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AN ANNOTATED BIBLIOGRAPHY
OF METAL AND NONMETAL MINE FIRE REPORTS

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By:

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The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies or recommendations of the Interior Department's Bureau of Mines or of the United States Government.

1.0 INTRODUCTION

This document is Volume II of a two-volume report on underground and surface metal and nonmetal mine fires occurring between 1950 and 1979. Two surface fires from 1980 are included. Volume I discusses the methods of data acquisition, data analysis procedures, and results and conclusions. This volume contains (1) a master list of all fire incidents obtained from MSHA reports, (2) an annotated bibliography of all MSHA reports, journal articles on selected incidents, and non-reportable fires (appendix), and (3) indexes to be used in accessing incidents in the master list and annotated bibliography. These three types of information provide the reader with a complete summary of metal and nonmetal mine fires during the period from 1950 through 1979 and a convenient means to locate incidents of specific interest.

The body of this volume is organized around two tables and a series of indexes. The two tables are master lists of underground and surface fire incidents. They are followed by 15 indexes keyed to the master list and annotated bibliography. The Appendix contains three different parts:

- The annotated bibliography of MSHA fire reports (one section each for underground and surface mine fires).
- The annotated bibliography of journal and other periodical articles about selected fires from the MSHA bibliography.
- A listing of non-reportable fires (one section each for underground and surface mine fires).

Descriptions of the contents and use of each of the three major components of this volume (i.e., master list, indexes, and appendix) are presented in Section 2.0.

2.0 INSTRUCTIONS FOR USE

2.1 Master Lists

Tables II-1a and II-1b list, in chronological order, all underground and surface metal and nonmetal mine fires (1950 - 1979) for which MSHA fire reports were completed. The entries for each fire include the data, name of mine, location, description of the fire, and the number of people killed or injured. In addition, each fire has an incident number which is used in the cross-referencing indexes and which corresponds to the number on the fire incident report forms in the Appendix.

2.2 Appendix

2.2.1 Fire Incident Report Forms

Part I of the Appendix is the annotated bibliography of all MSHA fire reports. It consists of a fire incident description form for each underground fire listed in Table II-1a and each surface fire listed in Table II-1b. Underground mine fires are first, followed by surface mine fires. Within each category, the forms are sequenced by incident number. The information in the fire incident reports was abstracted from all known MSHA fire reports. An attempt was made to extract as much useful data as possible from each report and to provide the reader with a means of obtaining further information if required. Sources of further information are included as available

in each incident report and are as follows: (1) reference information on the location of the original report, (2) the name of the inspector who wrote the report, and (3) names of mine personnel involved in the incident and/or subsequent investigation. Each fire incident report form contains the following information:

- Mine Name
- Report Title
- Description of Fire Incident
- Report Author
- Location of Report
- Date of Fire
- Time of Day Fire was Discovered
- Fire Duration
- Number of Deaths
- Number of Injuries
- Mining Method
- Depth of Ore Body
- Ore(s) Won
- Mine Size in Tons Per Day and Number of Employees
- Stench Warning Use (where applicable)
- Mine Location
- Mine Owner or Operator
- Personnel Involved in the Fire or Investigation
- Cause of Fire
- Detection of Fire
- Extinguishing Efforts
- Fire Prevention Techniques Employed or Not Employed
- Rescue and Recovery Attempts
- Ventilation Effects
- Ignition Source
- Fuel
- Extinguishing Agents Applied and Effectiveness
- Equipment Involved
- Equipment Lost
- Production Lost

Definitions of these terms appear at the beginning of the Appendix.

2.2.2 Journal Article Report Forms

Part II of the Appendix consists of journal article report forms. These forms contain abstracts of article information categorized in the same manner as the fire incident report forms. They provide supplemental information to that contained in the fire incident report forms for selected fires. The journal article report forms are keyed to the fire incident report forms in Index II-14 which will be described in the next section.

2.2.3 Non-Reportable Fires

Mine health and safety law requires that fires involving an injury or lasting more than $\frac{1}{2}$ -hour must be reported to MSHA officials. Most mine fires are extinguished without injury in less than $\frac{1}{2}$ -hour and are non-reportable. Consequently, no report exists on these fires for inclusion in this bibliography. In an effort to gather data representative of all mine fires, a number of mine safety directors were interviewed concerning the causes of

non-reportable fires. Incident descriptions developed from these interviews appear in the Non-Reportable Fire Incident Descriptions for both underground and surface fires. These descriptions are located in Part III of the Appendix.

2.3 Indexes

There are fifteen indexes to assist the reader in locating fire incident reports of interest. These indexes are:

- Alphabetical Index of Fire Names (Index II-1).
- List of Fire Incident Numbers by Year of Occurrence (Index II-2).
- Fires by Ignition Source and Year (Index II-3).
- Fires by Burning Substance and Year (Index II-4).
- Fires by Location and Year (Index II-5).
- Fires by Duration and Year (Index II-6).
- Fires by Number of Injuries and Year (Index II-7).
- Fires by Number of Deaths and Year (Index II-8).
- Fires by Detection and Year (Index II-9).
- Fires by Equipment Involved and Year (Index II-10).
- Fires by State and Year (Index II-11).
- Fires by Ore Won and Year (Index II-12).
- Fires by Successful Extinguishing Agent and Year (Index II-13).
- Fire Incident Number by Journal Article Number (Index II-14).
- Non-Reportable Fires Item Tabulations (Index II-15).

Each index consists of Section A, concerning underground fires, and Section B, concerning surface fires. Indexes II-3, II-6, II-7, and II-8 have cross tabulations (Section C) to delineate more pertinent fire report data. Since the incidents listed in Tables II-1a and II-1b and the incident report forms in Part I of the Appendix have corresponding numbers, the indexes provide quick-reference capabilities to both. A description of how to use each of these indexes follows.

Index II-1a is an alphabetical list of underground fires by mine name. For example, to find the Copper Canyon Mine Fire, the reader will look under "C" and find that data on this fire appears in Fire Incident Report Form Number U1 in the Appendix. Index II-1b contains surface mine fires by mine name.

Index II-2 is a list of fire incident numbers by year. By looking under 1970, one would find that 1970 underground fires are recorded in Fire Incident Forms U66 through U69.

Index II-3a is a list of underground mine fires by ignition source. For example, readers interested in electrically induced fires during the period 1970-1972 will look under Electrical -- 1970-72 in Index II-3a and find that Fire Incident U66, for example, fits these criteria. The same procedure applies using Index II-3b to locate surface mine fires with various ignition sources.

Index II-3c contains cross tabulations which further delineate ignition sources and equipment, location, etc. Readers interested in load-haul-dump electrical fires during the 1950-67 period will look under Electrical Fires by Equipment 1950-67 -- Load-Haul-Dump and find that Fire Incident U32 fits these criteria.

Index II-4a lists underground fire incidents by the substance burning. For example, to find underground timber fires in the 1950-52 period, the reader will look under Timber 1950-52 and find Fire Incident Numbers U1 through U7 and U9. The same procedure applies for surface mines in Index II-4b.

Index II-5a lists fire incident numbers by location in the mine and year. For example, readers looking for substation fires during 1973-75 will look under Substation -- 1973-75 and find Fire Incident Number U114. Surface mine location data appears in Index II-5b.

Index II-6a contains fire incident numbers by duration and year. For example, to find major fires (24 hours +) during the 1962-64 period, the reader will look under 24 hours + -- 1962-64 and find Fire Incident Number U50. Index II-6b contains fire duration incident numbers for surface mines. Index II-6c contains cross tabulations between underground fire duration and ignition source.

Index II-7a lists underground fire incident numbers by number of injuries and year. For example, by looking under 1 injury -- 1950-52, we find that there was one fire with one injury during this period (Incident U1). The same information on surface fires appears in Index II-7b.

Index II-7c contains cross tabulations of injury fires by ignition source and year, equipment and year, and location and year.

Index II-7d lists fire incidents where a stench warning system was used by number of injuries for the period 1960-1979.

Index II-8a lists underground fire incident numbers by number of deaths and year. Index II-8b lists the same data for surface fires. Index II-8c contains cross tabulations of fatal fires (one or more fatalities) by ignition source and year, equipment and year, and location and year. Index II-8d is structured identically to Index II-7d.

Index II-9a contains underground fires by method of detection and year. For example, to find fires detected by the hoistman during the period 1962-64, we look under Hoistman -- 1962-64 and find Fire Incident Number U50. Index II-9b contains surface fires by method of detection.

Index II-10a lists underground fire incident numbers by equipment involved and year. For example, readers interested in pump fires during the period 1968-69 will refer to Pump -- 1968-69 and find Fire Incident Number U64. Index II-10b lists surface fires by state and year.

Index II-11a lists underground fire incident numbers by state and year. For example, readers interested in Alabama underground fires during the 1976-77 period will look under Alabama -- 1976-77 and find Fire Incident Number U147. Index II-11b lists surface fires by state and year.

Index II-12a contains underground fire incident numbers by ores won and year. For example, to find underground copper mine fires during the period 1965-67, the reader may look to Copper -- 1965-67 and find Fire Incident Number U61. Index II-12b lists surface fires by ores won.

Index II-13a contains underground fire incident numbers by successful extinguishing agent and year. For example, to find underground fires extinguished with high expansion foam during the period 1962-64, the reader will refer to Foam -- 1962-64 and find that Fire Incidents U53 and U54 fit these criteria. Index II-13b lists surface fires by successful extinguishing agent.

Index II-14 lists fire incident numbers by journal articles about those fires. For example, there are three journal articles about Fire Incident U49, journal articles 2, 2b, and 2c.

Index II-15a lists non-reportable underground fires by ignition source, burning substance, location, equipment involved, and successful extinguishing agent. Index II-15b contains the same information for surface fires.

The above indexes are intended to assist the reader in locating fires of particular interest without searching through the entire set of fire incident reports. Some of the more important categories, such as injury fires, have been cross tabulated to further assist the reader in locating desired information. To prevent the tables from becoming too cumbersome, time periods for cross tabulation tables were expanded to fall under "Pre-1967 Metal and Nonmetal Mine Safety Law (1950-67)," "Post-1967 Metal and Nonmetal Mine Safety Law (1968-77)," and "1977 Mine Health and Safety Act (1978-79)."

Readers interested in mine fire incident reports not delineated in the above fifteen indexes should read the fire summaries in Tables II-1a and II-1b.

3.0 MASTER LISTS OF MINE FIRES

This section consists of the master lists of underground and surface metal and nonmetal mine fires discussed in Section 2.1 of this report. Section 3.1 contains a brief introduction, followed by Table II-1a which is the listing of underground mine fires. Section 3.2 contains the same information for surface mine fires (Table II-1b).

3.1 Underground Mine Fires

Table II-1a contains a list of underground mine fires listed in chronological order. Included are all underground metal and nonmetal mine fires during the period 1950 - 1979 for which an accident report has been located. Each fire has been assigned an incident number to relate information in this table to the underground fire incident report forms in the Appendix and various indexes.

For each fire, the table contains an incident number, date of fire, mine name and operator, mine location, description of the fire, and number killed or injured.

The page-edge index system on the following page is used to assist the reader in locating desired fire incident numbers quickly. To locate a desired section of the table, curl the report edge down to uncover the page edge mark in line with the desired fire incident number.

Table II-1a.	20	—
Metal and Nonmetal	40	—
Underground Mine Fires	60	—
1950 - 1979	80	—
	100	—
	120	—
	140	—
	160	—



Metal/Nonmetal Mines
Underground Mine Fires
1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
U1	06/05/50	Copper Canyon Mine Copper Canyon Mining Company	Battle Mountain, Nevada	A fire, caused by hot rivet igniting greased timber, damaged the headframe and destroyed hoisting and power cables. Natural ventilation allowed fire to burn out.	0	1
U2	01/09/51	Pioneer Mine U.S. Steel Corporation	Ely, Minnesota	A fire, probably caused by an electrical short, caused minimal damage and was extinguished with water. Seals were erected to restrict air flow.	0	0
U3	04/19/51	Sunday Lake Mine Sunday Lake Iron Company	Wakefield, Michigan	A fire, possibly caused by a discarded cigarette, destroyed a shaft station and timber blocking. Fire burned out after shaft was sealed.	0	0
U4	06/18/51	Cary Mine Odanah Iron Company	Hurley, Wisconsin	A fire, probably caused by short circuit in conductor cable, burned timber and lagging. Area was sealed and fire extinguished by directing stream of water into raise.	0	0
U5	11/10/51	Gossan Mine Allied Chemical & Dye Corporation	Galax, Virginia	Fire started in tailings dumped in manway due to heat generation igniting timbers. Local fire department extinguished fire with water.	0	0
U6	11/20/51	Magma Mine Magma Copper Company	Superior, Arizona	A fire of undetermined origin in a raise was successfully fought with water. All men were evacuated.	0	0

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Metal/Nonmetal Mines
Underground Mine Fires

1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
U7	06/ /52	Shattuck Mine Shattuck Denn Mining Corporation	Bisbee, Arizona	A fire of undetermined origin completely destroyed the surface plant and burned out the shaft timbers at the abandoned mine. No attempt was made to extinguish the fire.	0	0
U8	06/23/52	Inspiration Live Oak Division Inspiration Copper Company	Inspiration, Arizona	A rag was drawn into the motor of a hoist motor-generator set and was ignited by friction. Fire was extinguished with water.	0	0
U9	07/10/52	Ray No. 2 Mine Kennecott Copper Corporation	Ray, Arizona	An electrical fire occurred when the broken end of a failed post cap rested on an insulated power cable. Arcing ignited the insulation and the fire was extinguished with water and portable extinguishers.	0	0
U10	05/ /53	United Verde Mine Phelps Dodge Corporation	Jerome, Arizona	A fire, caused by sparks from cutting operation igniting oil in a drainage ditch, spread to tunnel timbers. Fire was successfully extinguished with water.	0	0
U11	11/05/53	No. 1 Incline Mine American Gilsonite Company	Bonanza, Utah	A gilsonite dust explosion and resulting fire killed eight underground employees and injured three surface employees. Water successfully extinguished the fire.	8	3

Metal/Nonmetal Mines
Underground Mine Fires

1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
U12	12/ /53	Lion No. 1 Mine United States Smelting, Refining, and Mining Company	Silver City, New Mexico	The inactive No. 1 shaft caved in as a result of the fire which was thought to be caused by arson. No attempt was made to extinguish the fire as no water was available.	0	0
U13	01/22/54	Original Sixteen-to-One Mine Original Sixteen-to-One Corporation	Alleghany, California	A fire of electrical origin could not be immediately attacked and took eleven days to extinguish. Portable fan and ventilation door used to maintain positive ventilation.	0	0
U14	07/04/54	Hillside Mine Hillside Mining & Milling Company	Bagdad, Arizona	A fire of unknown origin completely destroyed the hoisting shaft at the Hillside Mine which had been out of operation for about three years.	0	0
U15	05/23/55	Hornet Mine Mountain Copper Company, Ltd.	Matheson, California	The rapid oxidation of pyrite in an abandoned and partly caved stope resulted in a fire which could not be fought directly. Fire was confined but not extinguished.	0	0
U16	05/27/55	Montreal Mine Montreal Mining Company	Montreal, Wisconsin	A fire of undetermined cause was found at the electric pump motor and was indirectly fought with water. Small outbreak fires were fought for next several days.	0	0
U17	11/29/55	Dando Works (Clay) Mine H.K. Porter Company, Inc.	Beaver, Pennsylvania	A fire of unknown origin was discovered at an electric switchbox. Temporary and permanent seals were erected to fight the fire.	0	0

Metal/Nonmetal Mines
Underground Mine Fires

1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
U18	12/16/55	Zenith Mine Vermilion Mining Company	Ely, Minnesota	A fire, probably caused by damaged or cut power cables igniting near- by timber, could not be extinguished with water. Fire seals were erected.	0	0
U19	03/24/56	Peterson Mine Pickands Mather & Company	Bessemer, Michigan	A short circuit resulting from insulation failure in the hanger of a trolley wire cut-off switch caused a fire which was successfully fought with water.	0	0
U20	05/04/56	Potash Mine Southwest Potash Corporation	Carlsbad, New Mexico	A fire broke out from hot slag from welding igniting grease and timber in the bottom of a pit. The fire was extinguished using carbon tetra- chloride extinguishers.	0	0
U21	05/26/56	Federal No. 17 Shaft St. Joseph Lead Company	Flat River, Missouri	The failure of a bearing support created friction which ignited 130 boxes carrying explosives. The fire burned itself out.	0	0
U22	08/ /56	Mather Mine, B Shaft Negaunee Mine Company	Negaunee, Michigan	A fire, probably caused by hot mate- rial from a cutting torch contacting combustible material, caused evacua- tion of miners while fire was fought successfully with water.	0	0
U23	10/29/56	Peterson Mine Pickands Mather & Company	Bessemer, Michigan	A fire, caused by a transformer overheating when a circuit breaker failed, was extinguished by deener- gizing the transformer.	0	0

Metal/Nonmetal Mines
Underground Mine Fires

1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
U24	11/02/56	Tracy Mine Jones and Laughlin Steel Corporation	Negaunee, Michigan	A fire, caused by tigger rope rubbing on lagging during scraping operation, was extinguished by direct application of water. One man was overcome with CO poisoning.	0	1
U25	01/04/57	Sunday Lake Mine Sunday Lake Iron Company	Wakefield, Michigan	A fire, possibly started by a short in an electrical cable, was extinguished by erecting seals and the direct application of water.	0	0
U26	02/06/57	Montreal Mine Montreal Mining Company	Montreal, Wisconsin	Smoke was noted in the air when a broken motor mount became wedged at the pump rotor causing the motor to become overheated. No active fire was found.	0	0
U27	02/19/57	Penokee Mine North Range Mining Company	Ironwood, Michigan	A fire, probably caused by workers using a torch near combustibles, was extinguished by a combination of seals, dry ice, and CO ₂ gas.	0	0
U28	02/25/57	Humboldt Mine Nevada-Massachusetts Company	Tungsten, Nevada	A fire, probably caused by a short in the pump power circuit, was extinguished by erecting a bulkhead in the shaft and directing water through the seal.	0	1
U29	05/08/57	Montreal Mine No. 5 Shaft Montreal Mining Company	Montreal, Wisconsin	A fire resulted from a welding/cutting operation in the raise and was readily extinguished with water.	0	0

Metal/Nonmetal Mines
Underground Mine Fires

1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
U30	06/04/57	Greenwood Mine Inland Steel Company	Ishpeming, Michigan	Slag from a cutting torch ignited combustible material nearby, causing a fire that was extinguished with water and foam extinguishers.	0	0
U31	07/16/57	Pioneer Mine U.S. Steel Corporation	Ely, Minnesota	A fire, caused by hot slag falling on shaft timbers, was extinguished by maintenance crew with an available bucket of water.	0	0
U32	07/17/57	White Pine Mine White Pine Copper Company	White Pine, Michigan	A short circuit in the trailing cable of a loading machine caused a fire that was put out with dry chemical hand-portable extinguishers.	0	0
U33	07/30/57	White Pine Mine White Pine Copper Company	White Pine, Michigan	Headlight wires shorted out causing a fire on a grader. Carbon dioxide extinguishers put the fire out.	0	0
U34	11/26/57	Godfrey Mine Snyder Mining Company	Hibbing, Minnesota	An electrical fire of unknown origin was extinguished by erecting seals and flooding the fire area with water.	0	0
U35	03/31/58	Montreal Mine Oglebay Norton Company	Montreal, Wisconsin	After blasting, a fire occurred which was probably caused by cutting or short circuiting of the tigger feeder cable when timber sets dislodged. Water and seals were used to extinguish the fire.	0	0

Metal/Nonmetal Mines
Underground Mine Fires

1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
U36	11/18/58	Morris Mine Inland Steel Company	Ishpeming, Michigan	An electrical fire of undetermined origin was put out with water and dry chemical fire extinguishers.	0	0
U37	01/27/59	Newport Mine Mauthe Mining Company	Ironwood, Michigan	An initial attempt to extinguish a fire of unknown origin with water was unsuccessful. Seals were installed and the fire burned itself out.	0	0
U38	02/03/59	Newport Mine Mauthe Mining Company	Ironwood, Michigan	An electrical fire occurred when insulation on a power cable was abraded during scraping operations. The fire was extinguished quickly with water.	0	0
U39	06/01/59	Sherwood Mine Inland Steel Company	Iron River, Michigan	A fire, due primarily to spontaneous combustion of black slate in a mined out stope, killed 6 miners and injured six others. Seals were erected to isolate the supposed fire area.	6	6
U40	07/21/59	Buck Mine Verona Mining Company	Caspian, Michigan	An electrical fire of undetermined origin in the idle mine was extinguished by repairing fire doors and constructing shiplap seals.	0	0
U41	09/08/59	Copper Queen Mine Phelps Dodge Corporation	Bisbee, Arizona	A fire of unspecified origin in an abandoned area of the mine was sealed with bulkheads and flooded through boreholes.	0	0

Metal/Nonmetal Mines
Underground Mine Fires

1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
U42	11/17/59	Sunday Lake Mine Sunday Lake Iron Company	Wakefield, Michigan	A fire of undetermined origin occurred in an abandoned section of the mine. Water extinguished the fire.	0	0
U43	12/16/59	Godfrey Mine Snyder Mining Company	Chisolm, Minnesota	A fire, probably caused by a short circuit in a power cable, was extinguished with water and by erecting seals.	0	0
U44	05/21/60	Black Jack No. 1 Mine Lance Corporation	Thoreau, New Mexico	A fire of undetermined origin destroyed timber and lagging above and below the shaft station. Seals were used to extinguish the fire.	0	0
U45	11/14/60	Pere-Marquette Cement Company	Oglesby, Illinois	A fire of undetermined origin in an abandoned mine killed a 16-year old boy by asphyxiation. Plans were made to seal mine openings.	1	0
U46	12/05/60	Westvaco (Trona) Mine Intermountain Chemical Company	Green River, Wyoming	A gas ignition occurred, seemingly due to the use of dynamite for blasting rather than permissible explosives.	0	0
U47	11/11/61	Quincy Mine Quincy Mining Company	Hancock, Michigan	A fire in the abandoned mine, probably caused by a discarded cigarette, was allowed to burn itself out. Plans were made to seal the mine openings.	0	0

Metal/Nonmetal Mines
Underground Mine Fires

1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
U48	11/12/61	Golden Queen Mine Dr. L.O. Schultz	Mojave, California	A fire was noticed and extinguished in this inactive mine but, since it is connected with other abandoned mines, a search for other fires will be undertaken.	0	0
U49	12/02/61	Magma Mine Magma Copper Company	Superior, Arizona	Two men suffered CO poisoning during a fire, possibly caused by spontaneous combustion of sulphide ores. Fire was extinguished with seals.	0	2
U50	05/08/63	Burro Mines No. 5 Shaft Union Carbide Nuclear Company	Slick Rock, Colorado	A fire of undetermined origin was extinguished by placing a seal to effectively isolate the No. 5 shaft. Due to the fire's location, it could not be fought directly with water.	0	0
U51	08/15/63	White Pine Mine White Pine Copper Company	White Pine, Michigan	A smoldering fire, due to the misapplication of rigid foam, was presumably extinguished without incident.	0	0
U52	01/29/64	Blackstone Mine American Zinc, Lead, & Smelting Company	Shullsburg, Wisconsin	A fire caused by sparks from a welding operation igniting oil and grease on the tractor and shop floor was allowed to burn itself out.	0	0
U53	05/12/64	White Pine Mine White Pine Copper Company	White Pine, Michigan	A fire, probably caused by friction on the No. 18 belt, was fought with hi-expansion foam and portable fire extinguishers.	0	0

Metal/Nonmetal Mines
Underground Mine Fires

1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
U54	07/08/64	Climax Mine Climax Molybdenum Company	Climax, Colorado	A fire, probably due to sparks or slag from welding operations, and an explosion of undetermined origin killed one miner and injured another. Intake air raise was sealed and foam was introduced.	1	1
U55	10/23/64	Ontario Adit, United Park City Mines United Park City Company	Keetley, Utah	A fire occurred when an armored cable in a tunnel blew out and ignited timber sets. To extinguish the fire, a dam was erected across the portal to force drainage water to flood the fire area.	0	0
U56	02/13/65	Homestake Mine Homestake Mining Company	Lead, South Dakota	A fire caused by spontaneous combustion was extinguished by building seals and then backfilling the fire area with sand.	0	0
U57	09/24/65	Cordero Mine Cordero Mining Company	McDermitt, Nevada	A fire, believed to be caused by spontaneous combustion of sulphide ores and/or timber in worked-out areas, was completely sealed off from the rest of the mine.	0	0
U58	10/10/66	Richard Iron Ore Mine Shahmoon Industries, Inc.	Wharton, New Jersey	A fire of undetermined origin could not be fought with water so the shaft was sealed to isolate the fire.	0	0
U59	10/27/66	New Idria Mine New Idria Mining & Chemical Company	Idria, California	A fire in an abandoned stope, due to spontaneous combustion of crushed sulphides, was fought by building stoppings and application of water.	0	0

Metal/Nonmetal Mines
Underground Mine Fires
1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
U60	03/22/67	Carlyle Clay Mine Carlyle Tile Company	Coal Grove, Ohio	The exact cause of a fire involving discharged dynamite cartons could not be determined. The fire was extinguished with water.	0	0
U61	07/06/67	Sunshine Mine Sunshine Mining Company	Kellogg, Idaho	A fire, caused by unsafe blasting of timber in raise, was successfully fought with water. Auxiliary fan reversed to dissipate CO concentrations.	0	0
U62	03/05/68	Belle Isle Salt Mine Cargill, Inc.	Franklin, Louisiana	A fire of undetermined origin killed 21 miners trapped underground. Six water lines were directed down the shaft to extinguish the fire.	21	0
U63	05/13/68	Bunker Hill Mine Bunker Hill Company	Kellogg, Idaho	A fire, probably caused by an electric light bulb that was left on, charred nearby lagging, posts, and blocks. Fire was put out with dry chemical extinguishers and water.	0	0
U64	12/19/68	Tom Reed Mine Americana Investment Company, Inc.	Oatman, Arizona	Attempt by fire department to extinguish a fire in the inactive mine, caused by hot sparks from cutting operation igniting shaft timber, was terminated when water lines froze.	0	0
U65	12/22/68	Section 17 Mine Kerr-McGee Corporation	Ambrosia Lake, New Mexico	A fire of probable electrical origin extensively damaged the underground hoistroom and haulage equipment. Water and foam were used in extinguishing the fire.	0	0

Metal/Nonmetal Mines
Underground Mine Fires

1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
U66	04/17/70	Pleasant Gap Mine Standard Lime & Refractories, Inc.	Pleasant Gap, Pennsylvania	An electrical fire destroyed a 30-ton autotruck when an arc formed between the battery cable and hydraulic hose, igniting the pressurized fluid.	0	0
U67	06/30/70	Ni1 Mine Union Carbide Corporation	Uravan, Colorado	A fire of undetermined origin damaged the raise cribbing. Since the fire could not spread, it was allowed to burn itself out.	0	0
U68	08/02/70	Bunker Hill Mine Bunker Hill Company	Ke1logg, Idaho	A fire in the pump room, probably caused by heat from burned-out electrical motor, was extinguished with dry chemical and carbon dioxide extinguishers and water.	0	0
U69	11/27/70	Lakeshore Mine Hecla Mining Company	Casa Grande, Arizona	An LHD operator was killed when he lost control of his vehicle, was knocked or fell out of it, and was run over by the front tire. Fire broke out but was allowed to burn out overnight.	1	0
U70	01/20/71	Star Mine Hecla Mining Company	Burke, Idaho	Two miners died of asphyxiation when a fire broke out due to use of a torch in close proximity to flammable substances. Dry chemical fire extinguishers were successful in putting the fire out.	2	0

