8.2                                         00000280
    @95 SUB8 2. @97 AVM8 8.2                                         00000290
    @105 SUB9 2. @107 AVM9 8.2;                                       00000300
TOT=SUM(AVM1,AVM2,AVM3,AVM4,AVM5,AVM6,AVM7,AVM8,AVM9);              00000320
```

Table 17. Listing of OSH.BILD.NMSTRAT.CNTL (continued).

IF SICX EQ 10941 THEN SIC=10940;	00000330
IF SICX EQ 14550 THEN SIC=14530;	00000340
IF SICX EQ 14590 THEN SIC=14530;	00000350
IF SICX EQ 28191 THEN SIC=10510;	00000360
GEO=0;	00000370
DATA TWO;	00000400
SET ONE1;	00000410
IF NUMAVM NE 0;	00000420
IF TOT NE 0;	00000430
PROC FORMAT;	00000460
VALUE SICFMT	00000470
10110='IRON ORE'	00000480
10210='COPPER ORE'	00000490
10310='LEAD/ZINC ORES'	00000500
10440='SILVER'	00000510
10510='ALUMINUM ORE+'	00000520
10612='COBALT'	00000530
10614='MANGANESE'	00000540
10615='MOLYBDENUM'	00000550
10616='NICKEL'	00000560
10940='URANIUM+'	00000570
10942='VANADIUM'	00000580
14530='CLAY GROUP'	00000590
14720='BARITE'	00000600
14750='PHOSPHATE ROCK'	00000610
14920='GYPSUM'	00000620
14991='ASBESTOS'	00000630
14993='GILSONITE'	00000640
14994='MICA'	00000650
14998='VERMICULITE';	00000660
PROC SORT;	00000670
BY SIC	00000680
DESCENDING NUMAVM;	00000690
DATA NMONE;	00000700
SET TWO; BY SIC DESCENDING NUMAVM;	00000710
IF SIC EQ 14530;	00000720
IF ((STCD EQ 48) OR (STCD EQ 24) OR (STCD EQ 39))	00000730
THEN GEO=6 ;	00000740
IF ((STCD EQ 22) OR (STCD EQ 01))	00000750
THEN GEO=3 ;	00000760
IF ((STCD EQ 23) OR (STCD EQ 33) OR (STCD EQ 36))	00000770
THEN GEO=2 ;	00000780
IF ((STCD EQ 09) OR (STCD EQ 08) OR (STCD EQ 38))	00000790
THEN GEO=1 ;	00000800
IF ((STCD EQ 40) OR (STCD EQ 15))	00000810
THEN GEO=4 ;	00000820
IF ((STCD EQ 41) OR (STCD EQ 31))	00000830
THEN GEO=5 ;	00000840
PROC SORT;	00000850
BY SIC GEO DESCENDING NUMAVM;	00000860
	00000870
	00000880
DATA NMTWO;	00000890
SET TWO; BY SIC DESCENDING NUMAVM;	00000900
IF SIC EQ 14720;	00000910
IF ((STCD EQ 03) OR (STCD EQ 26))	00000920
THEN GEO=1 ;	00000930
IF ((STCD EQ 24) OR (STCD EQ 09) OR (STCD EQ 40))	00000940
THEN GEO=2 ;	00000950
PROC SORT;	00000960

Table 17. Listing of OSH.BILD.NMSTRAT.CNTL (continued).

BY SIC GEO DESCENDING NUMAVM;	00000970
	00000980
DATA NMTHREE;	00000990
SET TWO; BY SIC DESCENDING NUMAVM;	00001000
IF SIC EQ 14750;	00001010
IF ((STCD EQ 08))	00001020
THEN GEO=1 ;	00001030
IF ((STCD EQ 31))	00001040
THEN GEO=9 ;	00001050
IF ((STCD EQ 10))	00001060
THEN GEO=2 ;	00001070
IF ((STCD EQ 40))	00001080
THEN GEO=4 ;	00001090
PROC SORT;	00001100
BY SIC GEO DESCENDING NUMAVM;	00001110
	00001120
	00001130
	00001140
DATA NMFOUR;	00001150
SET TWO; BY SIC DESCENDING NUMAVM;	00001160
IF SIC EQ 14920;	00001170
GEO=8 ;	00001180
PROC SORT;	00001190
BY SIC GEO DESCENDING NUMAVM;	00001200
	00001210
	00001220
DATA NMFIVE;	00001230
SET TWO; BY SIC DESCENDING NUMAVM;	00001240
IF SIC EQ 14991;	00001250
IF ((MID EQ 401061) OR (MID EQ 402547))	00001260
THEN GEO=9 ;	00001270
IF ((MID EQ 401059) OR (MID EQ 401062) OR (MID EQ 402550)	00001280
OR (MID EQ 402554))	00001290
THEN GEO=9 ;	00001300
IF ((STCD EQ 02))	00001310
THEN GEO=9 ;	00001320
IF ((STCD EQ 43))	00001330
THEN GEO=9 ;	00001340
PROC SORT;	00001350
BY SIC GEO DESCENDING NUMAVM;	00001360
	00001370
	00001380
DATA NMSIX;	00001390
SET TWO; BY SIC DESCENDING NUMAVM;	00001400
IF SIC EQ 14993;	00001410
GEO=8 ;	00001420
PROC SORT;	00001430
BY SIC GEO DESCENDING NUMAVM;	00001440
	00001450
	00001460
DATA NMSEVEN;	00001470
SET TWO; BY SIC DESCENDING NUMAVM;	00001480
IF SIC EQ 14994;	00001490
IF ((STCD EQ 31))	00001500
THEN GEO=1 ;	00001510
PROC SORT;	00001520
BY SIC GEO DESCENDING NUMAVM;	00001530
	00001540
	00001550
DATA NMEIGHT;	00001560

Table 17. Listing of OSH.BILD.NMSTRAT.CNTL (continued).

SET TWO; BY SIC DESCENDING NUMAVM;	00001570
IF SIC EQ 14998;	00001580
IF ((STCD EQ 24))	00001590
THEN GEO=9 ;	00001600
IF ((STCD EQ 44))	00001610
THEN GEO=9 ;	00001620
IF ((STCD EQ 38))	00001630
THEN GEO=9 ;	00001640
IF ((STCD EQ 41))	00001650
THEN GEO=9 ;	00001660
PROC SORT;	00001670
BY SIC GEO DESCENDING NUMAVM;	00001680
	00001690
	00001700
	00001710
	00001720
DATA NMETAL;	00001730
SET NMONE NMTWO NMTHREE NMFOUR NMFIVE NMSIX NMSEVEN NMEIGHT ;	00001740
BY SIC GEO DESCENDING NUMAVM;	00001750
IF ((AVM1 EQ 0) AND	00001760
(AVM2 EQ 0) AND	00001770
(AVM3 EQ 0) AND	00001780
(AVM4 EQ 0) AND	00001790
(AVM5 EQ 0) AND	00001800
(AVM6 EQ 0) AND	00001810
(AVM7 EQ 0) AND	00001820
(AVM8 EQ 0) AND	00001830
(AVM9 EQ 0)) THEN DELETE;	00001840
PROC SORT; BY MID;	00001850
DATA ANMETAL;	00001860
INFILE INDATA3;	00001870
INPUT @1 MID 7. ;	00001880
WT=' A' ;	00001890
PROC SORT; BY MID;	00001900
DATA NMERGE;	00001910
MERGE NMETAL	00001920
ANMETAL;	00001930
BY MID;	00001940
PROC SORT; BY SIC GEO DESCENDING NUMAVM;	00001950
DATA NMETAL2;	00001960
SET NMERGE;	00001970
BY SIC GEO DESCENDING NUMAVM;	00001980
IF (WT EQ ' A') THEN DELETE;	00001990
PROC SORT; BY SIC MID;	00002000
PROC PRINT PAGE N;	00002010
BY SIC;	00002020
VAR MID SIC GEO NUMAVM AVM1 AVM2 AVM3 AVM4 AVM5 AVM6	00002030
AVM7 AVM8 AVM9 WT;	00002040
FORMAT SIC SICFMT.;	00002050
TITLE1 'SAMPLE FRAME #6';	00002060
TITLE2 'ACTIVE NONMETAL MINES FOR SECOND ROUND OF SAMPLING';	00002070
TITLE3 'LISTED BY SIC AND MID';	00002080
PROC SORT; BY MID;	00002090
PROC PRINT N;	00002100
VAR MID SIC GEO NUMAVM AVM1 AVM2 AVM3 AVM4 AVM5 AVM6	00002110
AVM7 AVM8 AVM9 WT;	00002120
FORMAT SIC SICFMT.;	00002130
TITLE1 'SAMPLE FRAME #6';	00002140
TITLE2 'ACTIVE NONMETAL MINES FOR SECOND ROUND OF SAMPLING';	00002150
TITLE3 'LISTED BY MID';	00002160

Table 17. Listing of OSH.BILD.NMSTRAT.CNTL (continued).

PROC SORT;	00002170
BY SIC GEO DESCENDING NUMAVM;	00002180
DATA NMETAL3;	00002190
SET NMETAL2; BY SIC GEO DESCENDING NUMAVM;	00002200
FILE OUTDATA2;	00002210
PUT @1 MID 7. @8 SIC 5. @13 GEO 1. @14 WT \$3.	00002220
@17 NUMSUB 2. @19 NUMAVM 10.2	00002230
@29 SUB1 2. @31 AVM1 8.2	00002240
@39 SUB2 2. @41 AVM2 8.2	00002250
@49 SUB3 2. @51 AVM3 8.2	00002260
@59 SUB4 2. @61 AVM4 8.2	00002270
@69 SUB5 2. @71 AVM5 8.2	00002280
@79 SUB6 2. @81 AVM6 8.2	00002290
@89 SUB7 2. @91 AVM7 8.2	00002300
@99 SUB8 2. @101 AVM8 8.2	00002310
@109 SUB9 2. @111 AVM9 8.2;	00002320
DATA NMETAL4;	00002340
SET NMETAL2; BY SIC GEO DESCENDING NUMAVM;	00002350
IF (((SIC EQ 14720) AND (GEO EQ 2)) OR	00002360
((SIC EQ 14750) AND ((GEO EQ 0) OR (GEO EQ 2))) OR	00002370
((SIC EQ 14993) AND (GEO EQ 8)) OR	00002380
((SIC EQ 14994) AND (GEO EQ 1)) OR	00002390
((SIC EQ 14998) AND (GEO EQ 0)))	00002400
IF WT= ' ' THEN WT= ' 0';	00002410