Metal/Nonmetal Mines
Underground Mine Fires

1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
U71	04/22/71	Sunshine Mine Sunshine Mining Company	Kellogg, Idaho	Sparks from a shorted cable ignited nearby timbers causing a fire which was contained with fire extinguishers and put out with water.	0	0
U72	07/16/71	Galena Mine Callahan Mining Company	Wallace, Idaho	A fire of undetermined origin was successfully fought with water and foam. Brattices were constructed to regulate ventilation to fire area.	0	0
U73	08/17/71	Phillipson Level Mine Climax Molybdenum Company	Climax, Colorado	Hot slag from a cutting torch ignited chute timbers causing a fire which was extinguished by completely wetting down the fire area.	0	0
U74	09/09/71	Dragon Underground Mine The Anaconda Company	Eureka, Utah	The probable spontaneous combustion of sulphide minerals used in backfilling caused a fire in abandoned workings. Fire area was sealed and a decision was reached to sink a new shaft.	0	0
U75	05/02/72	Sunshine Mine Sunshine Mining Company	Kellogg, Idaho	Ninety-one miners died of CO poisoning when a fire broke out, probably caused by the spontaneous combustion of refuse in an abandoned stope area. Extinguishing attempts consisted of erecting seals and sandfilling the fire area. Seven months of production were lost.	91	0

Metal/Nonmetal Mines
Underground Mine Fires

1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
U76	05/15/72	Pea Ridge Mine Meramec Mining Company	Sullivan, Missouri	A short circuit in a transformer caused a fire which was extinguished by cutting the power off and eliminating the ignition source.	0	0
U77	05/26/72	Magma Mine Magma Copper Company	Superior, Arizona	A smoldering fire, probably caused by spontaneous combustion, was detected by air analysis. Bulkheads were constructed and sealed with foam.	0	0
U78	06/20/72	Jefferson Island Salt Mine Diamond Crystal Salt Company	Jefferson Island, Louisiana	The cause of a fire on a front end loader could not be determined due to extent of damage. After several attempts, water successfully extinguished the blaze.	0	0
U79	07/10/72	Kerr-McGee - Potash Division Mine Kerr-McGee Corporation	Carlsbad, New Mexico	A fire, caused by friction igniting a conveyor belt, was extinguished by cutting the belt and separating it in intake air.	0	0
U80	07/20/72	Federal Division No. 10 Mine St. Joe Minerals Corporation	Bonne Terre, Missouri	When power was left on, an unattended shuttle car caught fire. Water and dry chemical extinguishers were used to put the fire out.	0	0
U81	08/16/72	White Pine Area II White Pine Copper Company	White Pine, Michigan	Sparks from the exhaust of an ore truck probably caused a fire in a pile of waste material. Foam successfully extinguished the fire.	0	0

Metal/Nonmetal Mines
Underground Mine Fires

1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
U82	09/24/72	Jefferson Island Mine & Mill Diamond Crystal Salt Company	Jefferson Island, Louisiana	A fire, caused by a short circuit creating an arc which ignited nearby timbers, was extinguished with water, dry chemical, and foam extinguishers.	0	0
U83	10/11/72	Burgin Mine & Mill Kennecott Copper Corporation	Eureka, Utah	An insulation breakdown in a pump motor caused a short circuit which ignited the oil-filled motor. Dry chemical extinguishers were used to put the fire out.	0	0
U84	11/07/72	Sterling Mine New Jersey Zinc Company	Ogdensburg, New Jersey	A fire occurred when a welder failed to notice defect in acetylene hose which ruptured when tank was turned on. Water and dry chemical extinguishers used successfully on fire.	0	0
U85	11/17/72	Grand Saline Mine Morton Salt Company	Grand Saline, Texas	A fire originating in the belt drive motor of a conveyor was allowed to burn itself out. Ventilation was blocked to smother the fire.	0	0
U86	12/30/72	Homestake Mine Homestake Mining Company	Lead, South Dakota	A fire on a battery-operated locomotive, apparently caused by electrical failure involving the storage battery, was extinguished with dry chemical extinguishers and water.	0	0
U87	01/02/73	Henderson Mine American Metals Climax, Inc.	Empire, Colorado	A locomotive caught fire when the motorman failed to set the controls in neutral and pull the battery disconnect plug at the end of the day. Dry chemical extinguishers used.	0	0

Metal/Nonmetal Mines
Underground Mine Fires
1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
U88	01/10/73	Sunshine Mine Sunshine Mining Company	Kellogg, Idaho	A fire, probably caused by the use of a torch in the vicinity of combustible material, was extinguished by flooding the area with water.	0	0
U89	01/29/73	Mather Mine Cleveland Cliffs Iron Company	Negaunee, Michigan	The use of a cutting torch on the previous shift was the probable cause of a fire in a crosscut which was quickly extinguished with water.	0	0
U90	01/30/73	Mather Mine Cleveland Cliffs Iron Company	Negaunee, Michigan	A fire, occurring when a trolley pole jumped the wire and shorted out on ground support sets, was extinguished by direct application of water.	0	0
U91	02/08/73	Sunshine Mine Sunshine Mining Company	Kellogg, Idaho	A peculiar odor was noticed in the mine and, upon investigation, two oil-soaked cardboard boxes were found which had apparently been burned. Area was presently inactive.	0	0
U92	02/21/73	Retsof Mine International Salt Company	Retsof, New York	A fire occurred in a control box due to the failure of fuses. Fire was extinguished using dry chemical and CO ₂ portable extinguishers and water.	0	0
U93	03/22/73	Magma No. 9 Shaft Magma Copper Company	Superior, Arizona	A fire, caused by hot slag from welding igniting the contained gas of acetylene tank, was extinguished by allowing it to burn out most of the way and then applying dry chemical.	0	0

Metal/Nonmetal Mines
 Underground Mine Fires
 1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
U94	04/13/73	Continental No. 2 Mine U.V. Industries, Inc.	Fierro, New Mexico	Smoke and odor was produced when a motor became overheated, causing an insultation breakdown. The main power switch was immediately turned off and fire burned out.	0	0
U95	04/23/73	Lisbon Mine Rio Algom Corporation	La Sal, Utah	Drill foreman was seriously burned when he ignited an accumulation of methane with a cutting torch. No methane checks had been made.	0	1
U96	05/05/73	Eagle Mine New Jersey Zinc Company	Gilman, Colorado	Atmosphere checks indicated probable oxidation of sulphide ores and the spontaneous combustion of the ore body. Seals were constructed and gunited, putting the fire out.	0	0
U97	05/17/73	White Pine Mine White Pine Copper Company	White Pine, Michigan	A fire in the engine compartment of an ore car, probably caused by contact of heat shield with heated exhaust components, was extinguished using foam generator unit.	0	0
U98	06/08/73	Sunshine Mine Sunshine Mining Company	Kellogg, Idaho	Arcing action, caused by a short circuit in one of the main power cables, ignited nearby timber. Fire was extinguished with a water hose.	0	0
U99	08/17/73	Lakeshore Mine El Paso Natural Gas Company	Casa Grande, Arizona	Two miners were killed when they were trapped in a muck slide with a diesel loader which continued to run, causing the engine to overheat and ignite oil or hydraulic fluid.	2	0

Metal/Nonmetal Mines
Underground Mine Fires
1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
U100	08/21/73	Weeks Island Mine Morton Salt Company	Weeks Island, Louisiana	A fire occurred when arcing between conductors in a trailing cable ignited the tires of a flat bed truck. Salt was used to extinguish the fire.	0	0
U101	09/24/73	Steward Mine. The Anaconda Company	Butte, Montana	A short in a ventilation fan motor created a heavy concentration of smoke and was extinguished by two nearby repairmen.	0	0
U102	10/30/73	San Manuel Mine Magma Copper Company	San Manuel, Arizona	A blasting switch was left energized which ignited a reel of wire and then surrounding timber sets. Dry chemical and CO ₂ extinguished the fire.	0	0
U103	11/02/73	Leonard Mine The Anaconda Company	Butte, Montana	Flame ignited a bulkhead when workers used a candle to detect leaks. An ax was used to chop out the area of the bulkhead that had burned.	0	0
U104	11/08/73	White Pine Mine, #3 Shaft. White Pine Copper Company	White Pine, Michigan	A fire occurred when workers exceeded manufacturer's specifications in the application of rigid foam. Water and dry chemical extinguishers were used to put the fire out.	0	0
U105	11/29/73	Underground No. 1 Mine Central Rock Company	Lexington, Kentucky	A fire of undetermined origin destroyed the underground shop and its contents before it could be extinguished using water.	0	0

Metal/Nonmetal Mines
 Underground Mine Fires
 1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
U106	12/07/73	Sunshine Mine Sunshine Mining Company	Kellogg, Idaho	A fire most likely occurred in a ventilation fan. There was no indication of fire, other than smoke smelled in the hoistroom.	0	0
U107	12/11/73	White Pine Mine White Pine Copper Company	White Pine, Michigan	Slippage between a belt and drive section created friction which caused heat to the point of combustion. Fire extinguished itself when it burned through the belt.	0	0
U108	01/13/74	White Pine Mine, Area 3 White Pine Copper Company	White Pine, Michigan	A belt drive pulley and lagging were found smoldering after muck caused belt to stop, creating friction. Muck and water were used to cool equipment and fan cleared the smoke.	0	0
U109	01/31/74	Minerva No. 1 Mine & Mill Minerva Oil Company	Cave-in-Rock, Illinois	A fire of undetermined origin was found in the waste dump area. Fire was extinguished by mine rescue team and fire area wet down.	0	0
U110	02/18/74	San Manuel Mine Magma Copper Company	San Manuel, Arizona	A fire, probably caused by hot metal igniting flammable gas, was extinguished with dry chemical and water after power was shut off.	0	0
U111	04/26/74	Henderson Mine American Metals Climax Inc.	Empire, Colorado	A fire occurred when spilled fuel was ignited as a vehicle's engine mounts broke. Dry chemical extinguishers put the fire out.	0	0

Metal/Nonmetal Mines
 Underground Mine Fires
 1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
U112	05/01/74	Henderson Mine Climax Molybdenum Company	Empire, Colorado	Smoke was detected when a main motor bearing on a pump burned out. Power was turned off and atmosphere checks were made. Motor was no longer smoking when it was found.	0	0
U113	05/27/74	Sherwood Mine Inland Steel Company	Iron River, Michigan	Spontaneous combustion of black slate due to fall in stoping area resulted in fire. Area of fall was isolated by construction of stoppings. Three men were overcome.	0	3
U114	06/10/74	Crescent Mine Bunker Hill Company	Kellogg, Idaho	Two transformers caught fire due to breakdown of conductor insulation. Electrical power was cut off and shaft sprinkler system was used to extinguish the fire.	0	0
U115	06/11/74	Bunker Hill Mine Bunker Hill Company	Kellogg, Idaho	An electrical fire of undetermined origin at an LHD control panel had burned itself out when a mine rescue crew located the fire source.	0	0
U116	06/16/74	White Pine Mine, Area 2 White Pine Copper Company	White Pine, Michigan	A conveyor belt ignited when friction built up at the belt drive. A belt repair crew extinguished the fire with water.	0	0
U117	07/16/74	Grace Mine Bethlehem Mines Corporation	Morgantown, Pennsylvania	A short circuit in the isolation solenoid of LHD caused the ignition of insulation on electrical wires and rubber hoses. Dry chemical extinguishers put the fire out.	0	0

Metal/Nonmetal Mines
Underground Mine Fires

1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
U118	07/20/74	Jefferson Island Mine Diamond Crystal Salt Company	Jefferson Island, Louisiana	A fire, due to spontaneous combustion of an unknown cause, was extinguished with water after several unsuccessful attempts.	0	0
U119	07/25/74	White Pine Mine, Area 3 White Pine Copper Company	White Pine, Michigan	A fire, probably caused by a short in electrical wires, was found in newly installed rigid foam. Water and dry chemical extinguished the fire.	0	0
U120	09/12/74	Leonard Mine The Anaconda Company	Butte, Montana	A fire, probably caused by spontaneous combustion, was detected by high concentrations of CO, SO ₂ , and wood smoke. The entire fire area was sealed.	0	0
U121	09/17/74	Hardin Run Clay Mine & Mill Crescent Brick Company	New Cumberland, West Virginia	Spontaneous combustion in gob area caused a fire which was extinguished with water. Ventilation was reversed to facilitate investigation.	0	0
U122	11/12/74	Campbell Mine Phelps-Dodge Corporation	Bisbee, Arizona	A suspected underground fire, due to spontaneous combustion of unspecified origin, was determined to be out after the construction of seals and bulkheads.	0	0
U123	01/10/75	Henderson Mine American Metals Climax, Inc.	Empire, Colorado	A fire in a rear dump truck, probably caused by poor insulation of electrical wires, was extinguished with water and dry chemical.	0	0

Metal/Nonmetal Mines
Underground Mine Fires

1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
U124	02/05/75	Mather Mine Negaunee Mining Company	Negaunee, Michigan	Sparks or slag from cutting torch operation ignited cedar lagging. Safety department extinguished the fire with water.	0	0
U125	04/08/75	Brushy Creek Mine & Mill St. Joe Minerals Corporation	Bunker, Missouri	A front end loader operator was injured when hydraulic oil from his vehicle ignited, possibly due to electrical short in battery cable. Fire was extinguished with water.	0	1
U126	05/05/75	Weeks Island Mine Morton Salt Company	New Iberia, Louisiana	A drill hole fire occurred when oil accumulated in the hole, resulting in poor detonation and resultant ANFO ignition. Fire was allowed to burn itself out.	0	0
U127	05/09/75	Homestake Mine Homestake Mining Company	Lead, South Dakota	Fire was probably caused by spontaneous combustion of timber lining initiated by severe loss of ventilation. Air brattice and sand walls were constructed to contain the fire.	0	0
U128	05/30/75	Sugar Creek Underground Garage & Storage Missouri Portland Cement Company	Sugar Creek, Missouri	Fire, caused by sparks from a cutting torch igniting combustible material, took several days for fire department to extinguish with water.	0	0
U129	06/02/75	Campbell Mine Phelps-Dodge Corporation	Bisbee, Arizona	A fire, probably caused by spontaneous combustion of combustible refuse, was extinguished by sealing and sand filling the area.	0	0

Metal/Nonmetal Mines
Underground Mine Fires
1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
U130	09/30/75	Mather Mine Negaunee Mining Company	Negaunee, Michigan	Cutting operations was the apparent cause of a fire which was extinguished with water. A fire watch was maintained in the area.	0	0
U131	10/07/75	Cayuga Mine & Mill Cargill, Inc.	Myers, New York	A fire occurred due to runaway cars damaging a power line which ignited some dynamite. The fire burned itself out.	0	0
U132	12/04/75	Pilot Knob Mine, Mill and Pellet Plant Pilot Knob Pellet Company	Pilot Knob, Missouri	A miner was killed when his cage fell, due to a fire which was caused by the use of a torch in close proximity to an accumulation of oil and grease. Water put the fire out.	1	0
U133	02/11/76	Buick Mine & Mill Amox Lead Company of Missouri	Boss, Missouri	An employee was burned when he attempted to put out a fire on a front end loader. The fire occurred when a hot wire from the starter shorted out. Fire burned itself out.	0	1
U134	02/19/76	Bunker Hill Mine Bunker Hill Company	Kellogg, Idaho	A small explosion and resultant fire, probably caused by welding operations, burned itself out.	0	0
U135	04/01/76	Homestake Mine Homestake Mining Company	Lead, South Dakota	An electric heater was the apparent cause of a fire that was extinguished by a mine rescue crew with water.	0	0
U136	04/05/76	Reserve Mine Western Nuclear, Inc.	Jeffrey City, Wyoming	Welding on the previous day was the probable cause of a fire that was extinguished after adjacent mine was evacuated.	0	0

Metal/Nonmetal Mines
Underground Mine Fires
1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
U137	06/22/76	Grace Mine Bethlehem Mines Corporation	Morgantown, Pennsylvania	LHD machine exploded into flames when a universal joint broke, igniting spray of oil. Dry chemical extinguishers and water were used to put the fire out.	0	0
U138	08/27/76	Silver Dollar Mine Silver Dollar Mining Company	Osburn, Idaho	A fire, probably caused by placing a portable heater near combustible materials, was extinguished with water, carbon monoxide, and mud.	0	0
U139	10/01/76	Bunker Hill Mine Bunker Hill Company	Kellogg, Idaho	A fire in a haulage truck's engine compartment, caused by a loose battery cable igniting a rubber hose, burned itself out.	0	0
U140	10/18/76	San Manuel Mine Magma Copper Company	San Manuel, Arizona	A short circuit in a pump motor caused a fire in a pump station. Power was deactivated and fire extinguished with water.	0	0
U141	04/16/77	Cabin Creek Mine Dravo Lime Company	Maysville, Kentucky	Eleven miners were hospitalized when a phase-to-phase fault caused a fire which presumably burned itself out when the power was cut off.	0	11
U142	06/03/77	Alchem Trona Mine Allied Chemical Corporation	Green River, Wyoming	Inadequate ventilation allowed high concentrations of methane to develop. When power was energized, an ignition set fire to the clothing of four miners. A cable splice in fan power line was ignition source.	0	4

Metal/Nonmetal Mines
Underground Mine Fires

1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
U143	06/10/77	Ozark Mine & Mill Ozark Lead Company	Sweetwater, Missouri	Ignition of accumulated oil and grease by electricity or engine heat probably caused a fire on an LHD. Fire was extinguished with water.	0	0
U144	06/23/77	Cayuga Mine & Mill Cargill, Inc.	South Lansing, New York	A fire, caused by a short circuit in a transformer, burned itself out after all personnel were evacuated.	0	0
U145	07/30/77	Henderson Mine Climax Molybdenum Company	Empire, Colorado	Friction, caused by a malfunction of the hydraulic emergency brake, was the source of a fire on a loader. Dry chemical extinguishers and water put the fire out.	0	0
U146	08/26/77	Pleasant Gap Mine & Mill Marblehead Lime Company	Pleasant Gap, Pennsylvania	Combustible materials in close proximity to heaters caused a fire in a storage shed which apparently burned itself out when the power was turned off. The fire area was flooded with water.	0	0
U147	09/20/77	Montevallo Mine Allied Products Company	Montevallo, Alabama	A fire after a fall of ground, probably due to turbocharger igniting hot oil or fuel, was allowed to burn itself out.	0	0
U148	09/30/77	Climax Mine Climax Molybdenum Company	Climax, Colorado	A short in electrical wiring caused a substation fire which was put out with dry chemical and CO2 extinguishers.	0	0

Metal/Nonmetal Mines
Underground Mine Fires

1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
U149	10/03/77	Eagle Mine New Jersey Zinc Company	Gilman, Colorado	Spontaneous combustion from oxidation of pyrite was the probable cause of a fire that was extinguished by constructing seals. Two miners were hospitalized for CO poisoning.	0	2
U150	10/06/77	Section 30 Mine Kerr-McGee Nuclear Company	Ambrosia Lake, New Mexico	A fire of undetermined electrical origin occurred at a power station and was put out using dry chemical extinguishers.	0	0
U151	11/23/77	Sunshine Mine Sunshine Mining Company	Kellogg, Idaho	An electrical fire, caused by phase to phase arcing within the pump motor, burned out when the circuit was deenergized.	0	0
U152	11/30/77	Sunshine Mine Sunshine Mining Company	Kellogg, Idaho	A fire, caused by a short circuit in an electrical power cord, burned itself out by the time miners located the fire area. A fire watch was posted and area wet down.	0	0
U153	12/08/77	Retsof Mine & Mill International Salt Company	Retsof, New York	Failure of a motor supply terminal at a cutter motor caused arcing which ignited hoses and insulation. Fire was put out with dry chemical and CO ₂ extinguishers.	0	0
U154	01/06/78	Cherokee Mine Cities Service Company	Copperhill, Tennessee	A fire, probably caused by an electric spark igniting hydraulic fluid, mostly burned itself out. Extinguishers were used and water spray cooled the fire area.	0	0

Metal/Nonmetal Mines
Underground Mine Fires
1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
U155	01/22/78	Beyer Mine & Mill Louis Marino, Inc.	Kansas City, Missouri	A fire, probably started by van- dals, was extinguished by soaking the material with water and bull- dozing the remainder of debris.	0	1
U156	01/24/78	Magma Mine, Superior Division Magma Copper Company	Superior, Arizona	A flash fire followed the detona- tion of two rounds. Fine sulphide dust in the air was ignited by the flame from the blast.	0	0
U157	01/25/78	Project No. 74 Continental Oil Company	Kaycee, Wyoming	A lead miner was fatally injured in a flash fire when he detonated explosives from an exposed position.	1	0
U158	01/31/78	No. 5 Mine Georgia Marble Company	Whitestone, Georgia	The cause of a fire on a new loader could not be determined due to ex- tensive damage to the vehicle. The fire was allowed to burn out.	0	0
U159	02/22/78	Sunshine Mine Sunshine Mining Company	Kellogg, Idaho	Internal short circuiting of a mo- tor-generator set created consider- able smoke. Source of fire was found and little damage was revealed.	0	0
U160	03/28/78	Cayuga Mine & Mill Cargill, Inc.	South Lansing, New York	An overheated compressor unit re- sulted in a fire that was extin- guished by mine rescue crew. Main air intake fan was reversed.	0	0
U161	04/19/78	Gordonsville Project Jersey Miniere Zinc Company	Gordonsville, Tennessee	A fire of undetermined origin on a scooptram basically burned itself out. Smoldering remains were ex- tinguished by rescue crew.	0	0

Metal/Nonmetal Mines
Underground Mine Fires

1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
U162	06/28/78	Bunker Hill Mine Bunker Hill Company	Kellogg, Idaho	Fire, caused by sparks/slag from cutting with oxyacetylene torch, was put out with water and fire extinguishers.	0	0
U163	08/08/78	Climax Mine Climax Molybdenum Company	Climax, Colorado	A fire, caused by failure of trolley hanger insulation, was extinguished by cutting off the electrical power and using water.	0	0
U164	09/12/78	Logan Wash Occidental Oil Shale, Inc.	Debeque, Colorado	A failure in the sill pillar above the retort resulted in an uncontained fire. Openings were sealed to isolate the fire from the rest of the mine.	0	0
U165	10/11/78	Climax Mine Climax Molybdenum Company	Climax, Colorado	When trolley feeder was dislodged, a cable was ignited. Upon locating the burning cable, the fire was put out with CO ₂ extinguishers.	0	0
U166	10/16/78	Young Mine Asarco, Inc.	Strawberry Plains, Tennessee	A fire of undetermined origin set an LHD on fire. While air quality was being tested, employees extinguished the blaze with water.	0	0
U167	12/06/78	U.S.B.M. No. 1 Shaft U.S. Government	Meeker, Colorado	A fire of undetermined cause followed the partial firing of a round. It was decided to flood the shaft since the fire was worsening.	0	0
U168	12/13/78	Weeks Island Storage Complex Dravo Corporation	Weeks Island, Louisiana	The improper application of successive layers of polyurethane foam caused a fire which was put out by mine rescue crew.	0	0

Metal/Nonmetal Mines
Underground Mine Fires

1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
U169	12/16/78	Ozark Mine & Mill Ozark Lead Company	Sweetwater, Missouri	A jumbo drill was found burning after it had been left unattended. The fire was put out by manually directing water on the drill.	0	0
U170	01/09/79	Belle Isle Salt Mine Cargill, Inc.	Patterson, Louisiana	Fire destroyed most of the reclaim tunnel conveyor system as mine rescue crew fought a fire of undetermined cause in the tunnel. After several days, application of water was successful.	0	0
U171	01/19/79	Water Lilly Mine Kennecott Copper Corporation	Dividend, Utah	Sparks from cutting operation ignited nearby timbers, causing a fire which was extinguished several days later with water and foam.	0	0
U172	02/02/79	Belle Isle Salt Mine Cargill, Inc.	Patterson, Louisiana	An electrical fire of undetermined origin was extinguished by wetting down the entire fire area.	0	0
U173	03/25/79	Crescent Mine Bunker Hill Company	Kellogg, Idaho	A timber fire of undetermined origin occurred in the No. 1 shaft. All persons were evacuated and fire was put out with water and dry chemical extinguishers.	0	0
U174	11/15/79	Bunker Hill Mine Bunker Hill Company	Kellogg, Idaho	An electrical pump motor caught fire due to an interior phase fault. All persons were evacuated and the fire burned itself out.	0	0

3.2 Surface Mine Fires

Table II-1b contains a list of surface mine fires listed in chronological order. Included are all surface metal and nonmetal mine fires during the period 1950 - 1979 and two 1980 fires for which an accident report has been located. Each fire has been assigned an incident number to relate information in this table to the surface fire incident report forms in the Appendix and various indexes.

For each fire, the table contains an incident number, date of fire, mine name and operator, mine location, description of the fire, and number killed or injured.

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Number

Table II-1b.
Metal and Nonmetal
Surface Mine Fires
1950 - 1979

20 —
40 —
60 —
80 —
100 —
120 —

Metal/Nonmetal Mines
 Surface Mine Fires
 1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
S1	09/10/50	Magma Mine Magma Copper Company	Superior, Arizona	A fire, presumably caused by open flame near combustibles, destroyed a wooden framing shed. Fire department kept fire from spreading.	0	0
S2	10/27/53	Silverbell Mill American Smelting & Refining Company	Silverbell, Arizona	Fire occurred due to welding operations conducted in close proximity to combustible materials. Water spray extinguished the fire.	0	0
S3	02/04/56	Champion Mine North Range Mining Co.	Champion, Michigan	Fire, originating in electric control panels and hoist controls destroyed surface hoist house. All extinguishing efforts failed.	0	1
S4	07/17/56	Quincy Mine - No. 6 Shaft Quincy Mining Company	Hancock, Michigan	A fire, probably caused by discarded cigarette by trespasser, destroyed the wooden shaft house.	0	0
S5	09/04/56	Pariett Mine Standard Gilsonite Co.	Myton, Utah	A fire of undetermined origin completely destroyed the hoist house, hoist, timbers, prep plant, and sacking plant.	0	0
S6	01/16/57	Feldspar Mill Int'l. Minerals & Chemicals Corporation	Keystone, South Dakota	A fire, probably caused by open fire used to heat crusher bearings, completely destroyed the entire mill facility.	0	0
S7	08/10/58	Abbott Mine California Quicksilver Mines, Inc.	Williams, California	Gasoline-soaked waste rags, piled on the side of power plant house, caught fire from undetermined cause. Fire spread to entire building.	0	0

Metal/Nonmetal Mines
 Surface Mine Fires
 1950 - 1979

Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
S8	03/30/59	Penokee Mine North Range Mining Co.	Ironwood, Michigan	After being idle, equipment was energized for a short test period. A fire of undetermined origin completely destroyed the plant.	0	0
S9	01/10/61	Potash Mine & Mill Potash Company of America	Carlsbad, New Mexico	An explosion and flash fire of undetermined origin occurred in after-cooler of a high pressure engine in surface power house. One man was fatally injured in the explosion.	1	0
S10	01/30/61	Embarrass Mine Pickands Mather & Co.	Biwabik, Minnesota	Main shop building was destroyed by a fire believed to be started by a short or friction in V-belt drive of heat-exchanger fan. Fire extinguished with water.	0	0
S11	07/24/61	Benson Mines N.Y. Ore Division Jones & Laughlin Steel Corporation	Star Lake, New York	Lightning struck a borehole igniting aluminum and magnesium chips. It burned until a low order detonation occurred.	0	0
S12	11/28/61	Elbern Mine Haley-Young Mining Co.	Chisolin, Minnesota	Fire, probably caused by cutting during dismantling operations, completely destroyed the crushing and screening plant of abandoned mine.	0	0
S13	07/07/62	Bell Compressor Plant The Anaconda Company	Butte, Montana	Several simultaneous explosions and a fire of unknown origin destroyed the compressor building and equipment. Seven men were injured and the fire was extinguished with water.	0	7

Metal/Nonmetal Mines
 Surface Mine Fires
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Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
S14	07/10/62	Aurora Mine North Range Mining Co.	Ironwood, Michigan	A fire caused by sparks from welding and cutting operations damaged the headframe of the abandoned shaft. Fire was extinguished with water.	0	0
S15	07/22/62	Albany Mine Pittsburgh Pacific Co.	Hibbing, Minnesota	Entire warehouse and contents were destroyed by arson fire.	0	0
S16	11/09/62	Longyear Mine Jones & Laughlin Steel Corporation	Kitsville, Minnesota	A fire destroyed the shop building and contents when the stack heat control thermostat in boiler room malfunctioned, overheating and allowing surrounding rafters to ignite.	0	0
S17	01/14/63	Shullsburg Mine Eagle-Pitcher Company	Shullsburg, Wisconsin	A fire resulting from a break in a power connection which allowed a short circuit to ignite combustibles destroyed the crushing and screening plant and the headframe of a shaft.	0	0
S18	06/18/63	Reserve Processing Plant Reserve Mining Company	Silver Bay, Minnesota	A conveyor belt was partially destroyed when it caught fire, possibly due to heating of the belt by the hot ore pellets or failure of the water spray system. Fire was extinguished with water.	0	0
S19	07/19/63	Huron Portland Cement Company Plant Huron Portland Cement Company	Superior, Wisconsin	An electrical fire of unknown origin caused extensive damage to the controller switchbox. Power was cut off and fire extinguished.	0	0

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 Surface Mine Fires
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Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
S20	01/15/64	Diamond Hill Quarry Florida Rock Products Corporation	Brooksville, Florida	A general laborer was killed by an explosion as he poured diesel fuel into a barrel which provided heat for employees in the pit area. The heated container was not entirely devoid of fire and exploded.	1	0
S21	12/19/64	United States Steel Central Heating Plant United States Steel Corporation	Virginia, Minnesota	Fire, probably caused by heat from the stacks carbonizing the wood in the roof until it reached the ignition point, destroyed the central heating system of the building.	0	0
S22	06/06/67	Gresham Quarry Nello L. Teer Company	Raleigh, North Carolina	A welder was killed when he apparently attempted to cut into a steel drum which had contained methanol. His clothing ignited when the drum exploded.	1	0
S23	07/31/67	Capitol Cement Division Capitol Aggregates, Inc.	San Antonio, Texas	A lathe operator received fatal burns when a gasket on a shop-made flash arrester ruptured, spraying him with acetylene gas and liquid acetone which ignited.	1	0
S24	08/08/67	Gordy Plant Gordy Salt Company, Inc.	Breaux Bridge, Louisiana	The ignition of flammable gas caused an explosion and fire which resulted in the death of one man and injury of another. Several buildings were destroyed.	1	1

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 Surface Mine Fires
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Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
S25	05/14/68	Graham Mill Eagle-Pitcher Industries, Inc.	Galena, Illinois	Lightning struck a tailings building, completely destroying it. Water extinguished the fire.	0	0
S26	06/17/68	Seneca & Kearsarge No. 4 Mines Calumet & Hecla Corporation	Calumet, Michigan	The mines had been closed for about one year and the buildings were being dismantled when several surface structures were destroyed by fire.	1	1
S27	07/16/68	Saulsbury Pit Tri-State Sand Company	Saulsbury, Tennessee	Victim was refueling his dragline when a flame set him on fire. Probable cause was lit cigarette igniting explosive mixture of propane and air.	1	0
S28	08/16/68	Pacific Sand & Gravel Company	Centralia, Washington	A welder was killed in the shop area while performing welding/cutting operations in the presence of flammable vapors.	1	0
S29	01/01/69	Watson Mine Swift Agricultural Chemicals Corporation	Fort Meade, Florida	A pit gun operator was killed when his pants leg and upper edge of boot caught fire from a small open wood fire which employees had built for warmth.	1	0
S30	01/16/69	Temperly-Thompson Mine American Zinc Company	Shullsburg, Wisconsin	A fire, believed to be of electrical origin, completely destroyed the surface compressor building. There were no extinguishing efforts.	1	0

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Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
S31	05/31/69	Republic Mine Marquette Iron Mining Company	Republic, Michigan	A section of brick lining fell, allowing hot spot to develop in steel lining of cooling grates. The fire in the control room was extinguished with water.	0	0
S32	07/16/69	Silver Bay Plant Reserve Mining Company	Silver Bay, Minnesota	A belt fire resulted from poor cutting and welding practices. The fire was extinguished with water.	0	0
S33	09/28/69	Pitts Quarry Pitts Quarry, Inc.	Radom, Illinois	A truck driver was fatally burned when he attempted to refuel a tractor while it was running. The gasoline ignited, setting him on fire.	1	0
S34	02/22/70	Resurrection No. 2 Mine Asarco	Leadville, Colorado	A fire of unknown origin destroyed the surface building, as well as the hoist and headframe, before it could be extinguished with water. The mine was inactive at the time.	0	0
S35	05/12/70	Coeur d'Alene Mine Coeur d'Alene Mines, Inc.	Osburn, Idaho	A fire, resulting from welding/cutting operations, destroyed the surface mine shop. Efforts were directed toward saving nearby buildings.	0	0
S36	08/27/70	Julia Mill Pittsburgh Pacific Company	Virginia, Minnesota	The use of a torch in the explosives storage area resulted in a fire which ignited a carton of explosives. One magazine was destroyed and the roof of another was damaged.	0	0

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Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
S37	09/30/70	Otay No. 1 Pit & Mill H.G. Fenton Material Company	San Diego, California	A repairman received fatal burns when an electrical arc from ignition of engine he was working on ignited gasoline which had been sprayed on him.	1	0
S38	11/14/71	Woolley Valley Mine Stauffer Chemical Co.	Soda Springs, Idaho	A fire destroyed the mine shop and materials stored therein when two workmen attempted to thaw a pipe by igniting diesel soaked rags which they had wrapped around the pipe.	0	0
S39	12/31/71	Babbit Mine U.S. Antimony Corp.	Thompson Falls, Montana	A fire, probably caused by an oil heater left burning, destroyed a trailer house, portable air compressor, and oil storage shed. The fire burned out by the time it was discovered.	0	0
S40	07/17/72	Sunshine Mine Sunshine Mining Co.	Kellogg, Idaho	A small fire in the Celotex layer of the surface machine shop roof was extinguished with water after the mine was evacuated. The probable cause was sparks from the forge.	0	0
S41	08/27/72	Sunshine Mine Sunshine Mining Co.	Kellogg, Idaho	A fire of undetermined origin was found in a timber storage area of the stull yard. Water was successful in extinguishing the fire.	0	0
S42	09/29/72	Mojave Pit & Mill California Portland Cement Company	Mojave, California	Three electricians were burned during a fire caused by a cartridge-type fuse slipping from its holder and grounding on the cabinet.	0	3

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Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
S43	10/26/72	Schwartzwalder Mine Cotter Corporation	Golden, Colorado	A fire caused by a burst crankcase destroyed the compressor plant, six compressors, and a nearby storage building. Fire department kept the blaze from spreading.	0	0
S44	10/30/72	Marion Mine Sweeney Mining & Milling Corporation	Boulder, Colorado	A fire of undetermined origin destroyed a wooden building and its contents. Fire department extinguished the blaze with water.	0	0
S45	12/17/72	Guion Mine & Plant Silica Products Co., Inc.	Guion, Arkansas	A fire of undetermined origin occurred at the surface propane storage tank. One man was hospitalized due to over-exertion.	0	1
S46	01/06/73	Groveland Mine Hanna Mining Company	Randville, Michigan	A flash fire on an off-the-road haulage truck occurred when a pressurized hydraulic hose or fitting broke, spraying fluid over the engine. The driver received burns and fractured both heels.	0	1
S47	02/16/73	Fayetteville Quarry & Mill Deitz Hill Development Company	Fayetteville, Missouri	A powderman was killed when the several suits of clothes he was wearing caught fire and burned. He had built a fire in a grease pail for warmth.	1	0
S48	03/13/73	R.T.P. Crushing & Screening Plant Ready-To-Pour Concrete Company	Ontario, Oregon	A mechanic was injured when the wrench he was using on a truck contacted the battery cable, creating an arc which ignited his gasoline-soaked arm.	0	1

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Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
S49	03/29/73	New York Mine & Mill Georgia Marble Company	Marble Hill, Georgia	A fire of presumably electrical origin destroyed 80% of the surface plant. The fire eventually burned itself out.	0	0
S50	05/05/73	Avery Island Mine & Mill International Salt Company	Avery Island, Louisiana	A fire in the asphalt melting tank occurred due to a faulty thermostat setting which caused a build-up of heated gas.	0	0
S51	06/02/73	Bunker Hill Mine Bunker Hill Company	Kellogg, Idaho	A surface building and its contents were damaged when a fire broke out. The fire was shortly contained but, due to extensive damage, the cause could not be determined.	0	0
S52	08/17/73	Bunker Hill Mine Bunker Hill Company	Kellogg, Idaho	A fire of undetermined origin at the surface fuel storage area was quickly contained by the fire department. However, damage was extensive.	0	0
S53	01/03/74	Limestone Quarry & Mill Morrison & Weatherly Chemical Company	McGill, Nevada	An explosion and fire, caused by a ruptured pump reservoir, destroyed the pump shack before it was extinguished by two local fire departments.	0	0
S54	02/01/74	McCordsville Quarry & Mill Irving Materials, Inc.	McCordsville, Indiana	A welder was burned while he attempted to extinguish a fire caused by welding near flammable liquid. The shop and its contents were destroyed.	0	1

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Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
S55	02/09/74	Ozark Mine & Mill Ozark Lead Company	Sweetwater, Missouri	A fire resulting from a gas line leak and explosion damaged a storage building before it could be extinguished by mine personnel and a local fire department.	0	0
S56	03/03/74	Bingham Canyon Mine Kennecott Copper Corporation	Bingham Canyon, Utah	A welder was fatally injured when he attempted to thaw a lock on the door of an acetylene and oxygen storage cabinet with a lighted match.	1	0
S57	04/14/74	Park City Ventures Mine Park City Ventures	Park City, Utah	A fire of probable electrical origin destroyed all of the surface buildings except for the framing building and blacksmith shop. Snow was used to extinguish the blaze.	0	0
S58	05/09/74	Lyman-Richey Sand & Gravel Pit & Plant No. 2323 Lyman-Richey Sand & Gravel Corporation	Bridgeport, Nebraska	A dredge was set on fire when lightning struck it, destroying the dredge and combustible parts of equipment. Attempt to extinguish the fire was unsuccessful.	0	0
S59	07/29/74	Mattes Brothers Quarry & Mill Mattes Brothers Construction Company	Joplin, Missouri	An explosion and fire occurred when main power switch was energized due to overloaded circuit. Blaze brought under control by outside help.	0	0

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Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
S60	09/05/74	Northern Gravel Pit & Plant Northern Gravel Company	Muscataine, Iowa	All combustible material and electrical equipment, as well as a dredge, were destroyed by a fire. The cause could not be determined due to the extent of the damage.	0	0
S61	10/25/74	McGill Concentrator Kennecott Copper Corporation, Nevada Mines Division	McGill, Nevada	Discarded cigarette caused an explosion and fire of flammable material liberated in an open ditch during clean-up operations on a reagent tank.	0	3
S62	12/19/74	Coxey Quarry & Mill Pennsylvania Glass Sand Corporation	Dundee, Ohio	A mill operator was burned while attempting to thaw a cage crusher with the open flame from a bucket of burning oil.	1	0
S63	01/12/75	Taran Brothers Slate Quarry & Mill Taran Brothers, Inc.	Poultney, Vermont	Main mill building and its contents were completely destroyed, most likely by leaking gasoline being ignited by arc from the battery of a fork lift.	0	0
S64	02/25/75	Mt. Marion Pitt & Mill Hudson Valley Lightweight Aggregate Corp.	Mt. Marion, New York	A fire of undetermined origin destroyed the mine office and invaluable mine documents. Fire had cut phone line so miner had to drive to summon help.	0	0
S65	07/13/75	Henderson No. 3 Shaft Project	Empire, Colorado	A mechanic laid a burning torch against a fiberglass panel which caught fire and burned up to the top of the headframe before burning itself out.	0	0

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Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
S66	08/01/75	Caselton Mill Amalgamated Larder Mines Ltd.	Pioche, Nevada	Three persons sustained minor injuries when a fire, caused by welding operations on a rubber-lined hopper, required the help of the fire department to extinguish.	0	3
S67	09/25/75	Sacaton Unit Mine Asarco, Inc.	Casa Grande, Arizona	A truck driver was burned when his truck caught fire from a ruptured hydraulic line which issued fluid on the engine manifold. Dry chemical extinguishers were successfully used.	0	1
S68	01/31/76	E1 Paso Mill E1 Paso Gold Mines Inc.	Cripple Creek, Colorado	A fire of undetermined origin destroyed the mill and several other surface structures. Although unable to extinguish the blaze, the fire department did contain it.	0	0
S69	03/01/76	MacIntyre Development Mine & Mill N.L. Industries	Tahawus, New York	A fire of probable electrical origin destroyed the mixing plant and its contents. Due to the proximity of explosives, the fire was allowed to burn itself out.	0	0
S70	03/12/76	Lassenite Pit & Mill Lassenite Industries Inc.	Hallelujah Junction, California	A plantman was burned when gasoline ignited while he attempted to fill the fuel tank on a conveyor screen unit with the engine running.	0	1
S71	04/13/76	American Colloid Belle Fourche Mill American Colloid Company	Belle Fourche, South Dakota	A fire consumed the newly installed insulation on the walls and ceiling of the mill. Possibly caused by a flare-back from a burner igniting insulation.	0	0

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Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
S72	04/26/76	Hudson Mine & Mill Accidental Fire	Hudson, New York	A fire caused by hot sparks/slag from welding occurred in a paper bag storage area. Fire department extinguished the blaze.	0	0
S73	05/11/76	Griffin Mine Freeport Kaolin Company	Gordon, Georgia	A scraper operator was burned when a hydraulic hose pulled away from a motor fitting and sprayed fluid on the hot engine of the pan scraper he was operating.	0	1
S74	05/15/76	Toddsville No. 8 Plant Englehard Minerals & Chemical Corporation	McIntyre, Georgia	An electrical fire, caused by a short circuit of unknown origin, extensively damaged electrical equipment and wiring.	0	0
S75	06/01/76	M M Mine No. 6 Ozark-Mahoning Company	Cave-in-Rock, Illinois	A fire, caused by the malfunction of a discharge valve of a compressor, damaged the hoist, hoist ropes, and controls. Fire was successfully extinguished with water.	0	0
S76	08/02/76	Millertown "A" Mine & Mill General Shale Products	Sentertown Community, Tennessee	A laborer was burned when he tried to light a burner. Propane vapors had accumulated under a feeder vibrator adjacent to the burner due to gas hose not being secured.	0	1
S77	08/06/76	Cave-in-Rock Quarry & Mill Denny & Simpson Stone Company	Cave-in-Rock, Illinois	A truck engine compartment was damaged when a battery cable rubbed against and burned a hole in an oil line. Lime dust was used to extinguish the fire.	0	0

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Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
S78	10/17/76	Catskill Plant & Quarry Alpha Portland Cement Company	Cementon, New York	An electrical fire, probably caused by a phase loss on an incoming power line, extensively damaged electrical switchgear and wiring.	0	0
S79	10/23/76	Hunsaker Pit Hunsaker Sand & Gravel Company	Bingen, Washington	Fire occurred in a deep excavation, caused by ignition of fill by spontaneous combustion. Efforts to extinguish fire by removal of fill failed and, as of report, fire was still burning.	0	0
S80	12/22/76	Erie Mine Erie Mining Company	Hoyt Lakes, Minnesota	An electrical fire, caused by failure to insulate exposed terminals of a switch on a grader, was readily extinguished by the operator with a vehicle-mounted fire extinguisher.	0	0
S81	01/11/77	Peerless Mine & Mills Mississippi Lime Company	Ste. Genevieve, Missouri	An instrument technician was burned when the room he was working in ignited from the flammable mixture of natural gas. Pressurizing fan had been turned off due to cold weather.	0	1
S82	01/26/77	Tilden Mine - LMA 03 - Pellet Plant Cleveland Cliffs Iron Company	Ishpeming, Michigan	A fire occurred in the dryer section of the plant when ice diverted hot air from the dust collection system onto the feed chute. The fire was extinguished by the fire department.	0	0

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Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number	
					Killed	Injured
S83	02/01/77	Oley No. 2 Quarry & Mill Allentown Portland Cement Company	Oley, Pennsylvania	A fire caused by the ignition of vaporized fuel oil caused damage to a primary crusher control booth and associated electrical equipment.	0	0
S84	02/07/77	Mobile Refining Plant Aluminum Company of America	Mobile, Alabama	Two men received burns as they worked on a malfunctioning boiler. The primary cause of the fire was blocking open the upstream cutoff valve of the gas line.	0	2
S85	02/22/77	American Colloid Belle Fourche Mill American Colloid Company	Belle Fourche, South Dakota	A dryer operator was injured when he attempted to light the pilot of a dryer and it exploded. No company procedures for lighting dryers in effect at time of accident.	0	1
S86	04/07/77	Kelley Mine Complex The Anaconda Company	Butte, Montana	A fire of undetermined origin damaged the headframe of the Moose Shaft. The fire was extinguished by water and building bulkheads.	0	0
S87	04/16/77	Copper Cliff Mine Silver King Mines	Cuprum, Idaho	A section of the mill was destroyed by a fire, possibly caused by earlier welding/cutting operations. Water was used to extinguish the fire.	0	0
S88	04/20/77	Paga Mine & Mill Cyprus Mining Company	Cartersville, Georgia	A flash fire in the cab of a haulage truck, caused by a leak in a can of starter fluid being ignited by a discarded cigarette, seriously burned the operator.	0	1

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 Surface Mine Fires
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Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
S89	05/05/77	Williams Brothers Slate Quarry Williams Brothers Slate Company	Middle Granville, New York	The idle mill building was completely destroyed by a fire of undetermined origin. The fire department extinguished the fire with water.	0	0
S90	06/27/77	Kelley Mine Complex The Anaconda Company	Butte, Montana	A fire of undetermined origin occurred at the Original Shaft. An attempt to put the fire out with fire extinguishers was unsuccessful. Water was successfully used by the fire department.	0	0
S91	07/20/77	New York Mine Calcium Products Division of Georgia Marble	Marble Hill, Georgia	A fire in a refuse pile of an abandoned open pit quarry was extinguished by floating a raft across the fire site and directing dry chemical on the fire.	0	0
S92	07/29/77	Sunshine Mine & Mill Sunshine Mining Company	Kellogg, Idaho	An electrical fire at a disconnect switch, caused by a loose connection allowing arcing, was extinguished by cutting the power and using dry chemical extinguishers.	0	0
S93	08/21/77	Kelley Mine Complex The Anaconda Company	Butte, Montana	A fire of unknown origin destroyed the engine hoist room of the inactive Green Mountain Shaft. The fire department extinguished the fire using water.	0	0

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 Surface Mine Fires
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Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
S94	10/14/77	Oro Grande Pit & Mill Amcord, Inc.	Oro Grande, California	A fire in the coal transfer tunnel destroyed part of a conveyor belt and some rollers when an employee mistakenly dumped coal into the coal hopper and onto the conveyor belt instead of onto the coal stockpile.	0	0
S95	12/22/77	St. Charles Quarry & Mill St. Charles Quarry Company	St. Charles, Missouri	A garage and its contents were totally destroyed by a fire, probably caused by accumulations of oil and grease being ignited by a spark.	0	0
S96	01/20/78	Jersey Miniere/South Carthage Service Shaft Jersey Miniere Zinc Company	Gordonsville, Tennessee	The entire frame building which served as an office and storage room was destroyed by a fire of undetermined origin.	0	0
S97	02/09/78	Fred Weber North Quarry & Mill Fred Weber, Inc., Materials Division	Bridgeton, Missouri	A maintenance man was burned when he attempted to fill a salamander heater with diesel fuel. He claimed the heater was not burning while he was fueling it.	0	1
S98	02/17/78	Climax Open Pit Climax Molybdenum Company	Climax, Colorado	Welding near combustibles resulted in a fire which destroyed the bulk slurry plant, two pump trucks, and two trailers. The fire was allowed to burn out.	0	0
S99	03/20/78	U.S. Antimony Mill U.S. Antimony Corporation	Thompson Falls, Montana	A mill foreman was fatally burned when he attempted to light a cigarette in an area with a high concentration of oxygen.	1	0

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Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
S100	05/24/78	Oakfield Quarry Eden Stone Company, Inc.	Oakfield, Wisconsin	As one employee demonstrated a grinding procedure to another, black powder was ignited by sparks from the grinding wheel and both men were burned, one fatally.	1	1
S101	07/20/78	Independence Quarry & Mill Universal Atlas Cement Company	Independence, Kansas	A fire of undetermined electrical origin damaged the storage facilities and was successfully extinguished with water by the fire department.	0	0
S102	10/21/78	Bonneville Plant Kaiser Aluminum & Chemical Corporation	Wendover, Utah	The mill building and its contents were completely destroyed by a suspected arson fire while the plant was idle. The fire department concentrated on controlling the fire.	0	0
S103	11/03/78	Silver Bay Plant Reserve Bay Mining Company	Silver Bay, Minnesota	A fire caused by worn bearings in the booster fan completely burned the fluid ionies stack. The company fire department extinguished the blaze with water.	0	0
S104	11/10/78	Iron Mountain Trap Rock Mill Iron Mountain Trap Rock Company	Iron Mountain, Missouri	A fire of undetermined origin destroyed the mill buildings and a considerable amount of milling equipment. Fire was fought with hauled-in water due to power outage.	0	0

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Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
S105	01/11/79	Elmwood No. 1 Mill Jersey-Miniere Zinc Company	Elmwood, Tennessee	A man was fatally burned when his clothing caught fire as he tried to get warm over a diesel fuel burning container. Earlier he had spilled some fuel on his clothing and this ignited.	1	0
S106	01/20/79	Weeks Island Mine & Mill Morton Salt Company	New Iberia, Louisiana	The changehouse was destroyed by a fire caused by placing a heater next to combustibles. The fire department prevented the fire from spreading to other buildings.	0	0
S107	02/15/79	Cyprus Mill Cyprus Mines Corporation	Fernley, Nevada	The failure of an air/oil separator filter on an air compressor resulted in a heat build-up and internal ignition. The fire destroyed the bagger warehouse of the mill.	0	0
S108	03/26/79	Quarry & Sand Plant No. 3 Cumberland Cement & Supply Company	Corriganville, Maryland	Hot sparks/slag set a welder's clothes on fire, burning him and his co-worker who tried to extinguish the fire.	0	2
S109	04/07/79	Trixie Mine Kennecott Copper Corporation	Eureka, Utah	A fire of undetermined origin destroyed the insulation on electrical wires in a small area of the hoist room. The fire was extinguished with CO ₂ extinguishers.	0	0

Meta1/Nonmeta1 Mines
Surface Mine Fires

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Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
S110	04/23/79	Lancaster Quarry & Plant Lancaster Stone Products Corporation	Clarence, New York	A fire and resultant explosion injured nine men and extensively damaged the plant facilities and surrounding area. The fire was caused by friction heat transfer from overloading a truck.	0	9
S111	05/03/79	Barry Plant No. 8 Dredge & Mill Missouri Gravel Company	Barry, ILLINOIS	The mine shop was destroyed and a maintenance superintendent injured when a can of paint thinner exploded, igniting the area he was in.	0	1
S112	05/08/79	Plant No. 4 Quarry & Mill Penn-Dixie Industries, Inc.	West Nazareth, Pennsylvania	A short circuit of unspecified origin caused an explosion and resultant fire in a substation and was extinguished by the local fire department.	0	0
S113	05/29/79	South Central Avenue Plant Union Rock & Materials Corporation	Phoenix, Arizona	A front-end loader operator was seriously burned when hydraulic fluid from a ruptured hose sprayed him and then ignited.	0	1
S114	05/29/79	Sugar Creek Quarry & Mill Missouri Portland Cement Company	Sugar Creek, Missouri	A fire caused by friction in a compressor when an end-bearing failed extensively damaged the compressor and compressor house. Fire was extinguished with water.	0	0
S115	06/11/79	Cotter Mill Cotter Corporation	Canon, Colorado	A fuel truck was completely destroyed by a fire of undetermined origin. No attempt was made to extinguish the fire.	0	0

Metal/Nonmetal Mines

Surface Mine Fires

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Incident Number	Date	Mine Name and/or Owner/Operator	Location	Fire Description	Number Killed	Number Injured
S116	08/30/79	Minntac Mine U.S. Steel Corporation	Mountain Iron, Minnesota	A fire of undetermined origin damaged a haulage truck and injured two operators as a result of leaking fuel on the hot manifold.	0	2
S117	09/26/79	Silver Bay Division Reserve Mining Company	Babbitt, Minnesota	A fire caused by using a welding torch in close proximity to flammable substances damaged the lining and impeller of a pump.	0	0
S118	11/20/79	Kingsford Mine & Mill International Minerals & Chemical Corporation	Bradley Junction, Florida	An explosion and fire killed one man and injured another seriously when an employee used a cutting torch on a fuel oil storage tank.	1	1
S119	12/19/79	Thunderbird Mine Eveleth Mines, Inc.	Eveleth, Minnesota	A fire occurred when a pot heater, fed by two propane tanks, was left in a construction area to keep newly poured concrete from freezing.	0	0
S120	01/07/80	Minntac Mine U.S. Steel, Inc. Minnesota Ore Division	Mountain Iron, Minnesota	A tire and engine compartment of a haulage truck were damaged when the power steering hose ruptured onto the exhaust pipe.	0	0
S121	02/11/80	Swartzwalder Mine Cotter Corporation	Golden, Colorado	A fire of undetermined origin in the No. 1 compressor caused damage to electrical switches and wiring. No injuries were reported.	0	0

4.0 INDEXES

This section contains indexes to assist the reader in locating fire incident reports of interest. Numbers in the bodies of Indexes 1 through 13 refer to fire incident report forms in Part I of the Appendix. Fire incident numbers prefixed by a "U" refer to underground fires and those prefixed by an "S" refer to surface fires. Numbers in the body of Index 15a and prefixed "UN" refer to underground non-reportable fires in Part III of the Appendix. Numbers in Index 15b and prefixed "SN" refer to surface non-reportable fires in Part III of the Appendix.