FILE OUTDATA3;	00002420
PUT @1 MID 7. @8 SIC 5. @13 GEO 1. @14 WT \$3.	00002430
@17 NUMSUB 2. @19 NUMAVM 10.2	00002440
@29 SUB1 2. @31 AVM1 8.2	00002450
@39 SUB2 2. @41 AVM2 8.2	00002460
@49 SUB3 2. @51 AVM3 8.2	00002470
@59 SUB4 2. @61 AVM4 8.2	00002480
@69 SUB5 2. @71 AVM5 8.2	00002490
@79 SUB6 2. @81 AVM6 8.2	00002500
@89 SUB7 2. @91 AVM7 8.2	00002510
@99 SUB8 2. @101 AVM8 8.2	00002520
@109 SUB9 2. @111 AVM9 8.2;	00002530

Table 18. Listing of OSH.MTLSRU.DATA.

41023201011104	0 1	15.00 0	0.00 0	0.00 1	15.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
3502868102100	0 2	32.00 1	22.00 1	10.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
301496102100	0 1	2.00 0	0.00 0	0.00 1	2.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
402490102100	0 1	0.67 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 1	0.67 0	0.00 0	0.00 0
2400721102103	0 1	28.75 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 1	28.75 0	0.00 0
4002040102105	0 1	265.50 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 1	265.50 0	0.00 0
4002633102105	0 1	85.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 1	85.00 0	0.00 0
4000706102105	0 1	70.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 1	70.00 0	0.00 0
4002074102105	0 1	54.00 0	0.00 0	0.00 1	54.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
4000708102105	0 2	43.00 1	43.00 1	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
1001458102105	0 1	21.67 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 1	21.67 0
500604103101	0 2	76.25 1	68.75 1	7.50 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
500411103101	0 3	31.00 1	27.75 1	3.25 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 1	0.00 0
503428103101	0 2	12.50 1	8.50 1	4.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
500414103101	0 3	12.00 1	2.00 1	10.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 1	0.00 0
503074103101	0 1	3.00 1	3.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
503103103101	0 2	3.00 2	3.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
503174103101	0 1	2.50 1	2.50 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
1000189103102	0 1	4.00 1	4.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
1001317103102	0 2	4.00 1	2.00 1	2.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
1000502103102	0 1	0.67 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 1	0.67 0
300470105101	0 1	24.50 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 1	24.50 0
300715105101	0 1	4.50 0	0.00 0	0.00 1	4.50 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
301141105101	0 1	3.00 0	0.00 0	0.00 1	3.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
2301770106129	0 2	27.75 1	0.00 1	27.75 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
2601483106150	013	585.00 0	0.00 0	0.0010	498.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 3	87.00 0
2401590106150	0 2	8.00 2	8.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
2901267106151	0 9	201.00 4	0 4	174.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 1	27.00 0
502255106151	0 1	5.00 1	5.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0

Table 19. Listing of OSH.NMSRU.DATA.

2401220147202	0 1	15.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 1	15.00
4002521147202	0 1	3.00 0	0.00 0	0.00 1	3.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00
4002549147202	0 1	2.67 0	0.00 0	0.00 1	2.67 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00
2400146147500	0 2	108.25 1	78.25 1	30.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00
4800160147500	0 3	72.75 0	0.00 0	0.00 1	6.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 2	66.75
4200998147500	0 1	50.75 0	0.00 0	0.00 1	50.75 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00
4200164147500	0 1	28.50 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 1	28.50
4200842147500	0 1	9.75 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 1	9.75
1000095147502	0 1	96.25 0	0.00 0	0.00 1	96.25 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00
1001408147502	0 1	77.75 0	0.00 0	0.00 1	77.75 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00
1000091147502	0 1	3.00 0	0.00 0	0.00 1	3.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00
4201200149938	0 2	3.25 1	2.25 1	1.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00
4201395149938	0 2	3.00 1	2.00 1	1.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00
3101148149941	0 1	37.25 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 1	37.25
3101746149941	0 1	21.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 1	21.00
3100675149941	0 1	12.75 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 1	12.75
3100381149941	0 1	9.25 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 1	9.25
3101080149941	0 1	5.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 1	5.00
301364149980	0 1	20.50 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 1	20.50
2301650149980	0 1	14.50 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 1	14.50

Table 20. Listing of OSH.BILD.CONCAT.CNTL.

OBS	RECI
1	//RUKCON JOB (OSH,MHMSY,99),MOORE,CLASS=A,NOTIFY=\$RUK,MSGCLASS=T
2	// EXEC SAS
3	//FT11F001 DD SYSOUT=T,HOLD=YES
4	//FT12F001 DD SYSOUT=T,HOLD=YES
5	//INDATA1 DD DSN=\$RUK.OSH.MTLSTRAT.DATA,DISP=SHR
6	//INDATA2 DD DSN=\$RUK.OSH.NMSTRAT.DATA,DISP=SHR
7	//OUTDATA2 DD DSN=\$RUK.OSH.CONCAT.DATA,DISP=(NEW,CATLG,DELETE),
8	// UNIT=3350,VOL=SER=USRTS3,DCB=(RECFM=FB,LRECL=130,BLKSIZE=2600),
9	// SPACE=(TRK,(40,10),RLSE)
10	//SYSIN DD *
11	DATA ONE ; INFILE INDATA1;
12	INPUT @1 A \$CHAR130. ;
13	DATA TWO ; INFILE INDATA2;
14	INPUT @1 A \$CHAR130. ;
15	DATA THREE; SET ONE TWO ;
16	DATA THREE; SET THREE;
17	FILE OUTDATA2;
18	PUT @1 A \$CHAR130. ;

Table 21. Listing of OSH.BILD.XSRU.CNTL.

OBS	REC1
1	//RUKSRU JOB (OSH,MNMSY,99),MOORE,CLASS=A,NOTIFY=\$RUK,MSGCLASS=T
2	// EXEC SAS
3	//FT11F001 DD SYSOUT=T,HOLD=YES
4	//FT12F001 DD SYSOUT=T,HOLD=YES
5	//INDATA1 DD DSN=\$RUK.OSH.MTL\$RU.D\$TA,DISP=SHR
6	//INDATA2 DD DSN=\$RUK.OSH.NMSRU.D\$TA,DISP=SHR
7	//OUTDATA2 DD DSN=\$RUK.OSH.XSRU.D\$TA,DISP=(NEW,CATLG,DELETE),
8	// UNIT=3350,VOL=SER=USRTS3,DCB=(RECFM=FB,LRECL=130,BLKSIZE=2600),
9	// SPACE=(TRK,(40,10),RLSE)
10	//SYSIN DD *
11	* ;
12	* OSH.BILD.XSRU.CNTL * ;
13	* ;
14	DATA ONE ; INFILE INDATA1;
15	INPUT @1 A \$CHAR130. ;
16	DATA TWO ; INFILE INDATA2;
17	INPUT @1 A \$CHAR130. ;
18	DATA THREE; SET ONE TWO ;
19	DATA THREE; SET THREE;
20	FILE OUTDATA2;
21	PUT @1 A \$CHAR130. ;

Table 22. Listing of OSH.BILD.SELECT.CNTL.