Indexes are listed on the following page, along with a page index system. The page edge index system is used to assist the reader in locating desired fire incident numbers quickly. To locate a desired section of the table, curl the report edge down to uncover the page edge mark in line with the desired index number.

- 1a Alphabetical Index of Underground Fire Names
- 1b Alphabetical Index of Surface Fire Names
- 2 List of Fire Incident Numbers by Year of Occurrence
- 3a Underground Fires by Ignition Source and Year
- 3b Surface Fires by Ignition Source and Year
- 3c Cross Tabulations of Underground Fire Ignition Sources
- 4a Underground Fires by Burning Substance and Year
- 4b Surface Fires by Burning Substance and Year
- 5a Underground Fires by Location and Year
- 5b Surface Fires by Location and Year
- 6a Underground Fires by Duration and Year
- 6b Surface Fires by Duration and Year
- 6c Cross Tabulations of Underground Fire Durations
- 7a Underground Fires by Number of Injuries and Year
- 7b Surface Fires by Number of Injuries and Year
- 7c Cross Tabulations of Underground Injury Fires
- 7d Cross Tabulations of Underground Injury Fires by Stench Warning Use
- 8a Underground Fires by Number of Fatalities and Year
- 8b Surface Fires by Number of Fatalities and Year
- 8c Cross Tabulations of Underground Fatal Fires
- 8d Cross Tabulations of Underground Fatal Fires by Stench Warning Use
- 9a Underground Fires by Detection and Year
- 9b Surface Fires by Detection and Year
- 10a Underground Fires by Equipment Involved and Year
- 10b Surface Fires by Equipment Involved and Year
- 11a Underground Fires by State and Year
- 11b Surface Fires by State and Year
- 12a Underground Fires by Ore Won and Year
- 12b Surface Fires by Ore Won and Year
- 13a Underground Fires by Successful Extinguishing Agent and Year
- 13b Surface Fires by Successful Extinguishing Agent and Year
- 14 Fire Incident Number by Journal Article Number
- 15a Non-Reportable Underground Fires Item Tabulation
- 15b Non-Reportable Surface Fires Item Tabulation



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INDEX OF UNDERGROUND FIRES
ALPHABETIZED BY MINE NAME

<u>NAME</u>	<u>DATE</u>	<u>LOCATION</u>	<u>INCIDENT NUMBER</u>
Alchem Trona Mine Allied Chemical Corp.	06/03/77	Green River, Wyoming	U142
Belle Isle Salt Mine Cargill, Inc.	03/05/68	Franklin, Louisiana	U62
Belle Isle Salt Mine Cargill, Inc.	01/09/79	Franklin, Louisiana	U170
Belle Isle Salt Mine Cargill, Inc.	02/02/79	Franklin, Louisiana	U172
Beyer Mine and Mill Louis Marino, Inc.	01/22/78	Kansas City, Missouri	U155
Blackstone Mine American Zinc, Lead & Smelting Company	01/29/64	Shullsburg, Wisconsin	U52
Black Jack No. 1 Mine Lance Corporation	05/21/60	Thoreau, New Mexico	U44
Brushy Creek Mine & Mill St. Joe Minerals Corp.	04/08/75	Bunker, Missouri	U125
Buck Mine Verona Mining Company	07/21/59	Caspian, Michigan	U40
Buick Mine & Mill Amax Lead Co. of Missouri	02/11/76	Boss, Missouri	U133
Bunker Hill Mine Bunker Hill Company	05/13/68	Kellogg, Idaho	U62
Bunker Hill Mine Bunker Hill Company	08/02/70	Kellogg, Idaho	U68
Bunker Hill Mine Bunker Hill Company	06/11/74	Kellogg, Idaho	U115
Bunker Hill Mine Bunker Hill Company	02/19/76	Kellogg, Idaho	U134
Bunker Hill Mine Bunker Hill Company	10/01/76	Kellogg, Idaho	U139

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INDEX OF UNDERGROUND FIRES
ALPHABETIZED BY MINE NAME

<u>NAME</u>	<u>DATE</u>	<u>LOCATION</u>	<u>INCIDENT NUMBER</u>
Bunker Hill Mine Bunker Hill Company	06/28/78	Kellogg, Idaho	U162
Bunker Hill Mine Bunker Hill Company	11/15/79	Kellogg, Idaho	U174
Burgin Mine & Mill Kennecott Copper Corp.	10/11/72	Eureka, Utah	U83
Burro Mines No. 5 Union Carbide Nuclear Company	05/08/63	Slick Rock, Colorado	U50
Cabin Creek Mine Dravo Lime Company	04/16/77	Maysville, Kentucky	U141
Campbell Mine Phelps-Dodge Corp.	11/12/74	Bisbee, Arizona	U122
Campbell Mine Phelps-Dodge Crop.	06/02/75	Bisbee, Arizona	U129
Carlyle Clay Mine Carlyle Tile Company	03/22/67	Coal Grove, Ohio	U60
Cary Mine Idanah Iron Company	06/18/51	Hurley, Wisconsin	U4
Cayuga Mine and Mill Cargill, Inc.	10/07/75	Myers, New York	U131
Cayuga Mine and Mill Cargill, Inc.	06/23/77	South Lansing, New York	U144
Cayuga Mine and Mill Cargill, Inc.	03/28/78	South Lansing, New York	U160
Cherokee Mine Cities Service Co.	01/06/78	Copperhill, Tennessee	U154
Climax Mine Climax Molybdenum Co.	07/08/64	Climax, Colorado	U54
Climax Mine Climax Molybdenum Co.	09/30/77	Climax, Colorado	U148

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ALPHABETIZED BY MINE NAME

<u>NAME</u>	<u>DATE</u>	<u>LOCATION</u>	<u>INCIDENT NUMBER</u>
Climax Mine Climax Molybdenum Co.	08/08/78	Climax, Colorado	U163
Climax Mine Climax Molybdenum Co.	10/11/78	Climax, Colorado	U165
Continental No. 2 Mine U.V. Industries, Inc.	04/13/73	Fierro, New Mexico	U94
Copper Canyon Mine Copper Canyon Mining Co.	06/05/50	Battle Mountain, Nevada	U1
Copper Queen Mine Phelps-Dodge Corp.	09/08/59	Bisbee, Arizona	U41
Cordero Mine Cordero Mining Co.	09/24/65	McDermitt, Nevada	U57
Crescent Mine Bunker Hill Company	06/10/74	Kellogg, Idaho	U114
Crescent Mine Bunker Hill Company	03/25/79	Kellogg, Idaho	U173
Dando Works Mine H.K. Porter Co. Inc.	11/29/55	Beaver, Pennsylvania	U17
Dragon Underground Mine The Anaconda Company	09/09/71	Eureka, Utah	U74
Eagle Mine New Jersey Zinc Co.	05/05/73	Gilman, Colorado	U96
Eagle Mine New Jersey Zinc Co.	10/03/77	Gilman, Colorado	U149
Federal Shaft No. 17 St. Joseph Lead Co.	05/26/56	Flat River, Missouri	U21
Federal Division No. 10 St. Joe Minerals Corp.	07/20/72	Bonne Terre, Missouri	U80
Galena Mine Callahan Mining Co.	07/16/71	Wallace, Idaho	U72

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ALPHABETIZED BY MINE NAME

<u>NAME</u>	<u>DATE</u>	<u>LOCATION</u>	<u>INCIDENT NUMBER</u>
Godfrey Mine Snyder Mining Co.	11/26/57	Hibbing, Minnesota	U34
Godfrey Mine Snyder Mining Co.	12/16/59	Chislm, Minnesota	U43
Golden Queen Mine Dr. L.O. Schultz	11/12/61	Mojave, California	U48
Gordonsville Project Jersey Miniere Zinc Co.	04/19/78	Gordonsville, Tennessee	U161
Gossan Mine Allied Chemical & Dye Corp.	11/10/51	Galax, Virginia	U5
Grace Mine Bethlehem Mines Corp.	07/16/74	Morgantown, Pennsylvania	U117
Grace Mine Bethlehem Mines Corp.	06/22/76	Morgantown, Pennsylvania	U137
Grand Saline Mine Morton Salt Company	11/17/72	Grand Saline, Texas	U85
Greenwood Mine Inland Steel Co.	06/04/57	Inshpeming, Michigan	U30
Hardin Run Clay Mine & Mill Crescent Brick Co.	09/17/74	New Cumberland, West Virginia	U121
Henderson Mine American Metals Climax, Inc.	01/02/73	Empire, Colorado	U87
Henderson Mine American Metals Climax, Inc.	04/26/74	Empire, Colorado	U111
Henderson Mine American Metals Climax, Inc.	05/01/74	Empire, Colorado	U112
Henderson Mine merican Metals Climax, nc.	01/10/75	Empire, Colorado	U123

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ALPHABETIZED BY MINE NAME

<u>NAME</u>	<u>DATE</u>	<u>LOCATION</u>	<u>INCIDENT NUMBER</u>
Henderson Mine Climax Molybdenum Co.	07/30/77	Empire, Colorado	U145
Hillside Mine Hillside Mining & Milling Company	07/04/54	Bagdad, Arizona	U14
Homestake Mine Homestake Mining Co.	02/13/65	Lead, South Dakota	U56
Homestake Mine Homestake Mining Co.	12/30/72	Lead, South Dakota	U86
Homestake Mine Homestake Mining Co.	05/09/75	Lead, South Dakota	U127
Homestake Mine Homestake Mining Co.	04/01/76	Lead, South Dakota	U135
Hormet Mine Mountain Copper Co., Ltd.	05/23/55	Matheson, California	U15
Humboldt Mine Nevada-Massachusetts Company	02/25/57	Tungsten, Nevada	U28
Incline Mine No. 1 American Gilsonite Co.	11/05/53	Bonanza, Utah	U11
Inspiration Live Oak Division Inspiration Copper Co.	06/23/52	Inspiration, Arizona	U8
Jefferson Island Salt Mine Diamond Crystal Salt Co.	06/20/72	Jefferson Island, Louisiana	U78
Jefferson Island Salt Mine Diamond Crystal Salt Co.	09/24/72	Jefferson Island, Louisiana	U82
Jefferson Island Salt Mine Diamond Crystal Salt Co.	07/20/74	Jefferson Island, Louisiana	U118

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ALPHABETIZED BY MINE NAME

<u>NAME</u>	<u>DATE</u>	<u>LOCATION</u>	<u>INCIDENT NUMBER</u>
Kerr-McGee Potash Division Mine Kerr-McGee Corp.	07/10/72	Carlsbad, New Mexico	U79
Lakeshore Mine Hecla Mining Company	11/27/70	Casa Grande, Arizona	U69
Lakeshore Mine El Paso Natural Gas Co.	08/17/73	Casa Grande, Arizona	U99
Leonard Mine The Anaconda Company	11/02/73	Butte, Montana	U103
Leonard Mine The Anaconda Company	09/12/74	Butte, Montana	U120
Lion No. 1 Mine United States Smelting, Refining & Mining Co.	12/53	Silver City, New Mexico	U12
Lisbon Mine Rio Algom Corp.	04/23/73	La Sal, Utah	U95
Logan Wash Mine Occidental Oil Shale, Inc.	08/08/78	Kellogg, Idaho	U164
Magma Mine Magma Copper Company	11/20/51	Superior, Arizona	U6
Magma Mine Magma Copper Company	12/02/61	Superior, Arizona	U49
Magma Mine Magma Copper Company	05/26/72	Superior, Arizona	U77
Magma Mine No. 9 Magma Copper Company	03/22/73	Superior, Arizona	U93
Magma Mine Superior Div. Magma Copper Company	01/24/78	Superior, Arizona	U156
Mather Mine, B Shaft Negaunee Mine Company	08/56	Negaunee, Michigan	U22
Mather Mine Leveland Cliffs Iron Co.	01/29/73	Negaunee, Michigan	U89

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ALPHABETIZED BY MINE NAME

<u>NAME</u>	<u>DATE</u>	<u>LOCATION</u>	<u>INCIDENT NUMBER</u>
Mather Mine Cleveland Cliffs Iron Co.	01/30/73	Negaunee, Michigan	U90
Mather Mine Negaunee Mining Co.	02/05/75	Negaunee, Michigan	U124
Mather Mine Negaunee Mining Co.	09/30/75	Negaunee, Michigan	U130
Minerva No. 1 Mine Minerva Oil Company	01/31/74	Cave-in-Rock, Illinois	U109
Montevallo Mine Allied Products Co.	09/20/77	Montevallo, Alabama	U147
Montreal Mine Montreal Mining Co.	05/27/55	Montreal, Wisconsin	U16
Montreal Mine Montreal Mining Co.	02/06/57	Montreal, Wisconsin	U26
Montreal Mine Montreal Mining Co.	05/08/57	Montreal, Wisconsin	U29
Montreal Mine Oglebay Norton Co.	03/31/58	Montreal, Wisconsin	U35
Morris Mine Inland Steel Co.	11/18/58	Ishpeming, Michigan	U36
Newport Mine Mauthe Mining Co.	01/27/59	Ironwood, Michigan	U37
Newport Mine Mauthe Mining Co.	02/03/59	Ironwood, Michigan	U38
New Idria Mine New Idria Mining & Chemical Company	10/27/66	Idria, California	U59
Nil Mine Union Carbide Corp.	06/30/70	Uravan, Colorado	U67
No. 1 Mine Central Rock Mine	11/29/73	Lexington, Kentucky	U105

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ALPHABETIZED BY MINE NAME

<u>NAME</u>	<u>DATE</u>	<u>LOCATION</u>	<u>INCIDENT NUMBER</u>
No. 5 Mine Georgia Marble Co.	01/31/78	Whitestone, Georgia	U158
Ontario Adit, United Park City Mines United Park City Co.	10/23/64	Keetley, Utah	U55
Original Sixteen-to- One Mine Original Sixteen-to- One Corporation	01/22/54	Alleghany, California	U13
Ozark Mine & Mill Ozark Lead Company	06/10/77	Sweetwater, Missouri	U143
Ozark Mine & Mill Ozark Lead Company	12/16/78	Sweetwater, Missouri	U169
Pea Ridge Mine Meramec Mining Co.	05/15/72	Sullivan, Missouri	U76
Penokee Mine North Range Mining Co.	02/19/57	Ironwood, Michigan	U27
Pere-Marquette Cement Co.	11/14/60	Oglesby, Illinois	U45
Peterson Mine Pickands Mather and Company	03/24/56	Bessemer, Michigan	U19
Peterson Mine Pickands Mather and Company	10/29/56	Bessemer, Michigan	U23
Phillipson Level Mine Climax Molybdenum Co.	08/17/71	Climax, Colorado	U73
Pilot Knob Mine Pilot Knob Pellet Co.	12/04/75	Pilot Knob, Missouri	U132
Pioneer Mine U.S. Steel Corp.	01/09/51	Ely, Minnesota	U2

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ALPHABETIZED BY MINE NAME

<u>NAME</u>	<u>DATE</u>	<u>LOCATION</u>	<u>INCIDENT NUMBER</u>
Pioneer Mine U.S. Steel Corp.	07/16/57	Ely, Minnesota	U31
Pleasant Gap Mine Standard Lime & Refractories, Inc.	04/17/70	Pleasant Gap, Pennsylvania	U66
Pleasant Gap Mine Marblehead Lime Co.	08/26/77	Pleasant Gap, Pennsylvania	U146
Potash Mine Southwest Potash Corp.	05/04/56	Carlsbad, New Mexico	U20
Project No. 74 Continental Oil Co.	01/25/78	Kaycee, Wyoming	U157
Quincy Mine Quincy Mining Co.	11/11/61	Hancock, Michigan	U47
Ray No. 2 Mine Kennecott Copper Corp.	07/10/52	Ray, Arizona	U9
Reserve Mine Western Nuclear, Inc.	04/05/76	Jeffrey City, Wyoming	U136
Retsof Mine International Salt Co.	02/21/73	Retsof, New York	U92
Retsof Mine International Salt Co.	12/08/77	Retsof, New York	U153
Richard Iron Ore Mine Shahmoon Industries, Inc.	10/10/66	Wharton, New Jersey	U58
San Manuel Mine Magma Copper Company	10/30/73	San Manuel, Arizona	U102
San Manuel Mine Magma Copper Company	02/18/74	San Manuel, Arizona	U110
San Manuel Mine Magma Copper Company	10/18/76	San Manuel, Arizona	U140
Section 17 Mine Kerr-McGee Corporation	12/22/68	Ambrosia Lake, New Mexico	U65

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ALPHABETIZED BY MINE NAME

<u>NAME</u>	<u>DATE</u>	<u>LOCATION</u>	<u>INCIDENT NUMBER</u>
Section 30 Mine Kerr-McGee Corporation	10/06/77	Ambrosia Lake, New Mexico	U150
Shattuck Mine Shattuck Denn Mining Co.	06/52	Bisbee, Arizona	U7
Sherwood Mine Inland Steel Company	06/01/59	Iron River, Michigan	U39
Sherwood Mine Inland Steel Company	05/27/74	Iron River, Michigan	U113
Silver Dollar Mine Silver Dollar Mining Co.	08/27/76	Osburn, Idaho	U138
Star Mine Hecla Mining Company	01/20/71	Burke, Idaho	U70
Sterling Mine New Jersey Zinc Co.	11/07/72	Odgensburg, New Jersey	U84
Steward Mine The Anaconda Company	09/24/73	Butte, Montana	U101
Sugar Creek Underground Garage & Storage Missouri Portlant Cement Company	05/30/75	Sugar Creek, Missouri	U128
Sunday Lake Mine Sunday Lake Iron Co.	04/19/51	Wakefield, Michigan	U3
Sunday Lake Mine Sunday Lake Iron Co.	01/04/57	Wakefield, Michigan	U25
Sunday Lake Mine Sunday Lake Iron Co.	11/17/59	Wakefield, Michigan	U42
Sunshine Mine Sunshine Mining Co.	07/06/67	Kellogg, Idaho	U61
Sunshine Mine Sunshine Mining Co.	04/22/71	Kellogg, Idaho	U71
Sunshine Mine Sunshine Mining Co.	05/02/72	Kellogg, Idaho	U75

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ALPHABETIZED BY MINE NAME

<u>NAME</u>	<u>DATE</u>	<u>LOCATION</u>	<u>INCIDENT NUMBER</u>
Sunshine Mine Sunshine Mining Co.	01/10/73	Kellogg, Idaho	U88
Sunshine Mine Sunshine Mining Co.	02/08/73	Kellogg, Idaho	U91
Sunshine Mine Sunshine Mining Co.	06/08/73	Kellogg, Idaho	U98
Sunshine Mine Sunshine Mining Co.	12/07/73	Kellogg, Idaho	U106
Sunshine Mine Sunshine Mining Co.	11/23/77	Kellogg, Idaho	U151
Sunshine Mine Sunshine Mining Co.	11/20/77	Kellogg, Idaho	U152
Sunshine Mine Sunshine Mining Co.	02/22/78	Kellogg, Idaho	U159
Tom Reed Mine American Investment Co	12/19/68	Oatman, Arizona	U64
Tracy Mine Jones and Laughlin Steel Corporation	11/02/56	Negaunee, Michigan	U24
U.S.B.M. No. 1 Shaft U.S. Government	12/06/78	Meeker, Colorado	U167
United Verde Mine Phelps Dodge Corp.	05/53	Jerome, Arizona	U10
Water Lilly Mine Kennecott Copper Corp.	01/19/79	Dividend, Utah	U171
Weeks Island Mine Morton Salt Company	08/21/73	Weeks Island, Louisiana	U100
Weeks Island Mine Morton Salt Company	05/05/75	New Iberia, Louisiana	U126
Weeks Island Storage Complex Cavo Corporation	12/13/78	Weeks Island, Louisiana	U168

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ALPHABETIZED BY MINE NAME

<u>NAME</u>	<u>DATE</u>	<u>LOCATION</u>	<u>INCIDENT NUMBER</u>
Westvaco (Trona) Mine Intermountain Chemical Company	12/05/60	Green River, Wyoming	U46
White Pine Mine White Pine Copper Co.	07/17/57	White Pine, Michigan	U32
White Pine Mine White Pine Copper Co.	07/30/57	White Pine, Michigan	U33
White Pine Mine White Pine Copper Co.	08/15/63	White Pine, Michigan	U51
White Pine Mine White Pine Copper Co.	05/12/64	White Pine, Michigan	U53
White Pine Area No. 1 White Pine Copper Co.	08/16/72	White Pine, Michigan	U81
White Pine Area No. 2 White Pine Copper Co.	06/16/74	White Pine, Michigan	U116
White Pine Area No. 2 White Pine Copper Co.	12/11/73	White Pine, Michigan	U107
White Pine Area No. 3 White Pine Copper Co.	05/17/73 05/17/73	White Pine, Michigan	U97
White Pine Area No. 3 White Pine Copper Co.	11/08/73	White Pine, Michigan	U104
White Pine Area No. 3 White Pine Copper Co.	01/13/74	White Pine, Michigan	U108
White Pine Area No. 3 White Pine Copper Co.	07/25/74	White Pine, Michigan	U119
Young Mine Asarco, Inc.	10/16/78	Strawberry Plains, Tennessee	U166
Zenith Mine Vermilion Mining Co.	12/16/55	Ely, Minnesota	U18

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INDEX OF SURFACE FIRES
ALPHABETIZED BY MINE NAME

<u>NAME</u>	<u>DATE</u>	<u>LOCATION</u>	<u>INCIDENT NUMBER</u>
Abbott Mine California Quicksilver Mines, Inc.	08/10/58	Williams, Calif.	S7
Albany Mine Pittsburgh Pacific Co.	07/22/62	Hibbing, Minnesota	S15
American Colloid Belle Fourche Mill American Colloid Company	04/13/77	Belle Fourche, S. Dakota	S71
American Colloid Belle Fourche Mill American Colloid Company	02/22/77	Belle Fourche, S. Dakota	S85
Aurora Mine North Range Mining Co.	07/10/62	Ironwood, Michigan	S14
Avery Island Mine and Mill International Salt Co.	05/05/73	Avery Island, Louisiana	S50
Babbit Mine U.S. Antimony Corporation	12/31/71	Thompson Falls, Montana	S39
Barry Plant No. 8 Dredge and Mill Missouri Gravel Company	05/03/79	Barry, Illinois	S111
Bell Compressor Plant The Anaconda Company	07/07/62	Butte, Montana	S13
Benson Mines N.Y. Ore Division Jones & Laughlin Steel Corporation	07/24/61	Star Lake, New York	S11
Bingham Canyon Mine Kennecott Copper Corp.	02/09/74	Bingham Canyon, Utah	S56
Bonneville Plant Kaiser Aluminum and Chemical Corporation	10/21/78	Wendover, Utah	S102

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ALPHABETIZED BY MINE NAME

<u>NAME</u>	<u>DATE</u>	<u>LOCATION</u>	<u>INCIDENT NUMBER</u>
Bunker Hill Mine Bunker Hill Company	06/02/73	Kellogg, Idaho	S51
Bunker Hill Mine Bunker Hill Company	08/17/73	Kellogg, Idaho	S52
Capitol Cement Division Capitol Aggregates, Inc.	07/31/67	San Antonio, Texas	S23
Caselton Mill Amalgamated Larder Mines Ltd.	08/01/75	Pioche, Nevada	S66
Catskill Plant & Quarry Alpha Portland Cement Company	10/17/76	Cementon, New York	S78
Cave-in-Rock Quarry and Mill Denny and Simpson Stone Company	08/06/76	Cave-in-Rock, Illinois	S77
Champion Mine North Range Mining Company	02/04/56	Champion, Michigan	S3
Climax Open Pit Climax Molybdenum Co.	02/17/78	Climax, Colorado	S98
Coeur D'Alene Mine Coeur D'Alene Mines, Inc.	05/12/70	Osburn, Idaho	S35
Copper Cliff Mine Silver King Mines	04/16/77	Cuprum, Idaho	S87
Cotter Mill Cotter Corporation	06/11/79	Canon, Colorado	S115
Coxey Quarry & Mill Pennsylvania Glass Sand Corporation	12/19/74	Dundee, Ohio	S62
Cyprus Mill Cyprus Mines Corporation	02/15/79	Fernley, Nevada	S107

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ALPHABETIZED BY MINE NAME

<u>NAME</u>	<u>DATE</u>	<u>LOCATION</u>	<u>INCIDENT NUMBER</u>
Diamond Hill Quarry Florida Rock Products Corporation	01/15/64	Brooksville, Florida	S20
El Paso Mill El Paso Gold Mines, Inc.	01/31/76	Cripple Creek, Colorado	S68
Elbern Mine Haley-Young Mining Company	11/28/61	Chisom, Minnesota	S12
Elmwood No. 1 Mill Jersey-Miniere Zinc Company	01/11/79	Elmwood, Tennessee	S105
Embarrass Mine Pickands Mather & Company	01/30/61	Biwabik, Minnesota	S10
Erie Mine Erie Mining Company	12/22/76	Hoyt Lakes, Minnesota	S80
Fayetteville Quarry & Mill Deitz Hill Development Company	02/16/73	Fayetteville, Missouri	S47
Feldspar Mill International Minerals and Chemicals Corp.	01/16/57	Keystone, S. Dakota	S6
Fred Weber North Quarry and Mill Fred Weber, Inc.	02/09/78	Bridgeton, Missouri	S97
Gordy Plant Gordy Salt Company, Inc.	08/08/67	Breaux Bridge, Louisiana	S24

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<u>NAME</u>	<u>DATE</u>	<u>LOCATION</u>	<u>INCIDENT NUMBER</u>
Graham Mill Eagle-Pitcher Industries	05/14/68	Galena, Illinois	S25
Gresham Quarry Nello L. Teer Co.	06/06/67	Raleigh, N. Carolina	S22
Griffin Mine Freeport Kaolin Co.	05/11/76	Gordon, Georgia	S73
Groveland Mine Hanna Mining Company	01/06/73	Randville, Michigan	S46
Guion Mine and Plant Silica Products Co., Inc.	12/17/72	Guion, Arkansas	S45
Henderson No. 3 Shaft Harrison West Corp.	07/13/75	Empire, Colorado	S65
Hudson Mine and Mill Universal Atlas Cement	04/26/76	Hudson, New York	S72
Hunsaker Pit Hunsaker Sand and Gravel Company	10/23/76	Bingen, Washington	S79
Huron Portland Cement Plant	07/19/63		
Huron Portland Cement Company	07/19/63	Superior, Wisconsin	S19
Independence Quarry and Mill Universal Atlas Cement	07/20/78	Independence, Kansas	S101
Iron Mountain Trap Rock Mill Iron Mountain Trap Rock Company	11/10/78	Iron Mountain, Missouri	S104

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ALPHABETIZED BY MINE NAME

<u>NAME</u>	<u>DATE</u>	<u>LOCATION</u>	<u>INCIDENT NUMBER</u>
Jersey Miniere South Carthade Service Shaft Jersey Miniere Zinc Co.	01/20/78	Gordonsville, Tennessee	S96
Julia Mill Pittsburgh Pacific Co.	08/27/70	Virginia, Minnesota	S36
Kelley Mine Complex Green Mountain Shaft The Anaconda Company	08/21/77	Butte, Montana	S93
Kelley Mine Complex Moose Shaft The Anaconda Company	04/07/77	Butte, Montana	S86
Kelley Mine Complex Original Shaft	06/27/77	Butte, Montana	S90
Kingsford Mine and Mill International Minerals and Chemical Corporation	11/20/79	Bradley Junction, Florida	S118
Lancaster Quarry & Plant Lancaster Stone Products Corporation	04/23/79	Clarence, New York	S110
Lassenite Pit and Mill Lassentie Industries Inc.	03/12/76	Hallelujah Junction, California	S70
Limestone Quarry & Mill Morrison and Weatherly Chemical Company	01/03/74	McGill, Nevada	S53
Longyear Mine Jones and Laughlin Steel Corporation	11/09/62	Kitsville, Minnesota	S16
Lyman-Richey Sand and Gravel Pit and Plant No. 2323 Lyman-Richey Sand and Gravel Corporation	05/09/74	Bridgeport, Nebraska	S58

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INDEX OF SURFACE FIRES
ALPHABETIZED BY MINE NAME

<u>NAME</u>	<u>DATE</u>	<u>LOCATION</u>	<u>INCIDENT NUMBER</u>
M M Mine #6 Ozark-Mahoning Co.	06/01/76	Cave-in Rock, Illinois	S75
MacIntyre Development Mine and Mill N.L. Industries	03/01/76	Tahawus, New York	S69
Magma Mine Magma Copper Company	09/10/50 09/10/50	Superior, Arizona	S1
Marion Mill Sweeney Mining and Milling Corp.	10/30/72	Boulder, Colorado	S44
Mattes Brothers Quarry and Mill Mattes Brothers Construc- tion Company	07/29/74	Joplin, Missouri	S59
McCordsville Quarry and Mill Irving Materials, Inc.	02/01/74	McCordsville, Indiana	S54
McGill Concentrator Kennecott Copper Corp.	10/25/74	McGill, Nevada	S61
Millertown "A" Mine and Mill General Shale Products	08/02/76	Sentertown Community,	
Minntac Mine U.S. Steel Corporation	08/30/79	Mountain Iron, Minnesota	S116
Minntac Mine U.S. Steel Corporation	01/07/80	Mountain Iron, Minnesota	S120
Mobile Refining Plant Aluminum Company of Amer.	02/07/77	Mobile, Alabama	S84
Mojave Pit and Mill California Portland Cement Company	09/29/72	Mojave, California	S42
Mt. Marion Pit & Mill Hudson Valley Lightweight ggregate Corp.	02/25/75	Mt. Marion, New York	S64

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INDEX OF SURFACE FIRES
ALPHABETIZED BY MINE NAME

<u>NAME</u>	<u>DATE</u>	<u>LOCATION</u>	<u>INCIDENT NUMBER</u>
New York Mine and Mills Georgia Marble Company	03/29/73	Marble Hill, Georgia	S49
New York Mine and Mills Georgia Marble Company	07/20/77	Marble Hill, Georgia	S91
Northern Gravel Pit and Plant Northern Gravel Company	09/05/74	Muscatine, Iowa	S60
Oakfield Quarry Eden Stone Co., Inc.	05/24/78	Oakfield, Wisconsin	S100
Oley No. 2 Quarry and Mill Allentown Portland Cement Company	02/01/77	Oley, Pennsylvania	S83
Otay No. 1 Pit and Mill H.G. Fenton Material Co.	09/30/70	San Diego, California	S37
Oro Grande Pit and Mill Amcord, Inc.	10/14/77	Oro Grande, California	S94
Ozark Mine and Mill Ozark Lead Company	02/09/74	Sweetwater, Missouri	S55
Pacific Sand and Gravel Shop Pacific Sand and Gravel Company	08/16/68	Centralia, Washington	S28
Paga Mine and Mill Cyprus Mining Co.	04/20/77	Cartersville, Georgia	S88
Pariett Mine Standard Gilsonite Co.	09/04/56	Myton, Utah	S5
Park City Ventures Mine Park City Ventures	04/14/74	Park City, Utah	S57
Peerless Mine and Mills Mississippi Lime Company	01/11/77	St. Genevieve, Missouri	S81

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INDEX OF SURFACE FIRES
ALPHABETIZED BY MINE NAME

<u>NAME</u>	<u>DATE</u>	<u>LOCATION</u>	<u>INCIDENT NUMBER</u>
Penokee Mine North Range Mining Co.	03/30/59	Ironwood, Michigan	S8
Pitts Quarry Pitts Quarry, Inc.	09/28/69	Radom, Illinois	S33
Plant No. 4 Quarry and Mill Penn-Dixie Industries	05/08/79	West Nazareth, Pennsylvania	S112
Potash Mine and Mill Potash Co. of America	01/10/61	Carlsbad, N. Mexico	S9
Processing Plant - Reserve Mining Company	06/18/63	Silver Bay, Minnesota	S18
Quarry and Sand Plant No. 3 Cumberland Cement and Supply Company	03/26/79	Corriganville, Maryland	S108
Quincy Mine No. 6 Shaft Quincy Mining Company	07/17/56	Hancock, Michigan	S4
Republic Mine Marquette Iron Mining Co.	05/31/69	Republic, Michigan	S31
Reserve Mining Co. Clarifier Bldg. Silver Bay Division	09/26/79	Babbitt, Minnesota	S117
Resurrection No. 2 Mine Asarco, Co.	02/22/70	Leadville, Colorado	S34
R.T.P. Crushing & Screening Plant Ready-to-Pour Concrete Company	03/13/73	Ontario, Oregon	S48
Sacaton Unit Mine Asarco, Inc.	09/25/75	Casa Grande, Arizona	S67
Saulsbury Pit Tri-State Sand Co.	07/16/68	Saulsbury, Tennessee	S27

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INDEX OF SURFACE FIRES
ALPHABETIZED BY MINE NAME

<u>NAME</u>	<u>DATE</u>	<u>LOCATION</u>	<u>INCIDENT NUMBER</u>
Schwartzwalder Mine Cotter Corporation	10/26/72	Golden, Colorado	S43
Schwartzwalder Mine Cotter Corporation	02/11/80	Golden, Colorado	S121
Seneca & Kearsarge No. 4 Mines Calumet and Hecla Corp.	06/17/68	Calumet, Michigan	S26
Shullsburg Mine Eagle-Pitcher Company	01/14/63	Shullsburg, Wisconsin	S17
Silverbell Mine American Smelting & Refining Co.	10/27/53	Silverbell, Arizona	S2
Silver Bay Plant Reserve Mining Co.	07/16/69	Silver Bay, Minnesota	S32
Silver Bay Plant Reserve Mining Co.	11/03/78	Silver Bay, Minnesota	S103
South Central Avenue Plant Union Rock and Minerals Corporation	05/29/79	Phoenix, Arizona	S113
St. Charles Quarry & Mill St. Charles Quarry Co.	12/22/77	St. Charles, Missouri	S95
Sugar Creek Quarry & Mill Missouri Portland Cement Company	05/29/79	Sugar Creek, Missouri	S114
Sunshine Mine Sunshine Mining Company	07/17/72	Kellogg, Idaho	S40
Sunshine Mine Sunshine Mining Company	08/27/72	Kellogg, Idaho	S41
Sunshine Mine Sunshine Mining Company	07/29/77	Kellogg, Idaho	S92

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INDEX OF SURFACE FIRES
ALPHABETIZED BY MINE NAME

<u>NAME</u>	<u>DATE</u>	<u>LOCATION</u>	<u>INCIDENT NUMBER</u>
Taran Brothers Slate Quarry and Mill Taran Brothers, Inc.	01/12/75	Poultney, Vermont	S63
Temperly-Thompson Mine American Zinc Company	01/16/69	Shullsburg, Wisconsin	S30
Thunderbird Mine Eveleth Mines, Inc.	12/19/79	Eveleth, Minnesota	S119
Tilden Mine - LMA 03 Pellet Plant Cleveland Cliffs Iron Company	01/26/77	Ishpeming, Michigan	S82
Toddville No. 8 Plant Englehard Miners and Chemical Corporation	05/15/76	McIntyre, Georgia	S74
Trixie Mine Kennecott Copper Corp.	04/07/79	Eureka, Utah	S109
United States Steel Central Heating Plant United States Steel Corp.	12/19/64	Virginia, Minnesota	S21
U.S. Antimony Mill U.S. Antimony Corp.	03/20/78	Thompson Falls, Montana	S99
Watson Mine Swift Agricultural Chemicals Corp.	01/01/69	Fort Meade, Florida	S29
Weeks Island Mine and Mill Morton Salt Company	01/20/79	New Iberia, Louisiana	S106
Williams Brothers Slate Quarry Williams Brothers Slate Company	05/05/77	Middle Granville, New York	S89
Wooley Valley Mine Stauffer Chemical Co.	11/14/71	Soda Springs, Idaho	S38

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FIRE INCIDENT NUMBERS BY YEAR

<u>Year</u>	<u>Underground Fire Incident Numbers</u>	<u>Surface Fire Incident Numbers</u>
1950	U1	S1
1951	U2 - U6	
1952	U7 - U9	
1953	U10 - U12	S2
1954	U13 - U14	
1955	U15 - U18	
1956	U19 - U24	S3 - S5
1957	U25 - U34	S6
1958	U35 - U36	S7
1959	U37 - U43	S8
1960	U44 - U46	
1961	U47 - U49	S9 - S12
1962		S13 - S16
1963	U50 - U51	S17 - S19
1964	U52 - U55	S20 - S21
1965	U56 - U57	
1966	U58 - U59	
1967	U60 - U61	S22 - S24
1968	U62 - U65	S25 - S28
1969		S29 - S33
1970	U66 - U69	S34 - S37
1971	U70 - U74	S38 - S39
1972	U75 - U86	S40 - S45
1973	U87 - U107	S46 - S52
1974	U108 - U122	S53 - S62
1975	U123 - U132	S63 - S67
1976	U133 - U140	S68 - S80
1977	U141 - U153	S81 - S95
1978	U154 - U169	S96 - S104
1979	U170 - U174	S105 - S119
1980		S120 - S121

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UNDERGROUND FIRES BY IGNITION SOURCE AND YEAR
(Numbers Reference Table II-1a)

Ignition Source	Incident Number								
<u>Electrical</u>									
1950-52	U2	U4	U6	U9					
1953-55	U11	U13	U18						
1956-58	U19	U23	U25	U28	U32	U33	U34	U35	U36
1959-61	U37	U38	U40	U43	U44				
1962-64	U55								
1965-67									
1968-69	U63	U65							
1970-72	U66	U71	U76	U80	U82	U83	U86		
1973-75	U87	U90	U92	U94	U98	U100	U101	U102	U106
	U114	U115	U117	U119	U123	U125	U131		
1976-77	U133	U135	U138	U139	U140	U141	U142	U143	U144
	U146	U148	U150	U151	U152	U153			
1978-79	U154	U159	U163	U165	U166	U172	U173	U174	
<u>Hot Slag or Sparks from Welding/Cutting</u>									
1950-52	U1								
1953-55	U10								
1956-58	U20	U22	U27	U28	U29	U30	U31		
1959-61									
1962-64	U52	U54							
1965-67									
1968-69	U64								
1970-72	U67	U70	U73	U84					

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UNDERGROUND FIRES BY IGNITION SOURCE AND YEAR

Ignition Source	Incident Number									
<u>Hot Slag or Sparks from Welding/Cutting (Cont'd.)</u>										
1973-75	U88	U89	U93	U95	U110	U124	U128	U130	U132	
1976-77	U134	U136								
1978-79	U162	U171								
<u>Spontaneous Combustion</u>										
1950-52	U5									
1953-55	U15									
1956-58										
1959-61	U39	U49								
1962-64	U51									
1965-67	U56	U57	U59							
1968-69										
1970-72	U72	U74	U75	U77						
1973-75	U96	U113	U118	U120	U121	U122	U127	U129		
1976-77	U149									
1978-79										
<u>Friction</u>										
1950-52										
1953-55										
1956-58	U21	U24								
1959-61										

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UNDERGROUND FIRES BY IGNITION SOURCE AND YEAR

Ignition Source	Incident Number
-----------------	-----------------

Friction (Cont'd.)

1962-64	U53			
1965-67				
1968-69				
1970-72	U79	U85		
1973-75	U107	U108	U112	U116
1976-77				
1978-79	U170			

Engine Heat

1950-52	U8			
1953-55				
1956-58	U26			
1959-61				
1962-64				
1965-67				
1968-69				
1970-72	U68	U81		
1973-75	U97	U99	U111	
1976-77	U143	U147		
1978-79	U160			

Explosives

1950-52
1953-55

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UNDERGROUND FIRES BY IGNITION SOURCE AND YEAR

Ignition Source	Incident Number		
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Explosives (Cont'd.)

1956-58			
1959-61	U42	U46	
1962-64			
1965-67	U61		
1968-69			
1970-72			
1973-75	U126		
1976-77			
1978-79	U156	U157	U167

Vandalism/Arson

1950-52	U7		
1953-55	U12		
1956-58			
1959-61			
1962-64			
1965-67			
1968-69			
1970-72			
1973-75			
1976-77			
1978-79	U155		

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UNDERGROUND FIRES BY IGNITION SOURCE AND YEAR

Ignition Source	Incident Number
<u>Smoking</u>	
1950-52	U3
1953-55	
1956-58	
1959-61	U47
1962-64	
1965-67	
1968-69	
1970-72	
1973-75	
1976-77	
1978-79	
<u>Exothermic Foam Reaction</u>	
1950-52	
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	
1970-72	
1973-75	U104

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UNDERGROUND FIRES BY IGNITION SOURCE AND YEAR

Ignition Source	Incident Number
-----------------	-----------------

Exothermic
Foam Reaction (Cont'd.)

1976-77

1978-79 U168

Other

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69

1970-72

1973-75 U103 ¹

1976-77

1978-79 U164 ²

¹ Open Flame

² Failure of Sill Pillar

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UNDERGROUND FIRES BY IGNITION SOURCE AND YEAR

Ignition Source	Incident Number		
<u>Undetermined</u>			
1950-52			
1953-55	U14	U16	U17
1956-58			
1959-61	U41	U45	U48
1962-64	U50		
1965-67	U58	U60	
1968-69	U62		
1970-72	U69	U78	
1973-75	U91	U105	U109
1976-77	U137	U145	
1978-79	U158	U161	U169

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SURFACE FIRES BY IGNITION SOURCE AND YEAR
(Numbers Reference Table II-1b)

Ignition Source	Incident Number					
<u>Electrical</u>						
1950-52						
1953-55						
1956-58	S5					
1959-61	S10					
1962-64	S17	S19				
1965-67						
1968-69	S30					
1970-72	S37	S42				
1973-75	S48	S49	S50	S57	S59	S63
1976-77	S74	S77	S78	S80	S92	
1978-79	S96	S101	S111	S112		
<u>Open Flame</u>						
1950-52						
1953-55						
1956-58	S6					
1959-61						
1962-64	S20					
1965-67	S24					
1968-69	S29					
1970-72	S38	S39				
1973-75	S47	S56	S62	S65		
1976-77	S76	S83	S84	S85		

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SURFACE FIRES BY IGNITION SOURCE AND YEAR

Ignition Source	Incident Number				
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Open Flame (Cont'd.)

1978-79	S97	S102	S105	S118	S119
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Hot Slag or Sparks
from Welding/Cutting

1950-52

1953-55	S2
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1956-58

1959-61	S12
---------	-----

1962-64	S14
---------	-----

1965-67	S22
---------	-----

1968-69	S28	S32
---------	-----	-----

1970-72	S35	S36
---------	-----	-----

1973-75	S54	S66
---------	-----	-----

1976-77	S72	S87	S95
---------	-----	-----	-----

1978-79	S98	S108	S117
---------	-----	------	------

Engine Heat

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69	S33
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SURFACE FIRES BY IGNITION SOURCE AND YEAR

Ignition Source	Incident Number
--------------------	-----------------

Engine Heat (Cont'd.)

1970-72	S43				
1973-75	S46	S53	S67		
1976-77	S70	S73	S75	S82	
1978-80	S103	S107	S113	S116	S120

Smoking

1950-52	S1				
1953-55					
1956-58	S4				
1959-61					
1962-64					
1965-67					
1968-69	S27				
1970-72	S41				
1973-75	S61				
1976-77	S81	S88	S90		
1978-79	S99				

Spontaneous
Combustion

1950-52	
1953-55	
1956-58	
1959-61	S11

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SURFACE FIRES BY IGNITION SOURCE AND YEAR

Ignition Source	Incident Number
-----------------	-----------------

Spontaneous Combustion (Cont'd.)

1962-64

1965-67

1968-69

1970-72

1973-75

1976-77 S79 S94

1978-79

Friction

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69

1970-72

1973-75

1976-77

1978-79 S110 S114

Electric Heater

1950-52

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SURFACE FIRES BY IGNITION SOURCE AND YEAR

Ignition Source	Incident Number
-----------------	-----------------

Electric Heater (Cont'd.)

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69

1970-72

1973-75 S55

1976-77

1978-79 S106

Lightning

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69 S25

1970-72

1973-75 S58

1976-77

1978-79

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SURFACE FIRES BY IGNITION SOURCE AND YEAR

Ignition
Source Incident Number

Exhaust Heat

1950-52

1953-55

1956-58

1959-61

1962-64 S16 S21

1965-67

1968-69

1970-72

1973-75

1976-77

1978-79

Other

1950-52

1953-55

1956-58

1959-61

1962-64 S15 ¹

1965-67

1968-69 S31 ²

¹ Vandalism/Arson

² Heat from Kiln/Dryer

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SURFACE FIRES BY IGNITION SOURCE AND YEAR

Ignition Source	Incident Number
--------------------	-----------------

Other (Cont'd.)

1970-72	S40 ³
1973-75	
1976-77	
1978-79	S100 ⁴

³ Sparks from Forge

⁴ Sparks from Grinding Wheel

Undetermined

1950-52							
1953-55							
1956-58	S3	S7					
1959-61	S8	S9					
1962-64	S13	S18					
1965-67	S23						
1968-69	S26						
1970-72	S34	S44	S45				
1973-75	S51	S52	S60	S64			
1976-77	S68	S69	S71	S86	S89	S91	S93
1978-80	S104	S109	S115	S121			

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CROSS TABULATIONS OF IGNITION SOURCES

Type	Incident Number								
<u>Electrical Fires by Location</u>									
<u>1950-1967</u>									
Haulageway/Drift	U9	U11	U19	U32	U33	U37	U55		
Shaft	U28	U43	U44						
Mined-Out Area	U25								
Working Face	U35	U38							
Raise/Winze	U2	U4	U6	U13					
Substation	U23	U34							
Shop Area/Storage	U18								
Pump Room	U36								
Shaft Station	U40								
<u>1968-1977</u>									
Haulageway/Drift	U66	U80	U86	U87	U90	U94	U100	U101	
	U102	U106	U115	U117	U119	U123	U125	U131	
	U133	U138	U143						
Shaft	U82	U98							
Working Face	U92	U139	U142	U153					
Raise/Winze	U152								
Substation	U71	U76	U114	U141	U144	U148	U154		
Shop Area/Storage	U65	U135	U146						
Pump Room	U83	U140	U151						
Hoist	U63								
<u>1978-1979</u>									
Haulageway/Drift	U154	U159	U163	U165	U166				

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CROSS TABULATIONS OF IGNITION SOURCES

Type Incident Number

Electrical Fires by Location

1978-1979 (Cont'd.)

Shaft	U173
Working Face	U172
Pump Room	U174

Welding/Cutting Fires by Location

1950-1967

Haulageway/Drift	U10	U22		
Shaft	U1	U28	U31	
Raise/Winze	U27	U29	U30	U54
Shop Area/Storage	U20	U52		

1968-1977

Haulageway/Drift	U70	U84	U89	U95	U124	U130
Shaft	U64	U93	U134	U136		
Mined-Out Area	U88					
Raise/Winze	U67	U73				
Hoist	U132					
Fan Installation	U128					

1978-1979

Shaft	U162	U171
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Spontaneous Combustion Fires
by Location

1950-1967

Haulageway/Drift	U1
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CROSS TABULATIONS OF IGNITION SOURCES

Type	Incident Number					
<u>Spontaneous Combustion Fires by Location</u>						
<u>1950-1967 (Cont'd.)</u>						
Mined-Out Area	U15	U39	U49	U56	U57	U59
Stopping	U51					
<u>1968-1977</u>						
Haulageway/Drift	U122	U127				
Mined-Out Area	U74	U75	U77	U118	U120	U129
Working Face	U96	U113	U149			
Raise/Winze	U72					
Undetermined	U121					
<u>1978-1979</u>						
None						
<u>Electrical Fires by Equipment</u>						
<u>1950-1967</u>						
Load-Haul-Dump	U32					
Pump	U28	U34	U36			
Substation	U13	U23	U34			
Headframe/Hoist	U11					
Electrical Equip- ment	U55					
Utility Vehicle	U11	U19				
Grader	U33					
Shaft Station	U40					

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CROSS TABULATIONS OF IGNITION SOURCES

Type	Incident Number							
<u>Electrical Fires by Equipment</u>								
<u>1950-1967 (Cont'd.)</u>								
None (Power Cable, Light Bulb, Etc.)	U2 U44	U4	U9	U18	U25	U35	U38	U43
Unspecified	U37							
<u>1968-1977</u>								
Load-Haul-Dump	U115	U117	U125	U133	U143			
Pump	U83	U140	U151					
Substation	U76	U114	U141	U144	U148	U150		
Haulage Truck	U66	U139						
Underground Shop	U65	U135	U146					
Electrical Equip- ment	U102							
Locomotive	U86	U87	U90					
Shuttle Car	U80	U131						
Utility Vehicle	U100	U123						
Fan	U101	U106						
Rock Bolter	U92							
Slusher	U94							
Undercutter	U153							
None (Power Cable, Light Bulb, Etc.)	U63	U71	U98	U119	U142	U152		
Unspecified	U138							
<u>1978-1979</u>								
Load-Haul-Dump	U154	U166						

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CROSS TABULATIONS OF IGNITION SOURCES

Type Incident Number

Electrical Fires by Equipment

1978-1979 (Cont'd.)

Pump	U174				
Conveyor	U172				
Electrical Equip- ment	U159	U165			
None (Power Cable, Light Bulb, Etc.)	U163	U173			

Welding/Cutting Fires by Equipment

1950-1967

Pump	U28				
Headframe/Hoist	U1	U31			
Utility Vehicle	U52				
Compressed Air Line	U54				
Locomotive	U20				
None (Pipe, Steel Sets, Etc.)	U10	U22	U27	U29	U30

1968-1977

Pump	U2				
Headframe/Hoist	U4	U136			
Electrical Equip- ment	U93				
Fan	U128				
Welding Equipment	U84	U110			
Compressed Air Line	U134				
Ventilation Tubing	U70				

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CROSS TABULATIONS OF IGNITION SOURCES

Type Incident Number

Welding/Cutting Fires by Equipment

1968-1977 (Cont'd.)

Chute	U67	U73			
None (Pipe, Steel Sets, Etc.)	U88	U89	U95	U124	U130

1978-1979

None

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UNDERGROUND FIRES BY BURNING SUBSTANCE AND YEAR

Burning Substance	Incident Number								
<u>Timber</u>									
1950-52	U1	U2	U3	U4	U5	U6	U7	U9	
1953-55	U10	U11	U12	U13	U14	U16	U17	U18	
1956-58	U19	U20	U21	U22	U23	U24	U25	U27	U28
	U29	U30	U31	U34	U35	U36			
1959-61	U37	U38	U40	U42	U43	U44	U45	U46	U47
	U49								
1962-64	U50	U52	U54	U55					
1965-67	U56	U57	U58	U59	U61				
1968-69	U62	U63	U64	U65					
1970-72	U67	U68	U71	U72	U73	U74	U75	U81	U82
1973-75	U88	U89	U90	U93	U98	U99	U102	U103	U105
	U110	U116	U117	U120	U122	U124	U127	U128	U130
1976-77	U135	U136	U138	U140	U146	U152			
1978-79	U155	U162	U163	U170	U171	U172	U173		
<u>Insulation</u>									
1950-52	U8								
1953-55	U16								
1956-58	U23	U25	U28	U32	U33				
1959-61	U38								
1962-64									
1965-67									
1968-69									
1970-72	U66	U76	U80	U82	U83	U86			

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UNDERGROUND FIRES BY BURNING SUBSTANCE AND YEAR

Burning Substance	Incident Number								
<u>Insulation (Cont'd.)</u>									
1973-75	U93	U94	U97	U100	U101	U102	U106	U114	U115
	U117	U123							
1976-77	U133	U137	U138	U139	U140	U142	U143	U144	U145
	U148	U150	U151	U153					
1978-79	U154	U158	U159	U160	U161	U165	U166	U172	
<u>Rubber</u>									
1950-52									
1953-55									
1956-58	U34								
1959-61									
1962-64	U52	U53							
1965-67									
1968-69	U62								
1970-72	U66	U78	U79	U80	U84	U85	U86		
1973-75	U92	U93	U99	U100	U107	U108	U116	U117	
1976-77	U133	U134	U137	U143	U145	U153			
1978-79	U154	U155	U158	U160	U161	U169	U170		
<u>Oil</u>									
1950-52	U1								
1953-55	U10								
1956-58	U20	U21	U32	U34					
1959-61	U45								

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UNDERGROUND FIRES BY BURNING SUBSTANCE AND YEAR

Burning Substance	Incident Number					
----------------------	-----------------	--	--	--	--	--

Oil (Cont'd.)

1962-64	U52					
1965-67						
1968-69						
1970-72	U66	U78				
1973-75	U92	U99	U112	U126	U132	
1976-77	U133	U137	U143	U147		
1978-79	U157	U160	U161			

Hydraulic Fluid

1950-52						
1953-55						
1956-58	U32					
1959-61						
1962-64	U52					
1965-67						
1968-69						
1970-72	U66	U78	U86			
1973-75	U97	U99	U125	U132		
1976-77	U133	U137	U139	U143	U145	U153
1978-79	U154	U158	U161	U166	U169	

Trash

1950-52	U5	U6
1953-55		

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UNDERGROUND FIRES BY BURNING SUBSTANCE AND YEAR

Burning Substance	Incident Number						
<u>Trash (Cont'd.)</u>							
1956-58	U34						
1959-61	U42	U45	U46				
1962-64							
1965-67	U60						
1968-69							
1970-72	U81						
1973-75	U91	U105	U109	U118	U121	U122	U129
1976-77							
1978-79	U155						
<u>Combustible Ore</u>							
1950-52							
1953-55	U11	U15	U17				
1956-58							
1959-61	U39	U49					
1962-64							
1965-67	U57	U59					
1968-69							
1970-72	U74	U75					
1973-75	U96	U113					
1976-77	U149						
1978-79	U156						

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UNDERGROUND FIRES BY BURNING SUBSTANCE AND YEAR

Burning Substance	Incident Number			
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Diesel Fuel

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69

1970-72 U66 U69 U78

1973-75 U97 U99 U111

1976-77 U133 U147

1978-79 U154 U158 U160 U169

Flammable Gas

1950-52

1953-55

1956-58

1959-61 U46

1962-64 U50

1965-67

1968-69

1970-72 U84

1973-75 U93 U95

1976-77 U142

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UNDERGROUND FIRES BY BURNING SUBSTANCE AND YEAR

Burning Substance	Incident Number
----------------------	-----------------

Flammable Gas (Cont'd.)