```
//RUKSEL JOB (OSH,MNMSY),MOORE,CLASS=E,NOTIFY=$RUK,MSGCLASS=T      00000010
/*PASS $$$                                                         00000015
// EXEC SAS                                                         00000020
//FT11F001 DD SYSOUT=A                                           00000030
//FT12F001 DD SYSOUT=A                                           00000040
//INDATA1 DD DSN=$RUK.OSH.CONCAT.DATA,DISP=SHR                  00000050
//OUTPUT DD DSN=OSH.RUKMNMSY.SELECT,DISP=(OLD,KEEP),UNIT=MSS,    00000060
// MSVGP=PUBLIC,LABEL=(,SL,RETPD=180)                             00000070
//SYSIN DD *                                                       00000080
* ;                                                                 00000090
* OSH.BILD.SELECT.CNTL--CREATE AND LIST OSH.SELECT.DATA * ;      00000100
* ;                                                                 00000110
DATA ONE;                                                         00000120
  INFILE INDATA1;                                                 00000130
  INPUT @1 MID 7. @1 SMID 7. @8 SIC 5. @8 SICX 5. @8 SC 6. @14 WT $3. 00000140
    @17 NUMSUB 2. @19 NUMAVM 10.2                                00000150
    @29 SUB1 2. @31 AVM1 8.2                                     00000160
    @39 SUB2 2. @41 AVM2 8.2                                     00000170
    @49 SUB3 2. @51 AVM3 8.2                                     00000180
    @59 SUB4 2. @61 AVM4 8.2                                     00000190
    @69 SUB5 2. @71 AVM5 8.2                                     00000200
    @79 SUB6 2. @81 AVM6 8.2                                     00000210
    @89 SUB7 2. @91 AVM7 8.2                                     00000220
    @99 SUB8 2. @101 AVM8 8.2                                    00000230
    @109 SUB9 2. @111 AVM9 8.2;                                  00000240
  IF ((SC NE 101104) AND                                         00000260
    (SC NE 102100) AND                                         00000270
    (SC NE 102103) AND                                         00000280
    (SC NE 102105) AND                                         00000290
    (SC NE 103101) AND                                         00000295
    (SC NE 103102) AND                                         00000300
    (SC NE 105101) AND                                         00000310
    (SC NE 106129) AND                                         00000315
    (SC NE 106150) AND                                         00000320
    (SC NE 106151) AND                                         00000330
    (SC NE 147202) AND                                         00000340
    (SC NE 147500) AND                                         00000350
    (SC NE 147502) AND                                         00000360
    (SC NE 149938) AND                                         00000370
    (SC NE 149941) AND                                         00000380
    (SC NE 149980));                                           00000390
  PROC SORT; BY SC MID;                                         00000400
  PROC PRINT PAGE N;                                           00000410
    BY SC;                                                      00000420
    VAR MID SMID SC SIC SICX NUMAVM AVM1 AVM2 AVM3 AVM4 AVM5 AVM6 00000430
      AVM7 AVM8 AVM9 WT;                                         00000440
    TITLE1 'SAMPLE FRAME #6';                                   00000450
    TITLE2 'ACTIVE MTL AND NM MINES FOR SECOND ROUND OF SAMPLING'; 00000460
    TITLE3 'CONCATENATED AND LISTED BY SC AND MID';           00000470
  PROC SORT; BY MID ;                                           00000480
  PROC PRINT N;                                                 00000490
    VAR MID SMID SC SIC SICX NUMAVM AVM1 AVM2 AVM3 AVM4 AVM5 AVM6 00000500
      AVM7 AVM8 AVM9 WT;                                         00000510
    TITLE1 'SAMPLE FRAME #6';                                   00000520
    TITLE2 'ACTIVE MTL AND NM MINES FOR SECOND ROUND OF SAMPLING'; 00000530
    TITLE3 'CONCATENATED AND LISTED BY MID';                   00000540
  PROC SORT; BY SC DESCENDING NUMAVM;                          00000550
  DATA OUTPUT.SELECT;                                          00000560
  SET ONE; BY SC DESCENDING NUMAVM;                             00000570
```

Table 23. Contents of SAS data set INPUT1.SELECT.

TRACKS USED=12 SUBEXTENTS=2 OBSERVATIONS=982 CREATED BY JOB RUKCNT AT 21:06 FRIDAY, OCTOBER 22, 1982 BY SAS RELEASE 79.6
DSNAME=SY582295.T210548.RD000.RUKCNT.R0000001 BLKSIZE=19048 LRECL=207 OBSERVATIONS PER TRACK=92 GENERATED BY DATA

LIST OF VARIABLES BY POSITION

#	VARIABLE	TYPE	LENGTH	POSITION
1	MID	NUM	8	4
2	SMID	NUM	8	12
3	SIC	NUM	8	20
4	SICX	NUM	8	28
5	SC	NUM	8	36
6	WT	CHAR	3	44
7	NUMSUB	NUM	8	47
8	NUMAVM	NUM	8	55
9	SUB1	NUM	8	63
10	AVM1	NUM	8	71
11	SUB2	NUM	8	79
12	AVM2	NUM	8	87
13	SUB3	NUM	8	95
14	AVM3	NUM	8	103
15	SUB4	NUM	8	111
16	AVM4	NUM	8	119
17	SUB5	NUM	8	127
18	AVM5	NUM	8	135
19	SUB6	NUM	8	143
20	AVM6	NUM	8	151
21	SUB7	NUM	8	159
22	AVM7	NUM	8	167
23	SUB8	NUM	8	175
24	AVM8	NUM	8	183
25	SUB9	NUM	8	191
26	AVM9	NUM	8	199

ALPHABETIC LIST OF VARIABLES

#	VARIABLE	TYPE	LENGTH	POSITION
10	AVM1	NUM	8	71
12	AVM2	NUM	8	87
14	AVM3	NUM	8	103
16	AVM4	NUM	8	119
18	AVM5	NUM	8	135
20	AVM6	NUM	8	151
22	AVM7	NUM	8	167
24	AVM8	NUM	8	183
26	AVM9	NUM	8	199
1	MID	NUM	8	4
8	NUMAVM	NUM	8	55
7	NUMSUB	NUM	8	47
5	SC	NUM	8	36
3	SIC	NUM	8	20
4	SICX	NUM	8	28
2	SMID	NUM	8	12
9	SUB1	NUM	8	63
11	SUB2	NUM	8	79
13	SUB3	NUM	8	95
15	SUB4	NUM	8	111
17	SUB5	NUM	8	127
19	SUB6	NUM	8	143
21	SUB7	NUM	8	159
23	SUB8	NUM	8	175
25	SUB9	NUM	8	191
6	WT	CHAR	3	44

Table 24. Listing of OSH.BILD.LABELNEW.CNTL.