1978-79

Grease

1950-52

1953-55

1956-58 U21

1959-61

1962-64

1965-67

1968-69

1970-72

1973-75 U112

1976-77 U133 U137 U143 U147

1978-79

Foam

1950-52

1953-55

1956-58

1959-61

1962-64 U51

1965-67

1968-69

1970-72

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UNDERGROUND FIRES BY BURNING SUBSTANCE AND YEAR

Burning Substance	Incident Number	
----------------------	-----------------	--

Foam (Cont'd.)

1973-75	U104	U119
---------	------	------

1976-77

1978-79	U168	
---------	------	--

Fiberglass

1950-52

1953-55

1956-58

1959-61	U46	
---------	-----	--

1962-64

1965-67

1968-69

1970-72	U69	U70
---------	-----	-----

1973-75

1976-77	U133	
---------	------	--

1978-79

Explosives

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

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UNDERGROUND FIRES BY BURNING SUBSTANCE AND YEAR

Burning Substance	Incident Number	
----------------------	-----------------	--

Explosives (Cont'd.)

1968-69

1970-72

1973-75 U126 U131

1976-77

1978-79

Oil Shale

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69

1970-72

1973-75

1976-77

1978-79 U164 U167

Wiring

1950-52

1953-55

1956-58

1959-61

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UNDERGROUND FIRES BY BURNING SUBSTANCE AND YEAR

Burning Substance	Incident Number	
<u>Wiring (Cont'd.)</u>		
1962-64		
1965-67		
1968-69		
1970-72		
1973-75		
1976-77	U140	U144
1978-79		
<u>Other</u>		
1950-52	U8	¹
1953-55		
1956-58		
1959-61		
1962-64		
1965-67		
1968-69		
1970-72		
1973-75	U87	² U128 ³

¹ Rags/Cloth

² Plywood

³ Straw

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UNDERGROUND FIRES BY BURNING SUBSTANCE AND YEAR

Burning Substance	Incident Number	
----------------------	-----------------	--

Other (Cont'd.)

1976-77	U133 ⁴	U142 ⁵
1978-79		

⁴ Plastic

⁵ Clothing

Undetermined

1950-52		
1953-55		
1956-58	U26	
1959-61	U41	U48
1962-64		
1965-67		
1968-69		
1970-72	U77	
1973-75		
1976-77	U141	
1978-79	U174	

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SURFACE FIRES BY BURNING SUBSTANCE AND YEAR

Burning Substance	Incident Number									
<u>Timber</u>										
1950-52	S1									
1953-55										
1956-58	S3	S4	S5	S6	S7					
1959-61	S8	S10	S12							
1962-64	S13	S14	S15	S16	S17	S21				
1965-67										
1968-69	S25	S30								
1970-72	S34	S35	S36	S39	S41	S43	S44			
1973-75	S49	S50	S51	S52	S53	S57	S58	S60	S64	
	S66									
1976-77	S68	S78	S79	S83	S86	S87	S89	S90	S93	
1978-79	S96	S98	S101	S102	S104	S106	S107	S119		
<u>Insulation</u>										
1950-52										
1953-55										
1956-58	S3									
1959-61	S8	S10								
1962-64	S15	S19								
1965-67										
1968-69	S31									
1970-72	S35	S42	S43							
1973-75	S51	S52	S59	S64	S66					

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SURFACE FIRES BY BURNING SUBSTANCE AND YEAR

Burning Substance	Incident Number							
<u>Insulation</u> (Cont'd.)								
1976-77	S74	S75	S77	S78	S82	S83	S89	S92
1978-80	S96	S104	S109	S111	S112	S116	S121	
<u>Oil</u>								
1950-52								
1953-55								
1956-58								
1959-61	S8	S10						
1962-64								
1965-67								
1968-69	S30							
1970-72	S35	S39	S43					
1973-75	S51	S52	S53	S58	S60	S62	S64	
1976-77	S68	S77	S83	S95				
1978-80	S102	S105	S107	S111	S112	S114	S120	S121
<u>Rubber</u>								
1950-52								
1953-55	S2							
1956-58								
1959-61	S8	S10						
1962-64	S18							
1965-67	S22							
1968-69	S29	S32						

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SURFACE FIRES BY BURNING SUBSTANCE AND YEAR

Burning Substance	Incident Number						
<u>Rubber (Cont'd.)</u>							
1970-72							
1973-75	S46	S52	S66	S67			
1976-77	S70	S73	S74	S77	S82	S87	S94
1978-80	S110	S111	S116	S117	S120		
<u>Clothing</u>							
1950-52							
1953-55							
1956-58							
1959-61							
1962-64							
1965-67	S22						
1968-69	S27	S28	S29	S33			
1970-72							
1973-75	S47	S51	S62				
1976-77	S69	S76	S81				
1978-79	S96	S97	S105	S106	S108	S111	
<u>Flammable Gas</u>							
1950-52							
1953-55							
1956-58							
1959-61	S9						
1962-64							

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SURFACE FIRES BY BURNING SUBSTANCE AND YEAR

Burning Substance	Incident Number			
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Flammable Gas (Cont'd.)

1965-67	S22	S23	S24	
1968-69	S28			
1970-72	S45			
1973-75	S55	S56		
1976-77	S76	S81	S84	S85
1978-79	S99	S119		

Trash

1950-52				
1953-55	S2			
1956-58				
1959-61	S10			
1962-64				
1965-67				
1968-69				
1970-72	S35			
1973-75	S50	S64		
1976-77	S72	S79	S91	
1978-79	S96			

Diesel Fuel

1950-52
1953-55
1956-58

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SURFACE FIRES BY BURNING SUBSTANCE AND YEAR

Burning Substance	Incident Number
----------------------	-----------------

Diesel Fuel (Cont'd.)

1959-61	S10			
1962-64	S20			
1965-67				
1968-69				
1970-72	S38	S39		
1973-75	S52			
1976-77				
1978-79	S97	S110	S115	S116

Hydraulic Fluid

1950-52				
1953-55				
1956-58				
1959-61	S10			
1962-64				
1965-67				
1968-69				
1970-72				
1973-75	S46	S67		
1976-77	S73	S95		
1978-79	S111	S113	S117	

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SURFACE FIRES BY BURNING SUBSTANCE AND YEAR

Burning Substance	Incident Number
<u>Gasoline</u>	
1950-52	
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	S33
1970-72	S37
1973-75	S48 S63
1976-77	S69
1978-79	
<u>Explosives</u>	
1950-52	
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	
1970-72	S36
1973-75	
1976-77	

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SURFACE FIRES BY BURNING SUBSTANCE AND YEAR

Burning Substance	Incident Number	
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Explosives (Cont'd.)

1978-79	S100	S110
---------	------	------

Flammable Liquid

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69

1970-72

1973-75	S54	
---------	-----	--

1976-77

1978-79	S111	S118
---------	------	------

Plastic

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69

1970-72

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SURFACE FIRES BY BURNING SUBSTANCE AND YEAR

Burning Substance	Incident Number	
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Plastic (Cont'd.)

1973-75

1976-77

1978-79 S103 S119

Starter Fluid

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69

1970-72

1973-75

1976-77 S80 S88

1978-79

Other

1950-52

1953-55

1956-58

1959-61 S11 ¹

¹ Ammonium Nitrate

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SURFACE FIRES BY BURNING SUBSTANCE AND YEAR

Burning Substance	Incident Number		
<u>Other (Cont'd.)</u>			
1962-64	S20 ²	S21 ³	
1965-67			
1968-69			
1970-72	S40 ⁴		
1973-75	S50 ⁵	S61 ⁶	S65 ⁷
1976-77	S71 ⁸	S94 ⁹	
1978-79			

- ² Rags/Cloth
- ³ Plasterboard
- ⁴ Corkboard
- ⁵ Asphalt
- ⁶ Carbon Disulfide
- ⁷ Fiberglass
- ⁸ Foam Insulation
- ⁹ Combustible Ore

Undetermined

- 1950-52
- 1953-55
- 1956-58
- 1959-61
- 1962-64

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SURFACE FIRES BY BURNING SUBSTANCE AND YEAR

Burning Substance	Incident Number
<u>Undetermined</u> (Cont'd.)	
1965-67	
1968-69	S26
1970-72	
1973-75	
1976-77	
1978-79	

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UNDERGROUND FIRES BY LOCATION AND YEAR

Location	Incident Number								
<u>Haulageway/ Drift</u>									
1950-52	U5	U9							
1953-55	U10	U11							
1956-58	U19	U21	U22	U32	U33				
1959-61	U37								
1962-64	U53	U55							
1965-67									
1968-69									
1970-72	U66	U69	U70	U79	U80	U84	U85	U86	
1973-75	U87	U89	U90	U94	U95	U97	U99	U100	U101
	U102	U103	U104	U106	U107	U108	U110	U111	U115
	U116	U117	U119	U122	U123	U124	U125	U127	U130
	U131								
1976-77	U133	U137	U138	U143	U145	U147			
1978-79	U154	U159	U161	U163	U165	U166	U168	U169	U170
<u>Shaft</u>									
1950-52	U1	U3	U7						
1953-55	U12	U14							
1956-58	U28	U31							
1959-61	U43	U44							
1962-64	U50								
1965-67	U58								
1968-69	U62	U64							

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UNDERGROUND FIRES BY LOCATION AND YEAR

Location	Incident Number						
<u>Shaft (Cont'd.)</u>							
1970-72	U82						
1973-75	U93	U98					
1976-77	U134	U136					
1978-79	U160	U162	U171	U173			
<u>Mined-Out Area</u>							
1950-52							
1953-55	U15						
1956-58	U25						
1959-61	U39	U41	U42	U45	U47	U48	U49
1962-64							
1965-67	U56	U57	U59				
1968-69							
1970-72	U74	U75	U77				
1973-75	U88	U118	U120	U129			
1976-77							
1978-79							
<u>Working Face</u>							
1950-52							
1953-55	U17						
1956-58	U24	U35					
1959-61	U38	U46					
1962-64							

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UNDERGROUND FIRES BY LOCATION AND YEAR

Location	Incident Number			
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Working Face (Cont'd.)

1965-67

1968-69

1970-72 U78

1973-75 U92 U96 U113 U126

1976-77 U139 U142 U149 U153

1978-79 U156 U164 U167 U172

Raise/Winze

1950-52 U2 U4 U6

1953-55 U13

1956-58 U27 U29 U30

1959-61

1962-64 U54

1965-67 U61

1968-69

1970-72 U67 U72 U73

1973-75

1976-77 U152

1978-79

Substation

1950-52

1953-55

1956-58 U23 U34

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UNDERGROUND FIRES BY LOCATION AND YEAR

Location	Incident Number
----------	-----------------

Substation (Cont'd.)

1959-61				
1962-64				
1965-67				
1968-69				
1970-72	U71	U76		
1973-75	U114			
1976-77	U141	U144	U148	U150
1978-79				

Shop Area/
Storage

1950-52				
1953-55	U16	U18		
1956-58	U20			
1959-61				
1962-64	U52			
1965-67				
1968-69	U65			
1970-72				
1973-75	U105			
1976-77	U135	U146		
1978-79				

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UNDERGROUND FIRES BY LOCATION AND YEAR

Location	Incident Number	
<u>Pump Room</u>		
1950-52		
1953-55		
1956-58	U26	U36
1959-61		
1962-64		
1965-67		
1968-69		
1970-72	U68	U83
1973-75	U112	
1976-77	U140	U151
1978-79	U174	
<u>Waste Area</u>		
1950-52		
1953-55		
1956-58		
1959-61		
1962-64		
1965-67	U60	
1968-69		
1970-72	U81	
1973-75	U91	U109
1976-77		
1978-79		

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UNDERGROUND FIRES BY LOCATION AND YEAR

Location Incident Number

Hoist

1950-52	U8
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	U63
1970-72	
1973-75	U132
1976-77	
1978-79	

Other

1950-52	
1953-55	
1956-58	
1959-61	U40 ¹
1962-64	U51 ²
1965-67	
1968-69	

¹ Shaft Station

² Stopping

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UNDERGROUND FIRES BY LOCATION AND YEAR

Location Incident Number

Other (Cont'd.)

1970-72

1973-75 U128 ³

1976-77

1978-79 U157 ⁴

³ Fan Installation

⁴ Oil Sump

Undetermined

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69

1970-72

1973-75 U120

1976-77

1978-79 U155 U158

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SURFACE FIRES BY LOCATION AND YEAR

Location	Incident Number								
<u>Plant/Mill Building</u>									
1950-52									
1953-55	S2								
1956-58	S5								
1959-61	S8								
1962-64	S21								
1965-67	S24								
1968-69	S25	S26							
1970-72	S44								
1973-75	S49	S50	S55	S61	S63				
1976-77	S68	S71	S72	S74	S76	S78	S81	S82	S84
	S85	S87	S89	S92					
1978-79	S99	S102	S104	S107	S117				
<u>Maintenance Shop</u>									
1950-52									
1953-55									
1956-58									
1959-61	S10								
1962-64	S16								
1965-67	S23								
1968-69	S28								
1970-72	S35	S37	S38	S40					

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SURFACE FIRES BY LOCATION AND YEAR

Location Incident Number

Maintenance Shop (Cont'd.)

1973-75	S48	S51	S54	S56
1976-77	S95			
1978-79	S97	S100	S108	S111

Crushing/Screening Plant

1950-52				
1953-55				
1956-58	S6			
1959-61	S12			
1962-64	S17			
1965-67				
1968-69				
1970-72				
1973-75	S46	S62	S66	
1976-77	S70	S83		
1978-79				

Headframe/Hoist

1950-52	
1953-55	
1956-58	
1959-61	
1962-64	S14

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SURFACE FIRES BY LOCATION AND YEAR

Location Incident Number

Headframe/Hoist (Cont'd.)

1965-67

1968-69

1970-72 S34

1973-75 S65

1976-77 S86 S90 S93

1978-79 S109

Haulage Road

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69

1970-72

1973-75

1976-77 S73 S80 S88

1978-80 S110 S113 S115 S120

Compressor Plant

1950-52

1953-55

1956-58

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SURFACE FIRES BY LOCATION AND YEAR

Location Incident Number

Compressor Plant (Cont'd.)

1959-61

1962-64 S13

1965-67

1968-69 S30

1970-72 S43

1973-75

1976-77 S75

1978-80 S114 S121

Pit Area

1950-52

1953-55

1956-58

1959-61

1962-64 S20

1965-67

1968-69

1970-72

1973-75

1976-77 S77 S79 S91

1978-79 S116

Fuel Storage

1950-52

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SURFACE FIRES BY LOCATION AND YEAR

Location Incident Number

Fuel Storage (Cont'd.)

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69 S27 S33

1970-72 S45

1973-75 S52

1976-77

1978-79 S118

Misc. Surface
Building

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69

1970-72

1973-75 S57 S64

1976-77

1978-79 S96 S106

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SURFACE FIRES BY LOCATION AND YEAR

Location Incident Number

Storage Building

1950-52

1953-55

1956-58

1959-61

1962-64 S15

1965-67

1968-69

1970-72 S36 ¹ S41 ²

1973-75

1976-77

1978-79 S101 ³

¹ Explosives Storage

² Timber Storage

³ Equipment Storage

Substation/
Switchbox

1950-52

1953-55

1956-58

1959-61

1962-64 S19

1965-67

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SURFACE FIRES BY LOCATION AND YEAR

Location Incident Number

Substation/
Switchbox (Cont'd.)

1968-69

1970-72 S42

1973-75 S59

1976-77

1978-79 S112

Explosives Mixing
Plant

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69

1970-72

1973-75

1976-77 S69

1978-79 S98

Dredge

1950-52

1953-55

1956-58

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SURFACE FIRES BY LOCATION AND YEAR

Location	Incident Number	
<u>Dredge (Cont'd.)</u>		
1959-61		
1962-64		
1965-67		
1968-69		
1970-72		
1973-75	S58	S60
1976-77		
1978-79		
<u>Conveyor Belt</u>		
1950-52		
1953-55		
1956-58		
1959-61		
1962-64	S18	
1965-67		
1968-69	S32	
1970-72		
1973-75		
1976-77		
1978-79		
<u>Hoist Room</u>		
1950-52		

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SURFACE FIRES BY LOCATION AND YEAR

Location Incident Number

Hoist Room (Cont'd.)

1953-55

1956-58 S3 S5

1959-61

1962-64

1965-67

1968-69

1970-72

1973-75

1976-77

1978-79

Trash Pile

1950-52

1953-55

1956-58 S7

1959-61

1962-64

1965-67 S22

1968-69

1970-72

1973-75

1976-77

1978-79

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SURFACE FIRES BY LOCATION AND YEAR

Location Incident Number

Other

1950-52	S1	¹		
1953-55				
1956-58	S4	²	S5	³
1959-61	S9	⁴	S11	⁵
1962-64				
1965-67				
1968-69	S31	⁶		
1970-72	S39	⁷		
1973-75	S53	⁸		
1976-77	S94	⁹		
1978-79	S103	¹⁰	S105	¹¹ S119
				¹²

1 Framing Shed

2 Shaft House

3 Sacking Plant, Ore Bins

4 Power House

5 Borehole

6 Plant Control Room

7 Trailer House

8 Pump Shack

9 Coal Tunnel

10 Exhaust Stack

11 Outdoor Heater

12 Construction Area

Index II-5b

SURFACE FIRES BY LOCATION AND YEAR

Location	Incident Number
<u>Undetermined</u>	
1950-52	
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	S29
1970-72	
1973-75	S47 S67
1976-77	
1978-79	

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UNDERGROUND FIRES BY DURATION AND YEAR

Duration Incident Number

0 - ¼ Hour

1950-52

1953-55

1956-58

1959-61 U38 U46

1962-64

1965-67

1968-69

1970-72

1973-75 U95 U98 U101 U111 U123

1976-77 U134 U142

1978-79 U156 U157

¼ - ½ Hour

1950-52

1953-55

1956-58 U29 U31 U33

1959-61

1962-64

1965-67

1968-69

1970-72 U76

1973-75 U107 U110 U132

1976-77

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UNDERGROUND FIRES BY DURATION AND YEAR

Duration	Incident Number								
<u>¼ - ½ Hour (Cont'd.)</u>									
1978-79									
<u>½ - 1 Hour</u>									
1950-52									
1953-55									
1956-58	U26	U32							
1959-61									
1962-64									
1965-67									
1968-69									
1970-72	U84								
1973-75	U89	U102							
1976-77	U133	U140							
1978-79	U165								
<u>1 - 4 Hours</u>									
1950-52	U9								
1953-55									
1956-58	U36								
1959-61	U39	U48							
1962-64									
1965-67									
1968-69									
1970-72	U70	U71	U79	U80	U81	U82	U83	U86	

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UNDERGROUND FIRES BY DURATION AND YEAR

Duration	Incident Number								
<u>1 - 4 Hours (Cont'd.)</u>									
1973-75	U87	U88	U90	U92	U94	U97	U103	U104	U108
	U115	U116	U117	U119	U125				
1976-77	U135	U136	U137	U139	U145	U148	U150	U151	U153
1978-79	U154	U159	U161	U163	U169	U172	U174		
<u>4 - 24 Hours</u>									
1950-52	U5	U6							
1953-55									
1956-58	U19	U21	U30						
1959-61									
1962-64	U53								
1965-67	U60	U61							
1968-69	U62	U63							
1970-72	U66	U68	U69	U78					
1973-75	U93	U100	U105	U109	U114	U124	U126	U130	U131
1976-77	U141	U143	U144	U146	U152				
1978-79	U155	U158	U160	U162	U166	U168	U173		
<u>24+ Hours</u>									
1950-52	U1	U2	U3	U4					
1953-55	U13	U16	U17	U18					
1956-58	U22	U25	U26	U34	U35				
1959-61	U37	U40	U41	U43	U44				
1962-64	U50								

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UNDERGROUND FIRES BY DURATION AND YEAR

Duration	Incident Number								
<u>24+ Hours (Cont'd.)</u>									
1965-67	U56	U57	U58	U59					
1968-69									
1970-72	U67	U72	U74	U75	U77	U85			
1973-75	U96	U99	U113	U118	U120	U121	U122	U127	U128
	U129								
1976-77	U138								
1978-79	U164	U167	U170	U171					
<u>Undetermined</u>									
1950-52	U7	U8							
1953-55	U10	U11	U12	U14	U15				
1956-58	U20	U23	U24	U28					
1959-61	U42	U45	U47	U49					
1962-64	U51	U52	U54	U55					
1965-67									
1968-69	U64	U65							
1970-72	U73								
1973-75	U91	U106	U112						
1976-77	U147	U149							
1978-79									

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SURFACE FIRES BY DURATION AND YEAR

Duration	Incident Number					
<u>0 - ¼ Hour</u>						
1950-52						
1953-55						
1956-58						
1959-61						
1962-64	S20					
1965-67						
1968-69	S28	S29				
1970-72						
1973-75	S65					
1976-77	S77	S81	S85			
1978-79	S97	S105	S111			
<u>¼ - ½ Hour</u>						
1950-52						
1953-55	S2					
1956-58						
1959-61	S9					
1962-64						
1965-67	S22	S23				
1968-69	S33					
1970-72						
1973-75	S46	S49	S56	S67		
1976-77	S71	S76	S80	S84	S92	S95

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SURFACE FIRES BY DURATION AND YEAR

Duration Incident Number

¼ - ½ Hour (Cont'd.)

1978-80 S99 S103 S114 S116 S120

½ - 1 Hour

1950-52 S1

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69 S25 S32

1970-72 S40 S41 S45

1973-75 S51 S52 S61

1976-77 S72 S75 S82 S93

1978-79 S115 S117

1 - 4 Hours

1950-52

1953-55

1956-58 S7

1959-61 S11

1962-64 S15 S18

1965-67

1968-69

1970-72 S35 S42

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SURFACE FIRES BY DURATION AND YEAR

Duration Incident Number

1 - 4 Hours (Cont'd.)

1973-75	S50	S53	S55	S59	S64
1976-77	S83	S91			
1978-79	S96	S101	S102	S106	S118

4 - 24 Hours

1950-52					
1953-55					
1956-58					
1959-61	S10				
1962-64	S13	S14	S16	S21	
1965-67					
1968-69					
1970-72					
1973-75	S66				
1976-77	S87				
1978-79	S104	S119			

24+ Hours

1950-52					
1953-55					
1956-58					
1959-61					
1962-64	S17	S19			
1965-67					

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SURFACE FIRES BY DURATION AND YEAR

Duration	Incident Number									
<u>24+ Hours</u>										
1968-69										
1970-72	S34									
1973-75										
1976-77	S79	S86								
1978-79	S98									
<u>Undetermined</u>										
1950-52										
1953-55										
1956-58	S3	S4	S5	S6						
1959-61	S8	S12								
1962-64										
1965-67	S24									
1968-69	S26	S27	S30	S31						
1970-72	S36	S37	S38	S39	S43	S44				
1973-75	S47	S48	S54	S57	S58	S60	S62	S63		
1976-77	S68	S69	S70	S73	S74	S78	S88	S89	S90	
	S94									
1978-80	S100	S107	S108	S109	S110	S112	S113	S121		

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CROSS TABULATIONS OF FIRE DURATION

Type	Incident Number							
<u>Ignition Source of 0-$\frac{1}{4}$ Hr.</u>								
<u>1970-1979</u>								
Electrical	U98	U101	U123	U142				
Welding/Cutting	U95	U134						
Explosives	U156	U157						
Engine Heat	U111							
<u>Ignition Source of $\frac{1}{4}$-$\frac{1}{2}$ Hr.</u>								
<u>1970-1979</u>								
Electrical	U76							
Welding/Cutting	U110	U132						
Friction	U107							
<u>Ignition Source of $\frac{1}{2}$-1 Hr.</u>								
<u>1970-1979</u>								
Electrical	U102	U133	U140	U165				
Welding/Cutting	U84	U89						
<u>Ignition Source of 1-4 Hrs.</u>								
<u>1970-1979</u>								
Electrical	U71	U80	U82	U83	U86	U87	U90	U92
	U94	U115	U117	U119	U125	U135	U139	U148
	U150	U151	U153	U154	U159	U161	U163	U172
	U174							
Welding/Cutting	U70	U88	U136					
Friction	U79	U108	U116					
Engine Heat	U81	U97						

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CROSS TABULATIONS OF FIRE DURATION

Type	Incident Number							
<u>Ignition Source of 1-4 Hrs.</u>								
<u>1970-1979 (Cont'd.)</u>								
Open Flame/ Smoking	U103							
Exothermic Foam Reaction	U104							
Undetermined	U137	U145	U169					
<u>Ignition Source of 4-24 Hrs.</u>								
<u>1970-1979</u>								
Electrical	U66	U100	U114	U131	U141	U143	U144	U146
	U152	U166	U173					
Welding/Cutting	U93	U124	U130	U162				
Explosives	U126							
Engine Heat	U68	U160						
Vandalism/Arson	U155							
Exothermic Foam Reaction	U168							
Undetermined	U69	U78	U105	U109	U158			
<u>Ignition Source of 24+ Hrs.</u>								
<u>1970-1979</u>								
Electrical	U138							
Welding/Cutting	U67	U128	U171					
Spontaneous Combustion	U72	U74	U75	U77	U96	U113	U118	U120
	U121	U122	U127	U129				
Friction	U85	U170						
Explosives	U167							

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CROSS TABULATIONS OF FIRE DURATION

Type Incident Number

Ignition Source of 24+ Hrs.

1970-1979 (Cont'd.)

Engine Heat U99

Failure of Sill
Pillar After U164
Explosion

Ignition Source of Unspecified Length

1970-1979

Electrical U106

Welding/Cutting U73

Spontaneous Combustion U149

Friction U112

Engine Heat U147

Undetermined U91

Electrical Fires by Duration

1970-1979

0 - ¼ Hr. U98 U101 U123 U142

¼ - ½ Hr. U76

½ - 1 Hr. U102 U133 U140 U165

1 - 4 Hrs. U71 U80 U82 U83 U86 U87 U90 U92
U94 U115 U117 U119 U125 U135 U139 U148
U150 U151 U153 U154 U159 U161 U163 U172
U174

4 - 24 Hrs. U66 U100 U114 U131 U141 U143 U144 U146
U152 U166 U173

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CROSS TABULATIONS OF FIRE DURATION

Type Incident Number

Electrical Fires by Duration

1970-1979 (Cont'd.)

24+ Hrs. U138

Unspecified Duration U106

Welding/Cutting Fires by Duration

1970-1979

0 - ¼ Hr. U95 U134

¼ - ½ Hr. U110 U132

½ - 1 Hr. U84 U89

1 - 4 Hrs. U70 U88 U136

4 - 24 Hrs. U93 U124 U130 U162

24+ Hrs. U67 U128 U171

Unspecified Duration U73

Spontaneous Combustion Fires by Duration

1970-1979

0 - ¼ Hr.

¼ - ½ Hr.

½ - 1 Hr.

1 - 4 Hrs.

4 - 24 Hrs.

24+ Hrs. U72 U74 U75 U77 U96 U113 U118 U120
U121 U122 U127 U129

Unspecified Duration U149

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UNDERGROUND FIRES BY NUMBER OF INJURIES AND YEAR

Number of Injuries	Incident Number	
--------------------	-----------------	--

1

1950-52	U1	
1953-55		
1956-58	U24	U28
1959-61		
1962-64	U54	
1965-67		
1968-69		
1970-72		
1973-75	U95	U125
1976-77	U133	
1978-79	U155	

2 - 5

1950-52		
1953-55	U11	
1956-58		
1959-61	U49	
1962-64		
1965-67		
1968-69		
1970-72		
1973-75	U113	
1976-77	U142	U149

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UNDERGROUND FIRES BY NUMBER OF INJURIES AND YEAR

Number of Injuries	Incident Number
-----------------------	-----------------

2 - 5 (Cont'd.)

1978-79

6 - 10

1950-52

1953-55

1956-58

1959-61 U39

1962-64

1965-67

1968-69

1970-72

1973-75

1976-77

1978-79

10+

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69

1970-72

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UNDERGROUND FIRES BY NUMBER OF INJURIES AND YEAR

Number of Injuries	Incident Number
<u>10+</u> (Cont'd.)	
1973-75	
1976-77	U141
1978-79	
<u>NONE</u>	ALL OTHERS

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SURFACE FIRES BY NUMBER OF INJURIES AND YEAR

Number of Injuries	Incident Number					
<u>1</u>						
1950-52						
1953-55						
1956-58	S3					
1959-61						
1962-64						
1965-67	S24					
1968-69	S26					
1970-72	S45					
1973-75	S46	S48	S54	S67		
1976-77	S70	S73	S76	S81	S85	S88
1978-79	S97	S100	S111	S113	S118	

2 - 5

1950-52						
1953-55						
1956-58						
1959-61						
1962-64						
1965-67						
1968-69						
1970-72	S42					
1973-75	S61	S66				
1976-77	S84					

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SURFACE FIRES BY NUMBER OF INJURIES AND YEAR

Number of Injuries	Incident Number	
<u>2 - 5 (Cont'd.)</u>		
1978-79	S108	S116
<u>6 - 10</u>		
1950-52		
1953-55		
1956-58		
1959-61		
1962-64	S13	
1965-67		
1968-69		
1970-72		
1973-75		
1976-77		
1978-79	S110	
<u>NONE</u>	ALL OTHERS	

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CROSS TABULATIONS OF INJURY FIRES

Type Incident Number

Injury Fires by Ignition Source

1950-1967

Electrical	U11	U28
Welding/Cutting	U1	U54
Spontaneous Combustion	U39	U49
Friction	U24	

1968-1977

Electrical	U125	U133	U141	U142
Welding/Cutting	U92			
Spontaneous Combustion	U113	U149		

1978-1979

Vandalism/Arson	U155
-----------------	------

Injury Fires by Location

1950-1967

Haulageway/Drift	U11	
Shaft	U1	U28
Mined-Out Area	U39	U49
Working Face	U24	
Raise/Winze	U54	

1968-1977

Haulageway/Drift	U95	U125	U133
Working Face	U113	U142	U149

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CROSS TABULATIONS OF INJURY FIRES

Type Incident Number

Injury Fires by Location

1968-1977 (Cont'd.)

Substation U141

1978-1979

Unspecified U155

Injury Fires by Equipment

1950-1967

Pump U8

Headframe/Hoist U1 U11

Compressed Air Line U54

None U24 U39 U49

1968-1977

LHD U125 U133

Substation U141

None U95 U113 U142 U149

1978-1979

None U155

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CROSS TABULATIONS OF INJURY FIRES
BY STENCH WARNING USE

Type Incident Number

Injury Fires by Stench Warning Use

1960 - 1979

No. of Injuries

0	U75	U84	U127	U134	U136	U137
	U139	U140	U143	U148	U150	U151
	U152	U162	U163	U165	U169	U174
1	U133					
2-5	U149					
6+						

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UNDERGROUND FIRES BY NUMBER OF DEATHS AND YEAR

Number of Deaths	Incident Number
<u>1</u>	
1950-52	
1953-55	
1956-58	
1959-61	U45
1962-64	U54
1965-67	
1968-69	
1970-72	U69
1973-75	U132
1976-77	
1978-79	U157
<u>2 - 5</u>	
1950-52	
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	
1970-72	U70
1973-75	U99
1976-77	

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UNDERGROUND FIRES BY NUMBER OF DEATHS AND YEAR

Number of Deaths	Incident Number
<u>2 - 5 (Cont'd.)</u>	
1978-79	
<u>6+</u>	
1950-52	
1953-55	U11
1956-58	
1959-61	U39
1962-64	
1965-67	
1968-69	U62
1970-72	U75
1973-75	
1976-77	
1978-79	
<u>NONE</u>	ALL OTHERS

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SURFACE FIRES BY NUMBER OF DEATHS AND YEAR

Number of Deaths	Incident Number					
<u>1</u>						
1950-52						
1953-55						
1956-58						
1959-61	S9					
1962-64	S20					
1965-67	S22	S23	S24			
1968-69	S26	S27	S28	S29	S30	S33
1970-72	S37					
1973-75	S47	S56	S62			
1976-77						
1978-79	S99	S100	S105	S118		
<u>NONE</u>	ALL OTHERS					

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CROSS TABULATIONS OF FATAL FIRES

Type	Incident Number	
------	-----------------	--

Fatal Fires by Ignition Source

1950-1967

Electrical	U11	
Welding/Cutting	U54	
Spontaneous Combustion	U39	
Undetermined	U45	

1968-1977

Welding/Cutting	U70	U132
Spontaneous Combustion	U75	
Engine Heat	U99	
Undetermined	U62	U69

1978-1979

Explosives	U157	
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Fatal Fires by Location

1950-1967

Haulageway/Drift	U11	
Mined-Out Area	U39	U45
Raise/Winze	U54	

1968-1977

Haulageway/Drift	U69	U70	U99
Shaft	U62		
Mined-Out Area	U75		

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CROSS TABULATIONS OF FATAL FIRES

Type	Incident Number
------	-----------------

Fatal Fires by Location

1968-1977 (Cont'd.)

Hoist	U132
-------	------

1978-1979

Oil Sump	U157
----------	------

Fatal Fires by Equipment

1950-1967

Headframe/Hoist	U11
-----------------	-----

Compressed Air Line	U54
---------------------	-----

Unspecified	U45
-------------	-----

None	U39
------	-----

1968-1977

LHD	U69	U99
-----	-----	-----

Headframe/Hoist	U132
-----------------	------

Conveyor	U62
----------	-----

Ventilation Tubing	U70
--------------------	-----

None	U75
------	-----

1978-1979

None	U157
------	------

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CROSS TABULATIONS OF FATAL FIRES
BY STENCH WARNING USE

Type

Incident Number

Fatal Fires by Stench Warning Use

1960 - 1979

No. of Deaths

0	U84	U127	U133	U134	U136	U139
	U140	U143	U148	U149	U150	U151
	U162	U163	U165	U169	U174	
1						
2-5						
6+	U75					

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UNDERGROUND FIRES BY DETECTION AND YEAR

Detection	Incident Number									
<u>Misc. Worker(s) in Area</u>										
1950-52	U2	U3	U5							
1953-55	U16	U17	U18							
1956-58	U22	U24	U26	U26	U28	U34	U35	U36		
1959-61	U37	U39	U44							
1962-64	U54									
1965-67	U59	U60	U61							
1968-69	U62									
1970-72	U68	U69	U72	U79	U85					
1973-75	U100	U101	U105	U109	U118	U121	U122	U124	U130	
	U131									
1976-77	U136	U139	U144	U146	U148	U149	U152			
1978-79	U163	U165	U169	U171	U173	U174				
<u>Equipment Operator</u>										
1950-52	U7									
1953-55	U11									
1956-58	U19	U21	U32	U33						
1959-61	U38	U46								
1962-64	U52									
1965-67										
1968-69										
1970-72	U66	U67	U78	U81	U83	U86				

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UNDERGROUND FIRES BY DETECTION AND YEAR

Detection	Incident Number								
<u>Equipment Operator</u> (Cont'd.)									
1973-75	U94	U95	U97	U99	U103	U104	U111	U115	U117
	U119	U123	U125	U126					
1976-77	U133	U137	U140	U141	U142	U143	U145	U147	U153
1978-79	U154	U158	U161	U164	U166				
<u>Shift Boss/ Foreman</u>									
1950-52	U4								
1953-55	U15								
1956-58	U25								
1959-61	U42	U45							
1962-64	U53								
1965-67	U56	U57							
1968-69									
1970-72	U75								
1973-75	U96	U120	U127						
1976-77	U150	U151							
1978-79	U167	U168	U172						
<u>Incoming Shift</u>									
1950-52									
1953-55	U13								
1956-58	U23	U30							
1959-61									

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UNDERGROUND FIRES BY DETECTION AND YEAR

Detection	Incident Number								
<u>Incoming Shift (Cont'd.)</u>									
1962-64									
1965-67									
1968-69									
1970-72	U73	U80							
1973-75	U87	U88	U89	U90	U92	U102	U114	U129	
1976-77									
1978-79	U159	U162	U170						
<u>Welding Crew</u>									
1950-52	U1	U9							
1953-55	U10								
1956-58	U20	U29	U31						
1959-61									
1962-64	U54								
1965-67									
1968-69	U64								
1970-72	U70	U84							
1973-75	U93	U110	U128	U132					
1976-77	U134								
1978-79									
<u>Hoistman</u>									
1950-52									
1953-55									

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UNDERGROUND FIRES BY DETECTION AND YEAR

Detection	Incident Number			
<u>Hoistman (Cont'd.)</u>				
1956-58				
1959-61	U40			
1962-64	U50			
1965-67				
1968-69				
1970-72	U71	U74		
1973-75	U106	U113		
1976-77	U135	U151		
1978-79				
<u>Repair Crew</u>				
1950-52				
1953-55				
1956-58				
1959-61				
1962-64				
1965-67				
1968-69				
1970-72				
1973-75	U98 ¹	U107 ²	U108 ²	U112 ¹

¹ Electrical Repair Crew

² Belt Repair Crew

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UNDERGROUND FIRES BY DETECTION AND YEAR

Detection	Incident Number	
<u>Repair Crew (Cont'd.)</u>		
1976-77		
1978-79		
<u>Watchman</u>		
1950-52		
1953-55	U12	
1956-58		
1959-61		
1962-64	U55	
1965-67		
1968-69		
1970-72	U82	
1973-75		
1976-77		
1978-79		
<u>Passerby</u>		
1950-52		
1953-55		
1956-58		
1959-61	U43	U47
1962-64		
1965-67	U58	

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UNDERGROUND FIRES BY DETECTION AND YEAR

Detection	Incident Number
<u>Passerby (Cont'd.)</u>	
1968-69	
1970-72	
1973-75	
1976-77	
1978-79	
<u>Blasting Crew</u>	
1950-52	
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	
1970-72	
1973-75	
1976-77	
1978-79	U156 U157
<u>Other</u>	
1950-52	
1953-55	
1956-58	
1959-61	

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UNDERGROUND FIRES BY DETECTION AND YEAR

Detection	Incident Number	
<u>Other (Cont'd.)</u>		
1962-64		
1965-67		
1968-69	U65	¹
1970-72	U77	²
1973-75	U91	³
1976-77	U138	⁴
1978-79	U155	⁵ U160 ⁶

- ¹ Maintenance Man
- ² Air Sample Indicating Carbon Monoxide
- ³ U.S. Bureau of Mines Inspector
- ⁴ Local Resident
- ⁵ Owner Driving Past the Mine on Highway
- ⁶ Maintenance Foreman

Undetermined

1950-52	U6	U8
1953-55	U14	
1956-58		
1959-61	U41	U48 U49
1962-64	U51	
1965-67		
1968-69	U63	

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UNDERGROUND FIRES BY DETECTION AND YEAR

Detection	Incident Number
<u>Undetermined</u> (Cont'd.)	
1970-72	U76
1973-75	U116
1976-77	
1978-79	

Index II-9b

SURFACE FIRES BY DETECTION AND YEAR

Detection	Incident Number								
<u>Equipment Operator</u>									
1950-52									
1953-55									
1956-58									
1959-61	S8	S9							
1962-64	S13	S20							
1965-67	S23	S24							
1968-69	S27	S29	S33						
1970-72	S37	S38	S42	S43					
1973-75	S46	S47	S48	S53	S55	S56	S61	S65	S67
1976-77	S73	S75	S76	S77	S78	S80	S81	S82	S83
	S84	S85	S88						
1978-80	S97	S99	S100	S105	S110	S111	S113	S115	S116
	S118	S120							

Misc. Worker(s)
in Area

1950-52				
1953-55				
1956-58	S6	S7		
1959-61				
1962-64	S14	S19		
1965-67	S22			
1968-69	S25	S31	S32	
1970-72	S40	S44		

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SURFACE FIRES BY DETECTION AND YEAR

Detection	Incident Number								
<u>Misc. Worker(s) In Area</u>	(Cont'd.)								
1973-75	S49	S52	S58	S60	S62	S64			
1976-77	S69	S70	S71	S72	S74	S79	S86	S89	S90
	S91	S92							
1978-80	S96	S98	S101	S104	S106	S107	S109	S112	S121

Passerby

1950-52									
1953-55									
1956-58	S5								
1959-61	S11	S12							
1962-64	S15	S21							
1965-67									
1968-69									
1970-72	S34	S35	S41						
1973-75	S51	S57	S63						
1976-77	S93	S94							
1978-79									

Watchman

1950-52	S1								
1953-55									
1956-58									
1959-61	S10								

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SURFACE FIRES BY DETECTION AND YEAR

Detection	Incident Number	
-----------	-----------------	--

Watchman (Cont'd.)

1962-64	S16	S17
1965-67		
1968-69	S30	
1970-72		
1973-75	S50	
1976-77	S87	
1978-79	S102	S103

Welding Crew

1950-52		
1953-55	S2	
1956-58		
1959-61		
1962-64		
1965-67		
1968-69	S28	
1970-72	S36	
1973-75	S54	S66
1976-77	S95	
1978-79	S108	S117

Shift Boss/
Foreman

1950-52

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SURFACE FIRES BY DETECTION AND YEAR

Detection	Incident Number
-----------	-----------------

Shift Boss/
Foreman (Cont'd.)

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69

1970-72 S39

1973-75 S59

1976-77

1978-79 S114

Hoistman

1950-52

1953-55

1956-58 S3

1959-61

1962-64

1965-67

1968-69

1970-72

1973-75

1976-77

1978-79

Index II-9b

SURFACE FIRES BY DETECTION AND YEAR

Detection	Incident Number
<u>Undetermined</u>	
1950-52	
1953-55	
1956-58	S4
1959-61	
1962-64	S18
1965-67	
1968-69	S26
1970-72	S45
1973-75	
1976-77	S68
1978-79	S119

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UNDERGROUND FIRES BY EQUIPMENT INVOLVED AND YEAR

Equipment	Incident Number			
<u>Load-Haul-Dump</u>				
1950-52				
1953-55				
1956-58	U32			
1959-61				
1962-64				
1965-67				
1968-69				
1970-72	U69	U78		
1973-75	U99	U115	U117	U125
1976-77	U133	U137	U143	U145
1978-79	U154	U158	U161	U166
<u>Pump</u>				
1950-52	U1			
1953-55	U16			
1956-58	U26	U28	U34	U36
1959-61				
1962-64				
1965-67				
1968-69	U64			
1970-72	U68	U83		
1973-75	U112			
1976-77	U140	U151		

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UNDERGROUND FIRES BY EQUIPMENT INVOLVED AND YEAR

Equipment Incident Number

Pump (Cont'd.)

1978-79 U174

Electrical
Substation

1950-52

1953-55 U13 U17

1956-58 U23 U34

1959-61

1962-64

1965-67

1968-69

1970-72 U76

1973-75 U114

1976-77 U141 U144 U148 U150

1978-79 U159

Belt

1950-52

1953-55

1956-58

1959-61

1962-64 U53

1965-67

1968-69

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UNDERGROUND FIRES BY EQUIPMENT INVOLVED AND YEAR

Equipment	Incident Number		
-----------	-----------------	--	--

Belt (Cont'd.)

1970-72	U79	U85	
1973-75	U107	U108	U116
1976-77			
1978-79	U170	U172	

Hoist (Motor
and/or Equipment)

1950-52	U1	U8	
1953-55	U11	U14	
1956-58			
1959-61			
1962-64			
1965-67			
1968-69			
1970-72			
1973-75	U132		
1976-77			
1978-79			

Haulage
Equipment

1950-52
1953-55
1956-58
1959-61

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UNDERGROUND FIRES BY EQUIPMENT INVOLVED AND YEAR

Equipment	Incident Number
-----------	-----------------

Haulage Equipment (Cont'd.)

1962-64	
1965-67	
1968-69	U65
1970-72	U80
1973-75	U97 U131
1976-77	
1978-79	

Haulage Truck

1950-52	
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	
1970-72	U66
1973-75	U111 U123
1976-77	U139
1978-79	

Headframe

1950-52	U1
---------	----

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UNDERGROUND FIRES BY EQUIPMENT INVOLVED AND YEAR

Equipment	Incident Number
<u>Headframe (Cont'd.)</u>	
1953-55	U12
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	
1970-72	
1973-75	U132
1976-77	
1978-79	
<u>Locomotive</u>	
1950-52	
1953-55	
1956-58	U21
1959-61	
1962-64	
1965-67	
1968-69	
1970-72	U86
1973-75	U87
1976-77	
1978-79	

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UNDERGROUND FIRES BY EQUIPMENT INVOLVED AND YEAR

Equipment	Incident Number
-----------	-----------------

Surface
Building(s)

1950-52	U7
1953-55	U11
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	
1970-72	
1973-75	
1976-77	
1978-79	

Oxygen/Acetylene
Bottle

1950-52	
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	
1970-72	U84
1973-75	U110

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UNDERGROUND FIRES BY EQUIPMENT INVOLVED AND YEAR

Equipment	Incident Number
-----------	-----------------

Oxygen/Acetylene
Bottle (Cont'd.)

1976-77

1978-79

Compressor

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69

1970-72

1973-75

1976-77 U147

1978-79 U160

Power Cable

1950-52

1953-55

1956-58

1959-61

1962-64 U55

1965-67

Index II-10a
UNDERGROUND FIRES BY EQUIPMENT INVOLVED AND YEAR

Equipment	Incident Number
-----------	-----------------

Power Cable (Cont'd.)

1968-69	
1970-72	
1973-75	
1976-77	
1978-79	U165

Ventilation
Tubing

1950-52	
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	
1970-72	U70
1973-75	
1976-77	
1978-79	U156

Rock Drill/
Bolter

1950-52	
1953-55	
1956-58	

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UNDERGROUND FIRES BY EQUIPMENT INVOLVED AND YEAR

Equipment	Incident Number
-----------	-----------------

<u>Rock Drill/ Bolter</u> (Cont'd.)	
---	--

1959-61	
---------	--

1962-64	
---------	--

1965-67	
---------	--

1968-69	
---------	--

1970-72	
---------	--

1973-75	U92
---------	-----

1976-77	
---------	--

1978-79	U169
---------	------

<u>Fan</u>	
------------	--

1950-52	
---------	--

1953-55	
---------	--

1956-58	
---------	--

1959-61	
---------	--

1962-64	
---------	--

1965-67	
---------	--

1968-69	
---------	--

1970-72	
---------	--

1973-75	U101 U106
---------	-----------

1976-77	
---------	--

1978-79	
---------	--

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UNDERGROUND FIRES BY EQUIPMENT INVOLVED AND YEAR

Equipment Incident Number

Cable Reel

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69

1970-72

1973-75 U93 U102

1976-77

1978-79

Utility Vehicle

1950-52

1953-55

1956-58

1959-61

1962-64 U52

1965-67

1968-69

1970-72

1973-75 U100

1976-77

78-79

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UNDERGROUND FIRES BY EQUIPMENT INVOLVED AND YEAR

Equipment	Incident Number		
<u>Other</u>			
1950-52			
1953-55	U11		1
1956-58	U19	U33	2 3
1959-61	U40		4
1962-64	U54		5
1965-67			
1968-69	U62		6
1970-72			
1973-75	U94	U102	7 8
			U104 9
1976-77	U153		10
1978-79	U168		11

- 1 Pick-Up
- 2 Mantrip
- 3 Grader
- 4 Shaft Station
- 5 Compressed Air Line
- 6 Cage/Skip
- 7 Slusher
- 8 Blasting Switch
- 9 Electrical Controls
- 10 Undercutter
- 11 Poly Foam Machine

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 UNDERGROUND FIRES BY EQUIPMENT INVOLVED AND YEAR

Equipment	Incident Number								
<u>None</u>									
1950-52	U2	U3	U4	U5	U6	U9			
1953-55	U10	U15	U18						
1956-58	U20	U22	U24	U25	U27	U29	U30	U31	U35
1959-61	U38	U39	U41	U42	U43	U44	U46	U47	U48
	U49								
1962-64	U51								
1965-67	U56	U57	U58	U59	U60	U61			
1968-69	U63								
1970-72	U67	U71	U72	U73	U74	U75	U77	U81	U82
1973-75	U88	U89	U90	U91	U95	U96	U98	U103	U109
	U113	U118	U119	U120	U121	U122	U124	U126	U127
	U128	U129	U130						
1976-77	U134	U136	U142	U149	U152				
1978-79	U155	U157	U162	U163	U164	U167	U171	U173	

Undetermined

1950-52

1953-55

1956-58

1959-61 U37 U45

1962-64 U50

1965-67

1968-69 U65

1970-72

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UNDERGROUND FIRES BY EQUIPMENT INVOLVED AND YEAR

Equipment	Incident Number
-----------	-----------------

Undetermined (Cont'd.)

1973-75	U105
1976-77	U135 U138 U146
1978-79	

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SURFACE FIRES BY EQUIPMENT INVOLVED AND YEAR

Equipment	Incident Number				
<u>Misc. Trucks</u>					
1950-52					
1953-55					
1956-58					
1959-61					
1962-64					
1965-67					
1968-69					
1970-72					
1973-75	S46 ¹	S48 ¹	S54 ²	S56 ³	S67 ¹
1976-77	S77 ¹	S88 ¹	S95 ^{1, 3}		
1978-80	S98 ⁴	S110 ¹	S115 ⁵	S116 ¹	S120 ¹

- 1 Haulage Truck
- 2 Explosives Truck
- 3 Welding Truck
- 4 Fuel Truck
- 5 Pump Truck

Compressor

1950-52	
1953-55	
1956-58	S7
1959-61	

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SURFACE FIRES BY EQUIPMENT INVOLVED AND YEAR

Equipment Incident Number

Compressor (Cont'd.)

1962-64	S13			
1965-67				
1968-69	S30			
1970-72	S39	S43		
1973-75				
1976-77	S68	S75		
1978-80	S107	S109	S114	S121

Headframe/
Hoist

1950-52				
1953-55				
1956-58	S3	S4	S5	
1959-61				
1962-64	S14	S17		
1965-67				
1968-69				
1970-72	S34			
1973-75	S57			
1976-77	S68	S75	S86	S93
1978-79	S109			

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SURFACE FIRES BY EQUIPMENT INVOLVED AND YEAR

Equipment	Incident Number
-----------	-----------------

Distribution Station

1950-52			
1953-55			
1956-58			
1959-61			
1962-64	S19		
1965-67			
1968-69			
1970-72	S42	S43	
1973-75	S59		
1976-77	S74	S78	S92
1978-79	S103	S112	

Conveyor Belt

1950-52			
1953-55			
1956-58			
1959-61			
1962-64	S18		
1965-67			
1968-69	S32		
1970-72			
1973-75	S66		
1976-77	S70	S83	S94

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SURFACE FIRES BY EQUIPMENT INVOLVED AND YEAR

Equipment Incident Number

Conveyor Belt (Cont'd.)

1978-79 S104

Crusher

1950-52

1953-55

1956-58

1959-61 S8

1962-64

1965-67

1968-69

1970-72

1973-75 S62

1976-77 S70 S83

1978-79 S104

LHD

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69

1970-72

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SURFACE FIRES BY EQUIPMENT INVOLVED AND YEAR

Equipment Incident Number

LHD (Cont'd.)

1973-75 S52 S54

1976-77

1978-79 S111 S113

Kiln/Concentrator
Dryer

1950-52

1953-55 S2

1956-58

1959-61

1962-64

1965-67

1968-69

1970-72 S44

1973-75

1976-77 S82 S85

1978-79

Screen

1950-52

1953-55

1956-58

1959-61 S8

1962-64

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SURFACE FIRES BY EQUIPMENT INVOLVED AND YEAR

Equipment Incident Number

Screen (Cont'd.)

1965-67

1968-69

1970-72

1973-75

1976-77 S70 S83

1978-79

Pump/Electric
Motor

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69

1970-72

1973-75 S53 S66

1976-77

1978-79 S117

Heater

1950-52

1953-55

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SURFACE FIRES BY EQUIPMENT INVOLVED AND YEAR

Equipment	Incident Number
-----------	-----------------

Heater (Cont'd.)