```
//RUKLBL JOB (OSH,MNMSY,99),MOORE,CLASS=A,NOTIFY=$RUK,MSGCLASS=T      00000010
/*PASS $$$                                                              00000015
/*ROUTE XEQ MSS                                                         00000020
//STEP1 EXEC SAS, SORT=10, REGION=512K                                  00000030
//FT11F001 DD SYSOUT=T, HOLD=YES                                         00000040
//FT12F001 DD SYSOUT=T, HOLD=YES                                         00000050
//INDATA1 DD DSN=OSH.RUK.METAL80.WORKMSS, DISP=SHR, UNIT=MSS           00000060
//INDATA2 DD DSN=$RUK.OSH.SICFMT.DATA, DISP=SHR                         00000070
//INDATA3 DD DSN=$RUK.OSH.SUBDFMT.DATA, DISP=SHR                       00000080
//INDATA4 DD DSN=$RUK.OSH.JIND.TABLE.DATA, DISP=SHR                    00000090
//OUTPUT DD DSN=OSH.RUKMNMSY.LABELNEW, UNIT=MSS,                       00000100
// DISP=(OLD,KEEP), LABEL=(,SL,RETPD=180),                               00000110
// MSVGP=PUBLIC                                                         00000120
//SYSIN DD *                                                            00000130
* ;                                                                      00000140
* OSH.BILD.LABELNEW.CNTL--FOR USE WITH SURVEILLANCE SAMPLING PGMS*;    00000150
* ;                                                                      00000160
DATA ONE;                                                              00000170
  INFILE INDATA1;                                                       00000180
  INPUT @1 MID 7. @8 COMP 2. @10 SUBD 4. @14 STCD 2. @16 CTCD 3.         00000190
    @19 SIC 5. @19 SICX 5. @24 STATUS $1. @ 25 STDT $6.                00000200
    @31 OWNEROP $CHAR30.                                                 00000210
    @61 MNNAME $CHAR30. @91 STADD $CHAR30. @121 CITY $CHAR13.          00000220
    @134 STATE $2. @136 ZIP 5. @141 UPDTC 2. @143 NUMSUB 2.             00000230
    @145 NUMAVM 10.2                                                     00000240
    @155 SUB1 2. @157 AVM1 8.2                                           00000250
    @165 SUB2 2. @167 AVM2 8.2                                           00000260
    @175 SUB3 2. @177 AVM3 8.2                                           00000270
    @185 SUB4 2. @187 AVM4 8.2                                           00000280
    @195 SUB5 2. @197 AVM5 8.2                                           00000290
    @205 SUB6 2. @207 AVM6 8.2                                           00000300
    @215 SUB7 2. @217 AVM7 8.2                                           00000310
    @225 SUB8 2. @227 AVM8 8.2                                           00000320
    @235 SUB9 2. @237 AVM9 8.2;                                          00000330
  IF SICX EQ 10941 THEN SIC=10940;                                       00000340
  IF SICX EQ 14550 THEN SIC=14530;                                       00000350
  IF SICX EQ 14590 THEN SIC=14530;                                       00000360
  IF SICX EQ 28191 THEN SIC=10510;                                       00000370
```

Table 24. Listing of OSH.BILD.LABELNEW.CNTL (continued).

SUB1NM='UNDERGROUND MINING';	00000330
SUB2NM='SURFACE FACILITIES';	00000390
SUB3NM='SURFACE MINING';	00000400
SUB4NM='AUGER MINING';	00000410
SUB5NM='CULM BANK & REFUSE PILE';	00000420
SUB6NM='DREDGE OPERATIONS';	00000430
SUB7NM='OTHER SURFACE MINING';	00000440
SUB8NM='INDEPENDENT SHOPS & YARDS';	00000450
SUB9NM='MILL OR PREP PLANTS';	00000460
IF SUB1 GT 0 THEN SUB1NM='UNDERGROUND MINING';	00000480
IF SUB2 GT 0 THEN SUB2NM='SURFACE FACILITIES';	00000490
IF SUB3 GT 0 THEN SUB3NM='SURFACE MINING';	00000500
IF SUB4 GT 0 THEN SUB4NM='AUGER MINING';	00000510
IF SUB5 GT 0 THEN SUB5NM='CULM BANK & REFUSE PILE';	00000520
IF SUB6 GT 0 THEN SUB6NM='DREDGE OPERATIONS';	00000530
IF SUB7 GT 0 THEN SUB7NM='OTHER SURFACE MINING';	00000540
IF SUB8 GT 0 THEN SUB8NM='INDEPENDENT SHOPS & YARDS';	00000550
IF SUB9 GT 0 THEN SUB9NM='MILL OR PREP. PLANTS';	00000560
PROC SORT; BY SIC;	00000580
DATA TWO;	00000590
INFILE INDATA2;	00000600
INPUT @1 SIC 5. @10 SICNM \$15.;	00000610
PROC SORT; BY SIC;	00000620
DATA THREE;	00000630
MERGE ONE(IN=INA)	00000640
TWO(IN=INB);	00000650
BY SIC;	00000660
IF INA & INB;	00000670
KEEP MID COMP SUBD STCD CTCD	00000680
SIC SICNM SICX STATUS STDT OWNEROP	00000690
MNNAME STADD CITY STATE ZIP UPDTC NUMSUB NUMAVM	00000700
SUB1NM AVM1	00000710
SUB2NM AVM2	00000720
SUB3NM AVM3	00000730
SUB4NM AVM4	00000740
SUB5NM AVM5	00000750
SUB6NM AVM6	00000760

Table 24. Listing of OSH.BILD.LABELNEW.CNTL (continued).

SUB7NM AVM7	00000770
SUB8NM AVM8	00000780
SUB9NM AVM9;	00000790
PROC SORT; BY SUBD;	00000810
DATA FOUR;	00000820
INFILE INDATA3;	00000830
INPUT @1 SUBD 4. @10 SUBDNM \$20.;	00000840
PROC SORT; BY SUBD;	00000850
DATA FIVE;	00000860
MERGE THREE(IN=INC)	00000870
FOUR(IN=IND);	00000880
BY SUBD;	00000890
IF INC & IND;	00000900
KEEP MID COMP SUBD SUBDNM STCD CTCD	00000910
SIC SICNM SICX STATUS STDT OWNEROP	00000920
MNNAME STADD CITY STATE ZIP UPDTC NUMSUB NUMAVM	00000930
SUB1NM AVM1	00000940
SUB2NM AVM2	00000950
SUB3NM AVM3	00000960
SUB4NM AVM4	00000970
SUB5NM AVM5	00000980
SUB6NM AVM6	00000990
SUB7NM AVM7	00010000
SUB8NM AVM8	00010100
SUB9NM AVM9;	00010200
PROC SORT; BY MID;	00010400
PROC PRINT N;	00010500
VAR MID COMP SUBD SUBDNM STCD CTCD	00010600
SIC SICNM SICX STATUS STDT OWNEROP	00010700
MNNAME STADD CITY STATE ZIP UPDTC NUMSUB NUMAVM	00010800
SUB1NM AVM1	00010900
SUB2NM AVM2	00011000
SUB3NM AVM3	00011100
SUB4NM AVM4	00011200
SUB5NM AVM5	00011300
SUB6NM AVM6	00011400
SUB7NM AVM7	00011500
SUB8NM AVM8	00011600
SUB9NM AVM9;	00011700
TITLE 'LISTING OF OSH.RUKMNMSY.LABELNEW BY MID';	00011900
DATA OUTPUT.LABELNEW;	00012000
SET FIVE; BY MID;	00012100

Table 25. Data elements, file layout, and listing of OSH.SICFMT.DATA.

CHARACTER POSITIONS	MNEMONIC NAME	DATA ELEMENT	EXPLANATION/DESCRIPTION
1-5	SIC	Standard Industrial Classification	Five-digit code, developed by MSHA from the four-digit SIC codes, that designates the primary mineral commodity produced at a site. See Table 4.
10-24	SICNM	Commodity name	Name of commodity produced at the site.

Listing of OSH.SICFMT.DATA.

OBS	SIC	SICNM
1	10110	IRON ORE
2	10210	COPPER ORE
3	10310	LEAD/ZINC ORES
4	10440	SILVER
5	10510	ALUMINUM ORE+
6	10612	COBALT
7	10614	MANGANESE
8	10615	MOLYBDENUM
9	10616	NICKEL
10	10940	URANIUM+
11	10942	VANADIUM
12	14530	CLAY GROUP
13	14720	BARITE
14	14750	PHOSPHATE ROCK
15	14920	GYPSUM
16	14991	ASBESTOS
17	14993	GILSONITE
18	14994	MICA
19	14998	VERMICULITE

Table 26. Data elements, file layout, and listing of OSH.SUBDFMT.DATA.

CHARACTER POSITIONS	MNEMONIC NAME	DATA ELEMENT	EXPLANATION/DESCRIPTION
1-3	SUBD	Subdistrict office	Code for MSHA subdistrict office which exercises jurisdiction over the mining operation (also referred to as INSP in MSHA documentation).
10-29	SUBDNM	Subdistrict name	Name of location for subdistrict office exercising jurisdiction over the mining operation.

Listing of OSH.SUBDFMT.DATA.

OBS	SUBD	SUBDNM
1	110	PITTSBURGH, PA
2	120	ALBANY, NY
3	210	BIRMINGHAM, AL
4	220	KNOXVILLE, TN
5	310	DULUTH, MN
6	320	VINCENNES, IN
7	410	DALLAS, TX
8	420	ROLLA, MO
9	510	DENVER, CO
10	520	SALT LAKE CITY, UT
11	610	BELLEVUE, WA
12	620	PHOENIX, AZ

Table 27. Contents of SAS data set INPUT1.LABELNEW.

TRACKS USED=56 SUBEXTENTS=1 OBSERVATIONS=2071 CREATED BY JOB RUKCNT AT 21:06 FRIDAY, OCTOBER 22, 1982 BY SAS RELEASE 79.8
 DSNAME=SYS82295.T210548.RD000.RUKCNT.RD000001 BLKSIZE=18700 LRECL=492 OBSERVATIONS PER TRACK=38 GENERATED BY DATA

LIST OF VARIABLES BY POSITION

#	VARIABLE	TYPE	LENGTH	POSITION
1	MID	NUM	8	4
2	COMP	NUM	8	12
3	SUBD	NUM	8	20
4	STCD	NUM	8	28
5	CTCD	NUM	8	36
6	SIC	NUM	8	44
7	SICX	NUM	8	52
8	STATUS	CHAR	1	60
9	STDT	CHAR	6	61
10	OWNEROP	CHAR	30	67
11	MNNAME	CHAR	30	97
12	STADD	CHAR	30	127
13	CITY	CHAR	13	157
14	STATE	CHAR	2	170
15	ZIP	NUM	8	172
16	UPDTC	NUM	8	180
17	NUMSUB	NUM	8	188
18	NUMAVM	NUM	8	196
19	AVM1	NUM	8	204
20	AVM2	NUM	8	212
21	AVM3	NUM	8	220
22	AVM4	NUM	8	228
23	AVM5	NUM	8	236
24	AVM6	NUM	8	244
25	AVM7	NUM	8	252
26	AVM8	NUM	8	260
27	AVM9	NUM	8	268
28	AVM10	NUM	8	276
29	SUB1NM	CHAR	18	284
30	SUB2NM	CHAR	18	302
31	SUB3NM	CHAR	14	320
32	SUB4NM	CHAR	12	334
33	SUB5NM	CHAR	23	346
34	SUB6NM	CHAR	17	369
35	SUB7NM	CHAR	20	386
36	SUB8NM	CHAR	25	406
37	SUB9NM	CHAR	19	431
38	SUB10NM	CHAR	7	450
39	SICNM	CHAR	15	457
40	SUBDHM	CHAR	20	472

ALPHABETIC LIST OF VARIABLES

#	VARIABLE	TYPE	LENGTH	POSITION
19	AVM1	NUM	8	204
20	AVM2	NUM	8	212
21	AVM3	NUM	8	220
22	AVM4	NUM	8	228
23	AVM5	NUM	8	236
24	AVM6	NUM	8	244
25	AVM7	NUM	8	252
26	AVM8	NUM	8	260
27	AVM9	NUM	8	268
28	AVM10	NUM	8	276
13	CITY	CHAR	13	157
2	COMP	NUM	8	12
5	CTCD	NUM	8	36
1	MID	NUM	8	4
11	MNNAME	CHAR	30	97
18	NUMAVM	NUM	8	196
17	NUMSUB	NUM	8	188
10	OWNEROP	CHAR	30	67
6	SIC	NUM	8	44
39	SICNM	CHAR	15	457
7	SICX	NUM	8	52
12	STADD	CHAR	30	127
14	STATE	CHAR	2	170
8	STATUS	CHAR	1	60
4	STCD	NUM	8	28
9	STDT	CHAR	6	61
3	SUBD	NUM	8	20
40	SUBDHM	CHAR	20	472
29	SUB1NM	CHAR	18	284
38	SUB10NM	CHAR	7	450
30	SUB2NM	CHAR	18	302
31	SUB3NM	CHAR	14	320
32	SUB4NM	CHAR	12	334
33	SUB5NM	CHAR	23	346
34	SUB6NM	CHAR	17	369
35	SUB7NM	CHAR	20	386
36	SUB8NM	CHAR	25	406
37	SUB9NM	CHAR	19	431
16	UPDTC	NUM	8	180
15	ZIP	NUM	8	172

Table 28. Summary of Tables 29-34.

	<u>PROGRAM NAME</u>	<u>FUNCTIONS</u>	<u>OUTPUT</u>
29a&b	OSPGM3	Selects three data elements from SELECT and stores them in XFRAME for use with TYPE2D.	OSH.RUKMNMSY.XFRAME on PV0024
30a&b	TYPE2S	Selects second ("B") round of self-representing units (SRUs) from SELECT and calculates the probability sample size.	Table titled "Occupational Hazard Survey of the Mining Industry Probability Sample Size Determination"
31a&b	TYPE2SF	(Same as TYPE2S except output builds D2ZFIL for use by TYPE2D.)	OSH.RUKMNMSY.D2ZFIL on USER03
32a&b	TYPE2D	Is written in FORTRAN and uses XFRAME and D2ZFIL to select the balance of the OHSMI sample by random probability.	OSH.RUKMNSY.D2FILEXX on USER05
33a&b	TYPE2M	Uses D2FILEXX, ASTRATA.DATA, and XSRU.DATA (combined contents represent all units selected for the OHSMI sample) to select data elements from LABELNEW for use by TYPE2W.	OSH.RUKMNMSY.D2TABLE on USER05 (SAS DATA SET "TABLE2")
34a&b	TYPE2W	Uses the data in D2TABLE to print a sample verification form for each unit in the sample.	Sample verification forms

Table 29a. Listing of OSH.OSPGM3.DATA.

```

OBS      RECL
1        //RUKOSP JOB (OSH,MNMSY),YU,CLASS=A,MSGCLASS=T,NOTIFY=$RUK
2        //STEP1 EXEC SAS
3        //FT11F001 DD SYSOUT=T,HOLD=YES
4        //FT12F001 DD SYSOUT=T,HOLD=YES
5        //INPUT DD DSN=OSH.RUKMNMSY.SELECT,DISP=(OLD,KEEP),UNIT=MSS
6        //OUTPUT DD DSN=OSH.RUKMNMSY.XFRAME,DISP=(OLD,KEEP),UNIT=MSS,
7        //  MSVGP=PUBLIC,LABEL=(,SL,RETPD=90),
8        //  DCB=(RECFM=FB,LRECL=30,BLKSIZE=3120)
9        //SYSIN DD *
10       DATA RAWDATA;
11       SET INPUT.SELECT;
12       KEEP SC SMID NUMAVM ;
13       PROC SORT;
14       BY SC SMID;
15       DATA A;
16       SET RAWDATA;
17       FILE OUTPUT;
18       PUT @1 SC 6. @7 SMID 7. @14 NUMAVM 10.2;

```

Table 29b. Data elements and file layout for OSH.RUKMNMSY.XFRAME.

CHARACTER POSITIONS	MNEMONIC NAME	DATA ELEMENT	EXPLANATION/DESCRIPTION
1-6	SC	Stratum code	Combination of the five-digit commodity code, SIC, and the single-digit GEO code to provide an intra-commodity stratification.
7-13	SMID	Mine or plant code	Serves the same purpose as MID (Mine Identification number) but places the data in a six-digit field for use by TYPE2D.
14-23	NUMAVM	Average minesite employment	Average annual non-office employment at the site.

Table 30a. Listing of OSH.TYPE2S.DATA.

```

OBS      REC1
1      //RUK02S JOB (OSH,MNMSY),YU,CLASS=A,NOTIFY=$RUK,MSGCLASS=T
2      //STEP1 EXEC SAS
3      //FT11F001 DD SYSOUT=T,HOLD=YES
4      //FT12F001 DD SYSOUT=T,HOLD=YES
5      //INPUT DD DSN=OSH.RUKMNMSY.SELECT,DISP=(OLD,KEEP),UNIT=MSS
6      //SYSIN DD *
7      * ;
8      * ;
9      * ;
10     * OSH.TYPE2S.DATA--SELECTS SECOND ROUND SRUS AND PRINTS CHART * ;
11     * ;
12     * ;
13     DATA RAWDATA;
14     SET INPUT.SELECT;
15     KEEP SC NUMAVM;
16     PROC SORT;
17     BY SC;
18     PROC SUMMARY;
19     CLASS SC;
20     VAR NUMAVM;
21     OUTPUT OUT=SIZE
22     SUM=MOS;
23     DATA A;
24     SET SIZE;
25     SAMPLE1=_FREQ_*0.15;
26     IF SAMPLE1 LT 3 THEN SAMPLE1=3;
27     IF SAMPLE1 GT _FREQ_ THEN SAMPLE1=_FREQ_;
28     SAMPLE4=ROUND(SAMPLE1);
29     XX=MOS/SAMPLE4;
30     MINE=_FREQ_;
31     KEEP SC MINE MOS SAMPLE4 XX;
32     DATA TEMP;
33     MERGE RAWDATA A;
34     BY SC;
35     FLAG=0;
36     IF NUMAVM GT XX THEN DO;
37     FLAG=1; NUMAVM=0; END;
38     PROC SUMMARY;
39     CLASS SC;
40     VAR NUMAVM FLAG;
41     OUTPUT OUT=B
42     SUM=TOTAL AUTO;
43     DATA C;
44     RETAIN TOTMINE 0 TOTMOS 0. TOTS4 0 TOTS5 0 TOTS6 0 TOTS7 0 LINEK 0;
45     MERGE A B END=EOF;
46     BY SC;
47     IF SC=. THEN DELETE;
48     REM=MINE-AUTO;
49     SAMPLE5=_FREQ_*0.15;
50     IF SAMPLE5 LT 3 THEN SAMPLE5=3;
51     IF SAMPLE5 GT REM THEN SAMPLE5=REM;
52     SAMPLE5=ROUND(SAMPLE5);
53     ZZ=0;
54     IF SAMPLE5 GT 0 THEN ZZ=TOTAL/SAMPLE5;
55     YY=UNIFORM(24689);
56     FILE PRINT NOPRINT NOTITLE;

```

Table 30a. Listing of OSH.TYPE2S.DATA (continued).