1956-58	
1959-61	
1962-64	S20
1965-67	
1968-69	
1970-72	
1973-75	
1976-77	
1978-79	S97 S102

Fan

1950-52	
1953-55	
1956-58	
1959-61	S10
1962-64	
1965-67	
1968-69	
1970-72	
1973-75	
1976-77	
1978-79	S103

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SURFACE FIRES BY EQUIPMENT INVOLVED AND YEAR

Equipment	Incident Number	
<u>Welding Equipment</u>		
1950-52		
1953-55		
1956-58		
1959-61		
1962-64		
1965-67	S22	S23
1968-69		
1970-72		
1973-75		
1976-77		
1978-79		
<u>Dredge</u>		
1950-52		
1953-55		
1956-58		
1959-61		
1962-64		
1965-67		
1968-69		
1970-72		
1973-75	S58	S60

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SURFACE FIRES BY EQUIPMENT INVOLVED AND YEAR

Equipment	Incident Number				
<u>Dredge</u> (Cont'd.)					
1976-77					
1978-79					
<u>Other</u>					
1950-52					
1953-55					
1956-58					
1959-61	S9				
1962-64					
1965-67					
1968-69	S33				
1970-72					
1973-75	S50				
1976-77	S69	S73	S76	S78	S80
	S84				
1978-79	S99	S103			

- | | |
|--------------------|----------------------------|
| 1 Gas Cooler | 7 Electrical Control Panel |
| 2 Pick-up/Tractor | 8 Grader |
| 3 Asphalt Tank | 9 Boiler |
| 4 Explosives Mixer | 10 Reactor Tank |
| 5 Scraper | 11 Exhaust Stack |
| 6 Propane Burner | |

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SURFACE FIRES BY EQUIPMENT INVOLVED AND YEAR

Equipment	Incident Number					
<u>None</u>						
1950-52						
1953-55						
1956-58						
1959-61	S11					
1962-64						
1965-67						
1968-69	S27	S28	S29	S31		
1970-72	S41					
1973-75	S47	S61	S64	S65		
1976-77	S71	S72	S79	S90	S91	
1978-79	S100	S105	S108			
<u>Undetermined</u>						
1950-52	S1					
1953-55						
1956-58	S6					
1959-61	S12					
1962-64	S15	S16	S21			
1965-67	S24					
1968-69	S25	S26	S30			
1970-72	S35	S36	S37	S38	S40	S45
1973-75	S49	S51	S55	S63		

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SURFACE FIRES BY EQUIPMENT INVOLVED AND YEAR

Equipment	Incident Number							
<u>Undetermined (Cont'd.)</u>								
1976-77	S81	S87	S89					
1978-79	S96	S98	S101	S102	S106	S107	S118	S119

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UNDERGROUND FIRES BY STATE AND YEAR

State	Incident Number					
<u>Alabama</u>						
1950-52						
1953-55						
1956-58						
1959-61						
1962-64						
1965-67						
1968-69						
1970-72						
1973-75						
1976-77	U147					
1978-79						
<u>Arizona</u>						
1950-52	U6	U7	U8	U9		
1953-55	U10	U14				
1956-58						
1959-61	U41	U49				
1962-64						
1965-67						
1968-69	U64					
1970-72	U69	U77				
1973-75	U93	U99	U102	U110	U122	U129
1976-77	U140					
1978-79	U156					

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UNDERGROUND FIRES BY STATE AND YEAR

State	Incident Number				
<u>California</u>					
1950-52					
1953-55	U13	U15			
1956-58					
1959-61	U48				
1962-64					
1965-67	U59				
1968-69					
1970-72					
1973-75					
1976-77					
1978-79					
<u>Colorado</u>					
1950-52					
1953-55					
1956-58					
1959-61					
1962-64	U50	U54			
1965-67					
1968-69					
1970-72	U67	U73			
1973-75	U87	U96	U111	U112	U123
1976-77	U145	U148	U149		
1978-79	U163	U164	U165	U167	

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UNDERGROUND FIRES BY STATE AND YEAR

State	Incident Number					
<u>Georgia</u>						
1950-52						
1953-55						
1956-58						
1959-61						
1962-64						
1965-67						
1968-69						
1970-72						
1973-75						
1976-77						
1978-79	U158					
<u>Idaho</u>						
1950-52						
1953-55						
1956-58						
1959-61						
1962-64						
1965-67	U61					
1968-69	U63					
1970-72	U68	U70	U71	U72	U75	
1973-75	U88	U91	U98	U106	U114	U115
1976-77	U134	U138	U139	U151	U152	
1978-79	U159	U162	U173	U174		

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UNDERGROUND FIRES BY STATE AND YEAR

State	Incident Number
<u>Illinois</u>	
1950-52	
1953-55	
1956-58	
1959-61	U45
1962-64	
1965-67	
1968-69	
1970-72	
1973-75	U109
1976-77	
1978-79	
<u>Kentucky</u>	
1950-52	
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	
1970-72	
1973-75	U105
1976-77	U141
1978-79	

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UNDERGROUND FIRES BY STATE AND YEAR

State	Incident Number									
<u>Louisiana</u>										
1950-52										
1953-55										
1956-58										
1959-61										
1962-64										
1965-67										
1968-69	U62									
1970-72	U78	U82								
1973-75	U100	U118	U126							
1976-77										
1978-79	U168	U170	U172							
<u>Michigan</u>										
1950-52	U3									
1953-55										
1956-58	U19	U22	U23	U24	U25	U27	U30	U32	U33	
	U36									
1959-61	U37	U38	U39	U40	U42	U47				
1962-64	U51	U53								
1965-67										
1968-69										
1970-72	U81									
1973-75	U89	U90	U97	U104	U107	U108	U113	U116	U119	
	U124	U130								

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UNDERGROUND FIRES BY STATE AND YEAR

State	Incident Number
<u>Michigan</u> (Cont'd.)	
1976-77	
1978-79	
<u>Minnesota</u>	
1950-52	U2
1953-55	U18
1956-58	U31 U34
1959-61	U43
1962-64	
1965-67	
1968-69	
1970-72	
1973-75	
1976-77	
1978-79	
<u>Missouri</u>	
1950-52	
1953-55	
1956-58	U21
1959-61	
1962-64	
1965-67	
1968-69	

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UNDERGROUND FIRES BY STATE AND YEAR

State	Incident Number		
<u>Missouri</u> (Cont'd.)			
1970-72	U76	U80	
1973-75	U125	U128	U132
1976-77	U133	U143	
1978-79	U155	U169	
<u>Montana</u>			
1950-52			
1953-55			
1956-58			
1959-61			
1962-64			
1965-67			
1968-69			
1970-72			
1973-75	U101	U103	U120
1976-77			
1978-79			
<u>Nevada</u>			
1950-52	U1		
1953-55			
1956-58	U28		
1959-61			
1962-64			

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UNDERGROUND FIRES BY STATE AND YEAR

State	Incident Number
<u>Nevada (Cont'd.)</u>	
1965-67	U57
1968-69	
1970-72	
1973-75	
1976-77	
1978-79	
<u>New Jersey</u>	
1950-52	
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	U58
1968-69	
1970-72	U84
1973-75	
1976-77	
1978-79	
<u>New Mexico</u>	
1950-52	
1953-55	U12
1956-58	U20

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UNDERGROUND FIRES BY STATE AND YEAR

State	Incident Number	
<u>New Mexico</u> (Cont'd.)		
1959-61	U44	
1962-64		
1965-67		
1968-69	U65	
1970-72	U79	
1973-75	U94	
1976-77	U150	
1978-79		
<u>New York</u>		
1950-52		
1953-55		
1956-58		
1959-61		
1962-64		
1965-67		
1968-69		
1970-72		
1973-75	U92	U131
1976-77	U144	U153
1978-79	U160	

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UNDERGROUND FIRES BY STATE AND YEAR

State	Incident Number
<u>Ohio</u>	
1950-52	
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	U60
1968-69	
1970-72	
1973-75	
1976-77	
1978-79	
<u>Pennsylvania</u>	
1950-52	
1953-55	U17
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	
1970-72	U66
1973-75	U117
1976-77	U137 U146
1978-79	

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UNDERGROUND FIRES BY STATE AND YEAR

State	Incident Number
<u>South Dakota</u>	
1950-52	
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	U56
1968-69	
1970-72	U86
1973-75	U127
1976-77	U135
1978-79	
<u>Tennessee</u>	
1950-52	
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	
1970-72	
1973-75	
1976-77	
1978-79	U154 U161 U166

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UNDERGROUND FIRES BY STATE AND YEAR

State	Incident Number
<u>Texas</u>	
1950-52	
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	
1970-72	U85
1973-75	
1976-77	
1978-79	
<u>Utah</u>	
1950-52	
1953-55	U11
1956-58	
1959-61	
1962-64	U55
1965-67	
1968-69	
1970-72	U74 U83
1973-75	U95
1976-77	
1978-79	U171

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UNDERGROUND FIRES BY STATE AND YEAR

State	Incident Number
<u>Virginia</u>	
1950-52	U5
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	
1970-72	
1973-75	
1976-77	
1978-79	
<u>West Virginia</u>	
1950-52	
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	
1970-72	
1973-75	U121
1976-77	
1978-79	

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UNDERGROUND FIRES BY STATE AND YEAR

State	Incident Number		
<u>Wisconsin</u>			
1950-52	U4		
1953-55	U16		
1956-58	U26	U29	U35
1959-61			
1962-64	U52		
1965-67			
1968-69			
1970-72			
1973-75			
1976-77			
1978-79			
<u>Wyoming</u>			
1950-52			
1953-55			
1956-58			
1959-61	U46		
1962-64			
1965-67			
1968-69			
1970-72			
1973-75			
1976-77	U136	U142	
1978-79	U157		

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SURFACE FIRES BY STATE AND YEAR

State	Incident Number
<u>Alabama</u>	
1950-52	
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	
1970-72	
1973-75	
1976-77	S84
1978-79	
<u>Arizona</u>	
1950-52	S1
1953-55	S2
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	
1970-72	
1973-75	S67
1976-77	
1978-79	S113

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SURFACE FIRES BY STATE AND YEAR

State	Incident Number	
<u>Arkansas</u>		
1950-52		
1953-55		
1956-58		
1959-61		
1962-64		
1965-67		
1968-69		
1970-72	S45	
1973-75		
1976-77		
1978-79		
<u>California</u>		
1950-52		
1953-55		
1956-58	S7	
1959-61		
1962-64		
1965-67		
1968-69		
1970-72	S37	S42
1973-75		
1976-77	S70	S94
1978-79		

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SURFACE FIRES BY STATE AND YEAR

State	Incident Number		
<u>Colorado</u>			
1950-52			
1953-55			
1956-58			
1959-61			
1962-64			
1965-67			
1968-69			
1970-72	S34	S43	S44
1973-75	S65		
1976-77	S68		
1978-80	S98	S115	S121
<u>Florida</u>			
1950-52			
1953-55			
1956-58			
1959-61			
1962-64	S20		
1965-67			
1968-69	S29		
1970-72			
1973-75			
1976-77			
1978-79	S118		

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SURFACE FIRES BY STATE AND YEAR

State	Incident Number			
<u>Georgia</u>				
1950-52				
1953-55				
1956-58				
1959-61				
1962-64				
1965-67				
1968-69				
1970-72				
1973-75	S49			
1976-77	S73	S74	S88	S91
1978-79				
<u>Idaho</u>				
1950-52				
1953-55				
1956-58				
1959-61				
1962-64				
1965-67				
1968-69				
1970-72	S35	S38	S40	S41
1973-75	S51	S52		
1976-77	S87	S92		
1978-79				

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SURFACE FIRES BY STATE AND YEAR

State	Incident Number	
<u>Illinois</u>		
1950-52		
1953-55		
1956-58		
1959-61		
1962-64		
1965-67		
1968-69	S25	S33
1970-72		
1973-75		
1976-77	S75	S77
1978-79	S111	
<u>Indiana</u>		
1950-52		
1953-55		
1956-58		
1959-61		
1962-64		
1965-67		
1968-69		
1970-72		
1973-75	S54	
1976-77		
1978-79		

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SURFACE FIRES BY STATE AND YEAR

State	Incident Number
<u>Iowa</u>	
1950-52	
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	
1970-72	
1973-75	S60
1976-77	
1978-79	
<u>Kansas</u>	
1950-52	
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	
1970-72	
1973-75	
1976-77	
1978-79	S101

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SURFACE FIRES BY STATE AND YEAR

State	Incident Number
<u>Louisiana</u>	
1950-52	
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	S24
1968-69	
1970-72	
1973-75	S50
1976-77	
1978-79	S106
<u>Maryland</u>	
1950-52	
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	
1970-72	
1973-75	
1976-77	
1978-79	S108

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SURFACE FIRES BY STATE AND YEAR

State	Incident Number				
<u>Michigan</u>					
1950-52					
1953-55					
1956-58	S3	S4			
1959-61	S8				
1962-64	S14				
1965-67					
1968-69	S26	S31			
1970-72					
1973-75	S46				
1976-77	S82				
1978-79					
<u>Minnesota</u>					
1950-52					
1053-55					
1956-58					
1959-61	S10	S12			
1962-64	S15	S16	S18	S21	
1965-67					
1968-69	S32				
1970-72	S36				
1973-75					
1976-77	S80				
1978-80	S103	S116	S117	S119	S120

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SURFACE FIRES BY STATE AND YEAR

State	Incident Number		
<u>Missouri</u>			
1950-52			
1953-55			
1956-58			
1959-61			
1962-64			
1965-67			
1968-69			
1970-72			
1973-75	S47	S55	S59
1976-77	S81	S95	
1978-79	S97	S104	S114
<u>Montana</u>			
1950-52			
1953-55			
1956-58			
1959-61			
1962-64	S13		
1965-67			
1968-69			
1970-72	S39		
1973-75			
1976-77	S86	S90	S93
1978-79	S99		

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SURFACE FIRES BY STATE AND YEAR

State	Incident Number		
<u>Nebraska</u>			
1950-52			
1953-55			
1956-58			
1959-61			
1962-64			
1965-67			
1968-69			
1970-72			
1973-75	S58		
1976-77			
1978-79			
<u>Nevada</u>			
1950-52			
1953-55			
1956-58			
1959-61			
1962-64			
1965-67			
1968-69			
1970-72			
1973-75	S53	S61	S66
1976-77			
1978-79	S107		

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SURFACE FIRES BY STATE AND YEAR

State	Incident Number			
<u>New Mexico</u>				
1950-52				
1953-55				
1956-58				
1959-61	S9			
1962-64				
1965-67				
1968-69				
1970-72				
1973-75				
1976-77				
1978-79				
<u>New York</u>				
1950-52				
1953-55				
1956-58				
1959-61	S11			
1962-64				
1965-67				
1968-69				
1970-72				
1973-75	S64			
1976-77	S69	S72	S78	S89
1978-79	S110			

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SURFACE FIRES BY STATE AND YEAR

State	Incident Number
<u>North Carolina</u>	
1950-52	
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	S22
1968-69	
1970-72	
1973-75	
1976-77	
1978-79	
<u>Ohio</u>	
1950-52	
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	
1970-72	
1973-75	S62
1976-77	
1978-79	

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SURFACE FIRES BY STATE AND YEAR

State	Incident Number
<u>Oregon</u>	
1950-52	
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	
1970-72	
1973-75	S48
1976-77	
1978-79	
<u>Pennsylvania</u>	
1950-52	
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	
1970-72	
1973-75	
1976-77	S83
1978-79	S112

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SURFACE FIRES BY STATE AND YEAR

State	Incident Number	
<u>South Dakota</u>		
1950-52		
1953-55		
1956-58	S6	
1959-61		
1962-64		
1965-67		
1968-69		
1970-72		
1973-75		
1976-77	S71	S85
1978-79		
<u>Tennessee</u>		
1950-52		
1953-55		
1956-58		
1959-61		
1962-64		
1965-67		
1968-69	S27	
1970-72		
1973-75		
1976-77	S76	
1978-79	S96	S105

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SURFACE FIRES BY STATE AND YEAR

State	Incident Number	
<u>Texas</u>		
1950-52		
1953-55		
1956-58		
1959-61		
1962-64		
1965-67	S23	
1968-69		
1970-72		
1973-75		
1976-77		
1978-79		
<u>Utah</u>		
1950-52		
1953-55		
1956-58	S5	
1959-61		
1962-64		
1965-67		
1968-69		
1970-72		
1973-75	S56	S57
1976-77		
1978-79	S102	S109

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SURFACE FIRES BY STATE AND YEAR

State	Incident Number
<u>Vermont</u>	
1950-52	
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	
1970-72	
1973-75	S63
1976-77	
1978-79	
<u>Washington</u>	
1950-52	
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	S28
1970-72	
1973-75	
1976-77	S79
1978-79	

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SURFACE FIRES BY STATE AND YEAR

State	Incident Number	
<u>Wisconsin</u>		
1950-52		
1953-55		
1956-58		
1959-61		
1962-64	S17	S19
1965-67		
1968-69	S30	
1970-72		
1973-75		
1976-77		
1978-79	S100	

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UNDERGROUND FIRES BY ORE(S) WON AND YEAR

Ore(s) Won	Incident Number									
<u>Copper</u>										
1950-52	U6	U8	U9							
1953-55										
1956-58	U32	U33								
1959-61	U41	U49								
1962-64	U51	U53								
1965-67	U61									
1968-69										
1970-72	U69	U72	U77	U80	U81					
1973-75	U93	U94	U96	U97	U98	U99	U101	U102	U103	
	U104	U107	U108	U110	U114	U116	U119	U120	U122	
	U125	U129								
1976-77	U140									
1978-79	U154	U156	U159							
<u>Iron</u>										
1950-52	U2	U3	U4	U5						
1953-55	U16	U18								
1956-58	U19	U22	U23	U24	U25	U26	U27	U29	U30	
	U31	U34	U35	U36						
1959-61	U37	U38	U39	U40	U42	U43				
1962-64										
1965-67										
1968-69										
1970-72	U76									

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UNDERGROUND FIRES BY ORE(S) WON AND YEAR

Ore(s) Won	Incident Number									
<u>Iron</u> (Cont'd.)										
1973-75	U89	U90	U113	U124	U130	U132				
1976-77	U137									
1978-79										
<u>Silver</u>										
1950-52										
1953-55										
1956-58	U33									
1959-61										
1962-64	U51									
1965-67	U56	U61								
1968-69	U63									
1970-72	U68	U70	U71	U72	U75	U83				
1973-75	U88	U91	U96	U97	U98	U103	U104	U106	U107	
	U108	U114	U115	U116						
1976-77	U134	U138	U151	U152						
1978-79	U159	U162	U173	U174						
<u>Lead</u>										
1950-52	U1									
1953-55										
1956-58	U21									
1959-61										
1962-64	U52									

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UNDERGROUND FIRES BY ORE(S) WON AND YEAR

Ore(s) Won Incident Number

Lead (Cont'd.)

1965-67

1968-69 U63

1970-72 U68 U70 U72 U80 U83

1973-75 U96 U115 U125

1976-77 U133 U134 U138 U139 U143 U149

1978-79 U162 U169 U174

Zinc

1950-52 U1

1953-55

1956-58

1959-61

1962-64 U52

1965-67

1968-69 U63

1970-72 U68 U70 U80 U83 U84

1973-75 U94 U96 U115 U125

1976-77 U133 U134 U139 U149

1978-79 U161 U162 U166 U174

Salt

1950-52

1953-55

1956-58

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UNDERGROUND FIRES BY ORE(S) WON AND YEAR

Ore(s) Won	Incident Number				
------------	-----------------	--	--	--	--

Salt (Cont'd.)

1959-61

1962-64

1965-67

1968-69 U62

1970-72 U78 U82 U85

1973-75 U92 U100 U118 U126 U131

1976-77 U144 U153

1978-79 U160 U170 U172

Molybdenum

1950-52

1953-55

1956-58

1959-61

1962-64 U54

1965-67

1968-69 U65

1970-72

1973-75 U87 U111 U112 U123

1976-77 U145 U148

1978-79 U163 U165

Gold

1950-52

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 UNDERGROUND FIRES BY ORE(S) WON AND YEAR

Ore(s) Won	Incident Number
------------	-----------------

Gold (Cont'd.)

1953-55	U13				
1956-58					
1959-61					
1962-64					
1965-67	U56				
1968-69					
1970-72	U86				
1973-75	U103	U127			
1976-77	U135				
1978-79	U171				

Limestone

1950-52					
1953-55					
1956-58					
1959-61	U45				
1962-64					
1965-67					
1968-69					
1970-72	U66				
1973-75	U105				
1976-77	U141	U146	U147		
1978-79	U155				

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UNDERGROUND FIRES BY ORE(S) WON AND YEAR

Ore(s) Won	Incident Number
<u>Uranium</u>	
1950-52	
1953-55	
1956-58	
1959-61	U44
1962-64	U50
1965-67	
1968-69	U65
1970-72	U67
1973-75	U95
1976-77	U136 U150
1978-79	
<u>Clay</u>	
1950-52	
1953-55	U17
1956-58	
1959-61	
1962-64	
1965-67	U60
1968-69	
1970-72	U74
1973-75	U121
1976-77	

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UNDERGROUND FIRES BY ORE(S) WON AND YEAR

Ore(s) Won	Incident Number
------------	-----------------

Clay (Cont'd.)

1978-79

Magnetite

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67 U58

1968-69

1970-72

1973-75 U94 U117

1976-77

1978-79

Potash

1950-52

1953-55

1956-58 U20

1959-61

1962-64

1965-67

1968-69

1970-72 U79

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UNDERGROUND FIRES BY ORE(S) WON AND YEAR

Ore(s) Won Incident Number

Potash (Cont'd.)

1973-75

1976-77

1978-79

Trona

1950-52

1953-55

1956-58

1959-61 U46

1962-64

1965-67

1968-69

1970-72

1973-75

1976-77 U142

1978-79

Mercury

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67 U57 U59

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UNDERGROUND FIRES BY ORE(S) WON AND YEAR

Ore(s) Won Incident Number

Mercury (Cont'd.)

1968-69

1970-72

1973-75

1976-77

1978-79

Oil Shale

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69

1970-72

1973-75

1976-77

1978-79 U164 U167

Other

1950-52

1953-55 U11 ¹ U15 ²

¹ Gilsonite

² Pyrite

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UNDERGROUND FIRES BY ORE(S) WON AND YEAR

Ore(s) Won	Incident Number			
<u>Other (Cont'd.)</u>				
1956-58	U28	³		
1959-61				
1962-64				
1965-67				
1968-69				
1970-72				
1973-75	U109	⁴		
1976-77				
1978-79	U157	⁵	U158 ⁶	U159 ⁷ U168 ⁸
³ Tungsten			⁶ Marble	
⁴ Florspar			⁷ Antimony	
⁵ Crude Oil			⁸ Oil Storage	

Inactive

1950-52	U7		
1953-55	U10	U11	U12
1956-58			
1959-61			
1962-64			
1965-67			
1968-69	U64		

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UNDERGROUND FIRES BY ORE(S) WON AND YEAR

Ore(s) Won Incident Number

Inactive (Cont'd.)

1970-72

1973-75 U128

1976-77 U138

1978-79

Unspecified

1950-52

1953-55

1956-58

1959-61 U47 U48

1962-64 U55

1965-67

1968-69

1970-72 U73

1973-75

1976-77

1978-79

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SURFACE FIRES BY ORE(S) WON AND YEAR

Ore(s) Won Incident Number

Iron (Including
Taconite)

1950-52					
1953-55					
1956-58	S3				
1959-61	S8	S10	S11	S12	
1962-64	S15	S16	S18	S21	
1965-67					
1968-69	S31	S32			
1970-72	S36				
1973-75	S46				
1976-77	S80	S82			
1978-80	S103	S116	S117	S119	S120

Limestone

1950-52					
1953-55					
1956-58					
1959-61	S19				
1962-64	S20				
1965-67	S23				
1968-69	S33				
1970-72					
1973-75	S47	S53	S54	S59	
1976-77	S77	S78	S81	S83	S94 S95

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SURFACE FIRES BY ORE(S) WON AND YEAR

Ore(s) Won Incident Number

Limestone (Cont'd.)

1978-79 S97 S100 S101 S110 S112 S114

Lead

1950-52

1953-55

1956-58

1959-61

1962-64 S17

1965-67

1968-69 S25

1970-72 S35

1973-75 S51 S52 S55 S57 S66

1976-77

1978-79 S109

Sand and Gravel

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69 S28

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SURFACE FIRES BY ORE(S) WON AND YEAR

Ore(s) Won Incident Number

Sand and Gravel (Cont'd.)

1970-72	S37			
1973-75	S48	S58	S60	S62
1976-77	S79			
1978-79	S111	S113		

Silver

1950-52				
1953-55				
1956-58				
1959-61				
1962-64				
1965-67				
1968-69				
1970-72	S35	S40	S41	
1973-75	S51	S52	S57	S66
1976-77	S92			
1978-79				

Copper

1950-52	S1	S2		
1953-55				
1956-58				
1959-61				

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SURFACE FIRES BY ORE(S) WON AND YEAR

Ore(s) Won	Incident Number		
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Copper (Cont'd.)

1962-64			
1965-67			
1968-69			
1970-72	S35		
1973-75	S56	S61	S67
1976-77	S87	S93	
1978-79			

Zinc

1950-52			
1953-55			
1956-58			
1959-61			
1962-64	S17		
1965-67			
1968-69	S25		
1970-72			
1973-75	S51	S52	S66
1976-77			
1978-79	S105		

Molybdenum

1950-52
1953-55

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SURFACE FIRES BY ORE(S) WON AND YEAR

Ore(s) Won	Incident Number
<u>Molybdenum</u>	
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	
1970-72	
1973-75	S65
1976-77	
1978-80	S98 S115 S121
<u>Phosphate</u>	
1950-52	
1953-55	
1956-58	
1959-61	
1962-64	
1965-67	
1968-69	S29
1970-72	S38
1973-75	
1976-77	
1978-79	S118

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SURFACE FIRES BY ORE(S) WON AND YEAR

Ore(s) Won	Incident Number
------------	-----------------

Salt

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67 S24

1968-69

1970-72

1973-75 S50

1976-77

1978-79 S106

Uranium

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69

1970-72 S43

1973-75

1976-77

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SURFACE FIRES BY ORE(S) WON AND YEAR

Ore(s) Won Incident Number

Uranium (Cont'd.)

1978-80 S115 S121

Clay

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69

1970-72

1973-75

1976-77 S73 S74

1978-79

Antimony

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69

1970-72 S39

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SURFACE FIRES BY ORE(S) WON AND YEAR

Ore(s) Won	Incident Number
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Antimony (Cont'd.)

1973-75

1976-77

1978-79 S99

Slate

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69

1970-72

1973-75 S63

1976-77 S89

1978-79

Marble

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

Index II-12b

SURFACE FIRES BY ORE(S) WON AND YEAR

Ore(s) Won Incident Number

Marble (Cont'd.)

1968-69

1970-72

1973-75 S49

1976-77 S91

1978-79

Shale

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69

1970-72

1973-75 S64

1976-77 S76

1978-79

Bentonite

1950-52

1953-55

1956-58

1959-61

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SURFACE FIRES BY ORE(S) WON AND YEAR

Ore(s) Won Incident Number

Bentonite

1962-64

1965-67

1968-69

1970-72

1973-75

1976-77 S71 S85

1978-79

Other

1950-52

1953-55

1956-58 S5¹ S7²

1959-61 S9³

1962-64

1965-67 S22⁴

1968-69 S25⁵

1970-72 S44⁶

1973-75 S57⁷

1 Gilsonite

2 Mercury

3 Potash

4 Granite

5 Cadmium

6 Tin

7 Gold

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SURFACE FIRES BY ORE(S) WON AND YEAR

Ore(s) Won		Incident Number			
<u>Other (Cont'd.)</u>					
1976-77	S69 ⁸	S70 ⁹	S75 ¹⁰	S84 ¹¹	S88 ¹²
1978-79	S106 ¹³	S107 ¹⁴	S108 ¹⁵		
8	Magnetite		12	Barite	
9	Pozzolan		13	Aggregate	
10	Florspar		14	Diatomageous Earth	
11	Bauxite		15	Sandstone	

Inactive

1950-52					
1953-55					
1956-58	S4				
1959-61					
1962-64	S14				
1965-67					
1968-69	S26				
1970-72	S34				
1973-75					
1976-77	S86	S90			
1978-79					

Unspecified

1950-52

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SURFACE FIRES BY ORE(S) WON AND YEAR

Ore(s) Won	Incident Number	
<u>Unspecified</u> (Cont'd.)		
1953-55		
1956-58	S6	
1959-61		
1962-64	S13	
1965-67		
1968-69	S27	S30
1970-72	S42	S45
1973-75		
1976-77	S68	S72
1978-79	S96	S102

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UNDERGROUND FIRES BY SUCCESSFUL
EXTINGUISHING AGENT AND YEAR

Successful Extinguishing Agent	Incident Number									
<u>Water</u>										
1950-52	U2	U5	U6	U8	U9					
1953-55	U10	U11	U13							
1956-58	U19	U20	U22	U24	U28	U29	U30	U31	U35	
	U36									
1959-61	U38	U42	U43							
1