```

OBS      REC1
57      IF LINEK=0 THEN GO TO H;
58      G: PUT @6 SC 6. @13 MINE 5. @22 MOS 9.2 @35 XX 10.2 @49 SAMPLE4 4.
59      @61 AUTO 2. @74 REM 6. @86 SAMPLE5 3. @92 ZZ 7.2 @102 YY 10.8;
60      LINEK+1;
61      IF LINEK=50 THEN LINEK=0;
62      TOTMINE+MINE;
63      TOTMOS+MOS;
64      TOTS4+SAMPLE4;
65      TOTS5+AUTO;
66      TOTS6+REM;
67      TOTS7+SAMPLE5;
68      IF EOF THEN PUT @6 106*'- ' / @6 'TOTAL' @13 TOTMINE 5. @22 TOTMOS 9.2
69      @49 TOTS4 4. @61 TOTS5 3. @73 TOTS6 5. @86 TOTS7 3.;
70      RETURN;
71      H: PUT @1 '1' // @35 'OCCUPATIONAL HAZARD SURVEY OF THE MINING INDUSTRY'
72      / @40 'PROBABILITY SAMPLE SIZE DETERMINATION'
73      // @6 'STRATUM' @15 '# OF' @24 'TOTAL #' @36 'SRU2 TEST'
74      @48 'SAMPLE' @56 '# OF 2ND ROUND' @72 '# OF SITES' @84 'SAMPLE'
75      @93 'SAMPLE' @104 'RANDOM' / @7 'CODE' @14 'SITES'
76      @21 'OF EMPLOYEES' @36 'INTERVAL' @49 'SIZE1'
77      @56 'SRU SELECTION' @73 'REMAINING' @85 'SIZE2' @92 'INTERVAL'
78      @104 'NUMBER' / @6 106*'- ';
79      GO TO G;

```

Table 30b. Occupational Hazard Survey of the Mining Industry Probability Sample Size Determination.

STRATUM CODE	# OF SITES	TOTAL # OF EMPLOYEES	SRU2 TEST INTERVAL	SAMPLE SIZE1	# OF 2ND ROUND SRU SELECTION	# OF SITES REMAINING	SAMPLE SIZE2	SAMPLE INTERVAL	RANDOM NUMBER
101100	8	59.92	19.97	3	0	8	3	19.97	0.06226071
101102	30	11353.16	2270.63	5	0	30	5	2270.63	0.39664213
102101	39	12197.08	2032.85	6	0	39	6	2032.85	0.10502889
102104	14	5799.33	1933.11	3	1	13	3	1181.69	0.98918627
103100	15	1268.75	422.92	3	0	15	3	422.92	0.47333356
103103	7	665.00	221.67	3	0	7	3	221.67	0.53644995
103104	12	545.41	181.80	3	0	12	3	181.80	0.85263219
104408	59	1123.17	124.80	9	2	57	9	90.19	0.65627848
105100	8	4457.50	1485.83	3	0	8	3	1485.83	0.12910041
109408	208	11340.35	365.82	31	3	205	31	324.21	0.79055624
145300	118	1416.67	78.70	18	3	115	18	63.66	0.87868479
145301	79	4324.75	360.40	12	0	79	12	360.40	0.05530254
145302	60	377.00	41.89	9	0	60	9	41.89	0.46976362
145303	23	440.75	146.92	3	0	23	3	146.92	0.31711927
145304	28	334.42	83.60	4	0	28	4	83.60	0.82358818
145305	43	289.92	48.32	6	0	43	6	48.32	0.04655507
145306	25	939.25	234.81	4	0	25	4	234.81	0.45097887
147200	55	1198.16	149.77	8	0	55	8	149.77	0.60188438
147201	33	579.00	115.80	5	0	33	5	115.80	0.87078220
147501	29	4338.16	1084.54	4	0	29	4	1084.54	0.23643173
147504	10	78.08	26.03	3	0	10	3	26.03	0.70801533
149208	64	973.99	97.40	10	0	64	10	97.40	0.61370838
149940	15	102.25	34.08	3	0	15	3	34.08	0.59669812
TOTAL	982	64202.07		158	9	973	158		

Table 31a. Listing of OSH.TYPE2SF.DATA.

```

OBS      REC1
1      //RUK2SF JOB (OSH,MNMSY),YU,CLASS=A,NOTIFY=$RUK,MSGCLASS=T
2      //STEP1 EXEC SAS
3      //FT11F001 DD SYSOUT=T,HOLD=YES
4      //FT12F001 DD SYSOUT=T,HOLD=YES
5      //INPUT DD DSN=OSH.RUKMNMSY.SELECT,DISP=(OLD,KEEP),UNIT=MSS
6      //OUTPUT DD DSN=OSH.RUKMNMSY.D2ZFIL,DISP=(OLD,KEEP),UNIT=USER,
7      // SPACE=(TRK,(1,1),RLSE),DCB=(RECFM=FB,LRECL=41,BLKSIZE=6150)
8      //SYSIN DD *
9      * ;
10     * OSH.TYPE2SF.DATA--SELECTS SECOND ROUND SRU * ;
11     *                               AND DETERMINES PROBABILITY SAMPLE SIZE * ;
12     * ;
13     DATA RAWDATA;
14     SET INPUT.SELECT;
15     KEEP SC NUMAVM;
16     PROC SORT;
17     BY SC;
18     PROC SUMMARY;
19     CLASS SC;
20     VAR NUMAVM;
21     OUTPUT OUT=SIZE
22     SUM=MOS;
23     DATA A;
24     SET SIZE;
25     SAMPLE1= FREQ_*0.15;
26     IF SAMPLE1 LT 3 THEN SAMPLE1=3;
27     IF SAMPLE1 GT FREQ_ THEN SAMPLE1=_FREQ_;
28     SAMPLE4=ROUND(SAMPLE1);
29     XX=MOS/SAMPLE4;
30     MINE= FREQ_;
31     KEEP SC MINE MOS SAMPLE4 XX;
32     DATA TEMP;
33     MERGE RAWDATA A;
34     BY SC;
35     FLAG=0;
36     IF NUMAVM GT XX THEN DO;
37     FLAG=1; NUMAVM=0; END;
38     PROC SUMMARY;
39     CLASS SC;
40     VAR NUMAVM FLAG;
41     OUTPUT OUT=B
42     SUM=TOTAL AUTO;
43     DATA C;
44     * ;
45     MERGE A B;
46     BY SC;
47     IF SC=. THEN DELETE;
48     REM=MINE-AUTO;
49     SAMPLE5= FREQ_*0.15;
50     IF SAMPLE5 LT 3 THEN SAMPLE5=3;
51     IF SAMPLE5 GT REM THEN SAMPLE5=REM;
52     SAMPLE5=ROUND(SAMPLE5);
53     ZZ=0;
54     IF SAMPLE5 GT 0 THEN ZZ=TOTAL/SAMPLE5;
55     YY=UNIFORM(24689);
56     FILE OUTPUT;
57     PUT @1 SC 6. @7 MINE 5. @12 XX 10.2 @22 SAMPLE5 3.
58     @25 ZZ 7.2 @32 YY 10.8;

```

Table 31b. Data elements and file layout for OSH.RUKMNMSY.D2ZFIL.

CHARACTER POSITIONS	MNEMONIC NAME	DATA ELEMENT	EXPLANATION/DESCRIPTION
1-6	SC	Stratum code	A combination of the five-digit commodity code, SIC, and the single-digit GEO code to provide an intra-commodity stratification.
7-11	MINE	Mine frequency	Number of mines within stratum.
12-21	XX	Employment	Annual average non-office employment (same as NUMAVM).
22-24	SAMPLE5	Total units in sample	Number of units to be selected for sample.
25-31	ZZ	Sampling interval	The total number of employees in the stratum divided by the number of units to be selected for the sample.
32-41	YY	Uniform random number	Uniform random number.

Table 32a. Listing of OSH.TYPE2D.DATA.

```

//RUK02D JOB (OSH,MNMSY),YU,CLASS=E
//*PASS $$$
//STEP1 EXEC FORTGCLG
//SYSIN DD *
    DIMENSION NC(170)
    JY=0
    5 READ(8,10,END=99)NSC,NF,XM,NS,XK,XR
    10 FORMAT(I6,I5,F10.2,I3,F7.2,F10.8)
    NR=XR*XK*100
    NC(1)=NR
    DO 20 I=1,NS
    J=I+1
    20 NC(J)=NR+XK*I*100
    NCUM=0
    JK=1
    DO 70 I=1,NF
    READ(9,30,END=99)NS1,NM,EMP
    30 FORMAT(I6,I7,F10.2)
    KX=0
    IF(NS1.NE.NSC)GO TO 50
    IF(EMP.GT.XM)GO TO 62
    NCUM=NCUM+EMP*100
    35 IF(NCUM.LT.NC(JK))GO TO 60
    JK=JK+1
    KX=KX+1
    GO TO 35
    50 WRITE(6,55)
    55 FORMAT(/,'***ERROR ON STRATUM CODE***')
    JY=1
    60 IF(JY.EQ.1)I=NF
    IF(KX.NE.0)WRITE(10,40)NS1,NM,EMP,KX
    40 FORMAT(2I7,F10.2,I3)
    GO TO 70
    62 WRITE(10,65)NS1,NM,EMP
    65 FORMAT(2I7,F10.2,' B')
    70 CONTINUE
    IF(JY.EQ.1)GO TO 99
    GO TO 5
    99 STOP
    END
//GO.FT03F001 DD DSN=OSH.RUKMNMSY.D2ZFIL,DISP=(OLD,KEEP),UNIT=USER
//GO.FT09F001 DD DSN=OSH.RUKMNMSY.XFRAME,DISP=(OLD,KEEP),UNIT=MSS
//GO.FT10F001 DD DSN=OSH.RUKMNMSY.D2FILEXX,DISP=(OLD,KEEP),
// SPACE=(TRK,(5,1),RLSE),DCB=(RECFM=FB,LRECL=34,BLKSIZE=3400),
// UNIT=USER

```

```

00000010
00000015
00000020
00000030
00000040
00000050
00000060
00000070
00000080
00000090
00000100
00000110
00000120
00000130
00000140
00000150
00000160
00000170
00000175
00000180
00000185
00000190
00000200
00000230
00000240
00000250
00000260
00000270
00000280
00000290
00000295
00000296
00000297
00000298
00000299
00000300
00000310
00000320
00000330
00000340
00000360
00000370
00000380
00000390
00000400

```

Table 32b. Data elements and file layout for OSH.RUKMNMSY.D2FILEXX.

CHARACTER POSITIONS	MNEMONIC NAME	DATA ELEMENT	EXPLANATION/DESCRIPTION
1-6	NS1	Stratum code	A combination of the five-digit commodity code, SIC, and the single-digit GEO code. (Same as "SC".)
7-11	NM	Number of mines	Number of mines within stratum (same as MINE).
12-21	EMP	Employment	Average annual non-office employment at the site (same as NUMAVM).
22	WT	Selection status	A code to indicate how each unit was selected for the sample. "A" = first-round manual selection as SRU "B" = second-round selection as SRU "O" = selection as SRU because fewer than 7 mines available in strata for probability sampling number = number of times selected by random probability sampling procedure.

Table 33a. Listing of OSH.TYPE2M.DATA.

```

//RUK02M JOB (OSH,MNMSY),YU,CLASS=C,NOTIFY=$RUK,MSGCLASS=T
/*PASS $$$
/*ROUTE XEQ MSS
//STEP1 EXEC SAS, SORT=15
//FT11F001 DD SYSOUT=A
//FT12F001 DD SYSOUT=A
//INPUT1 DD DSN=OSH.RUKMNMSY.LABELNEW, DISP=SHR, UNIT=MSS
//INPUT2 DD DSN=OSH.RUKMNMSY.D2FILEXX, DISP=SHR, UNIT=USER
//INPUT3 DD DSN=$RUK.OSH.ASTRATA.DATA, DISP=SHR
//INPUT4 DD DSN=$RUK.OSH.XSRU.DATA, DISP=SHR
//INPUT5 DD DSN=PCC.FIPS.PUB55.PLACES80, DISP=SHR, UNIT=MSS
//OUTPUT DD DSN=OSH.RUKMNMSY.D2TABLE, DISP=(OLD,KEEP),
// UNIT=USER, SPACE=(TRK,(5,2),RLSE)
//SYSIN DD *
DATA A;
  SET INPUT1.LABELNEW;
  RETAIN SMID 0;
  IF MID EQ SMID THEN DELETE;
  SMID=MID;
  MGCODE=CTCD+(1000*STCD);
DATA B;
  INFILE INPUT2 ;
  INPUT @1 SC 7. @8 MID 7. @15 NUMAVM 10.2
  @25 WT $3.;
  PROC SORT;
  BY MID;
DATA C;
  INFILE INPUT3;
  INPUT @1 MID 7. @8 SC 6.
  @14 WT $3. @19 NUMAVM 10.2;
  PROC SORT;
  BY MID;
DATA D;
  SET B C;
  PROC SORT;
  BY MID;
DATA E;
  INFILE INPUT4;
  INPUT @1 MID 7. @8 SC 6.
  @14 WT $3. @19 NUMAVM 10.2;
  PROC SORT; BY MID;
DATA F;
  SET D E ;
  PROC SORT; BY MID;
- DATA G;
  MERGE A(IN=INE)
  F(IN=INC);
  BY MID;
  IF INC=1;
  IF WT EQ '0' THEN DELETE;
  PROC SORT;
  BY MGCODE;
= DATA FIP51;
  INFILE INPUT5;
  INPUT @1 STCD 2. @3 FIP5STAB $2.
  @108 NPC 2. @110 HUPC 1.
  @111 CTCD 3. @111 CTCD1 3.

```

```

00000010
00000015
00000020
00000030
00000040
00000050
00000060
00000070
00000080
00000090
00000100
00000110
00000120
00000130
00000140
00000150
00000160
00000170
00000180
00000185
00000190
00000200
00000210
00000220
00000230
00000240
00000250
00000260
00000270
00000280
00000290
00000300
00000310
00000320
00000330
00000340
00000350
00000360
00000370
00000380
00000390
00000400
00000410
00000420
00000430
00000440
00000450
00000460
00000470
00000480
00000490
00000500
00000510
00000520
00000530
00000540
00000550

```

Table 33a. Listing of OSH.TYPE2M.DATA (continued).

2114 FIPSCNTM \$30. 2114 CTNAME \$ 30.;	00000560
IF ((STCD NE 2) AND (STCD NE 3) AND	00000570
(STCD NE 7) AND (STCD NE 9) AND	00000580
(STCD NE 10) AND (STCD NE 11) AND	00000590
(STCD NE 14) AND (STCD NE 15) AND	00000600
(STCD NE 23) AND (STCD NE 25) AND	00000610
(STCD NE 31) AND (STCD NE 33) AND	00000620
(STCD NE 34) AND (STCD NE 38) AND	00000630
(STCD NE 43) AND (STCD NE 44) AND	00000640
(STCD NE 52) AND (STCD NE 55));	00000650
MGCODE=CTCD+(1000*STCD);	00000655
PROC SORT;	00000660
BY MGCODE;	00000670
DATA FIX;	00000671
SET FIPSI;	00000672
BY MGCODE;	00000673
IF LAST.MGCODE;	00000674
PROC SORT;	00000675
BY MGCODE;	00000676
DATA FIX2;	00000680
MERGE G(IN=IN1)	00000690
FIX(IN=IN2)	00000700
END=EOF;	00000710
BY MGCODE;	00000720
IF IN1 ;	00000730
DATA OUTPUT.TABLE2;	00000731
SET FIX2;	00000732
IF ((STCD=49) AND (CTCD=998)) THEN DO;	00000733
FIPSSTAB='UT';	00000734
FIPSCNTM='COUNTY UNKNOWN';	00000735
END;	00000736
IF ((STCD=56) AND (CTCD=998)) THEN DO;	00000737
FIPSSTAB='WY';	00000738
FIPSCNTM='COUNTY UNKNOWN';	00000739
END;	00000740
PROC SORT;	00000745
BY SC;	00000750
PROC PRINT N;	00000760
TITLE 'LISTING OF D2TABLE';	00000770

Table 33b. Contents of SAS data set INPUT1.TABLE2.

TRACKS USED=13 SUBEXTENTS=1 OBSERVATIONS=349 CREATED BY JOB RUKCNT AT 21:06 FRIDAY, OCTOBER 22, 1982

BY SAS RELEASE 79.6

DSNAME=SYS82295.T210548.RD000.RUKCNT.R0000001 BLKSIZE=18634 LRECL=621 OBSERVATIONS PER TRACK=30 GENERATED BY DATA

LIST OF VARIABLES BY POSITION

#	VARIABLE	TYPE	LENGTH	POSITION
1	MID	NUM	8	4
2	COMP	NUM	8	12
3	SUBD	NUM	8	20
4	STCD	NUM	8	28
5	CTCD	NUM	8	36
6	SIC	NUM	8	44
7	SICX	NUM	8	52
8	STATUS	CHAR	1	60
9	STDT	CHAR	6	61
10	OWNEROP	CHAR	30	67
11	NNNAME	CHAR	30	97
12	SIADD	CHAR	30	127
13	CITY	CHAR	13	157
14	STATE	CHAR	2	170
15	ZIP	NUM	8	172
16	UPDTC	NUM	8	180
17	NUMSUB	NUM	8	188
18	NUMAVM	NUM	8	196
19	AVM1	NUM	8	204
20	AVM2	NUM	8	212
21	AVM3	NUM	8	220
22	AVM4	NUM	8	228
23	AVM5	NUM	8	236
24	AVM6	NUM	8	244
25	AVM7	NUM	8	252
26	AVM8	NUM	8	260
27	AVM9	NUM	8	268
28	AVM10	NUM	8	276
29	SUB1NM	CHAR	18	284
30	SUB2NM	CHAR	18	302
31	SUB3NM	CHAR	14	320
32	SUB4NM	CHAR	12	334
33	SUB5NM	CHAR	23	346
34	SUB6NM	CHAR	17	369
35	SUB7NM	CHAR	20	386
36	SUB8NM	CHAR	25	406
37	SUB9NM	CHAR	19	431
38	SUB10NM	CHAR	7	450
39	SICNM	CHAR	15	457
40	SUBDNM	CHAR	20	472
41	SMID	NUM	8	492
42	MGCODE	NUM	8	500
43	SC	NUM	8	508
44	WT	CHAR	3	516
45	FIPSSTAB	CHAR	2	519
46	NPC	NUM	8	521
47	NUPC	NUM	8	529
48	CTCD1	NUM	8	537
49	FIPSC1NM	CHAR	30	545
50	CT1NAME	CHAR	30	575
51	STNAME	CHAR	2	605
52	CTNAME	CHAR	14	607

ALPHABETIC LIST OF VARIABLES

#	VARIABLE	TYPE	LENGTH	POSITION
19	AVM1	NUM	8	204
20	AVM2	NUM	8	212
21	AVM3	NUM	8	220
22	AVM4	NUM	8	228
23	AVM5	NUM	8	236
24	AVM6	NUM	8	244
25	AVM7	NUM	8	252
26	AVM8	NUM	8	260
27	AVM9	NUM	8	268
28	AVM10	NUM	8	276
13	CITY	CHAR	13	157
2	COMP	NUM	8	12
5	CTCD	NUM	8	36
48	CTCD1	NUM	8	537
52	CTNAME	CHAR	14	607
50	CT1NAME	CHAR	30	575
49	FIPSC1NM	CHAR	30	545
45	FIPSSTAB	CHAR	2	519
42	MGCODE	NUM	8	500
1	MID	NUM	8	4
11	NNNAME	CHAR	30	97
46	NPC	NUM	8	521
18	NUMAVM	NUM	8	196
17	NUMSUB	NUM	8	188
47	NUPC	NUM	8	529
10	OWNEROP	CHAR	30	67
43	SC	NUM	8	508
6	SIC	NUM	8	44
39	SICNM	CHAR	15	457
7	SICX	NUM	8	52
41	SMID	NUM	8	492
12	SIADD	CHAR	30	127
14	STATE	CHAR	2	170
8	STATUS	CHAR	1	60
4	STCD	NUM	8	28
9	STDT	CHAR	6	61
51	STNAME	CHAR	2	605
3	SUBD	NUM	8	20
40	SUBDNM	CHAR	20	472
29	SUB1NM	CHAR	18	284
38	SUB10NM	CHAR	7	450
30	SUB2NM	CHAR	18	302
31	SUB3NM	CHAR	14	320
32	SUB4NM	CHAR	12	334
33	SUB5NM	CHAR	23	346
34	SUB6NM	CHAR	17	369
35	SUB7NM	CHAR	20	386
36	SUB8NM	CHAR	25	406
37	SUB9NM	CHAR	19	431
16	UPDTC	NUM	8	180
44	WT	CHAR	3	516
15	ZIP	NUM	8	172

Table 34a. Listing of OSH.TYPE2W.DATA.

```

//RUK02W JOB (OSH,NMMSY),YU,CLASS=E,NOTIFY=$RUK,MSGCLASS=T
//XPASS $$$
//STEP1 EXEC SAS
//FT11F001 DD SYSOUT=A
//FT12F001 DD SYSOUT=A
//INPUT2 DD DSN=OSH.RUKMNMSY.D2TABLE,DISP=SHR,UNIT=USER
//SYSIN DD *
DATA _NULL_;
  SET INPUT2.TABLE2;
  RETAIN LINEX 0;
  FILE PRINT NOPRINT NOTITLE;
  IF LINEX=0 THEN GO TO H;
G: PUT // @5'MINE ID:' @14 MID 7. @51 'SIC CODE:' @61 SIC 5. +2 SICNM
    @96 'SELECTION STATUS:' @114 WT $3. //
    @5 'COMPANY NAME AND ADDRESS:' @32 OWNEROP $CHAR30.
    +2 STADD $CHAR30.
    +2 CITY $CHAR13. +2 STATE $2. +2 ZIP 5. //
    @5 'MINE NAME AND ADDRESS:' @29 MNNAME $CHAR30. //
    @5 'MINE TELEPHONE NUMBER:' //
    @5 'HEALTH AND SAFETY CONTACT:' //
    @5 'MINE LOCATION (COUNTY, STATE):' @36 FIPSCNTNM ',' +2 FIPSSTAB
    /// @23 53*'--' /
    @5 'MINE EMPLOYMENT:'
      @29 'SUBUNIT TYPE' @60 'NO. OF EMPLOYEES' / @23 53*'--' /
    @23 SUB1NM $CHAR30. @63 AV1 8.2 /
    @23 SUB2NM $CHAR30. @63 AV2 8.2 /
    @23 SUB3NM $CHAR30. @63 AV3 8.2 /
    @23 SUB4NM $CHAR30. @63 AV4 8.2 /
    @23 SUB5NM $CHAR30. @63 AV5 8.2 /
    @23 SUB6NM $CHAR30. @63 AV6 8.2 /
    @23 SUB7NM $CHAR30. @63 AV7 8.2 /
    @23 SUB8NM $CHAR30. @63 AV8 8.2 /
    @23 SUB9NM $CHAR30. @63 AV9 8.2 / @23 53*'--' /
    @25 'TOTAL MINE EMPLOYMENT' @61 NUMAVM 10.2 / @23 53*'--' / /
    @5 'OTHER MSHA OPERATIONS ON THE SAME PROPERTY (LIST BY MINE ID):'
    // @5 'MSHA SUBDISTRICT OFFICE:' @31 SUBD 4. +2 SUBDNM $CHAR30.
    +2 'MSHA OFFICE TELEPHONE NUMBER:' //
    @5 'LABOR UNIONS:' //
    @5 'UNION CONTACT NAME:' //
    @5 'UNION CONTACT ADDRESS:' //
    @5 'UNION CONTACT TELEPHONE NUMBER:' // //;
RETURN;
H: PUT @1 '1';
PUT / @39 'OCCUPATIONAL HAZARD SURVEY OF THE MINING INDUSTRY'
  / @51 'SAMPLE DRAW OCTOBER 30, 1982';
GO TO G;

```

Table 34b. Occupational Hazard Survey of the Mining Industry, sample draw October 30, 1982

SAMPLE COPY

MINE ID: 100507

SIC CODE: 10110 IRON ORE

SELECTION STATUS: 1

COMPANY NAME AND ADDRESS: SHOOK & FLETCHER SUPPLY CO ROUTE 3

RUSSELLVILLE AL 35653

MINE NAME AND ADDRESS: BLACKBURN MN & MLL

MINE TELEPHONE NUMBER:

HEALTH AND SAFETY CONTACT:

MINE LOCATION (COUNTY, STATE): FRANKLIN , AL

MINE EMPLOYMENT:

SUBUNIT TYPE	NO. OF EMPLOYEES
UNDERGROUND MINING	0.00
SURFACE FACILITIES	0.00
SURFACE MINING	0.00
AUGER MINING	0.00
CULM BANK & REFUSE PILE	0.00
DREDGE OPERATIONS	0.00
OTHER SURFACE MINING	0.00
INDEPENDENT SHOPS & YARDS	0.00
MILL OR PREP. PLANT	8.00
TOTAL MINE EMPLOYMENT	8.00

OTHER MSHA OPERATIONS ON THE SAME PROPERTY (LIST BY MINE ID):

MSHA SUBDISTRICT OFFICE: 210 BIRMINGHAM, AL

MSHA OFFICE TELEPHONE NUMBER:

LABOR UNIONS:

UNION CONTACT NAME:

UNION CONTACT ADDRESS:

UNION CONTACT TELEPHONE NUMBER:

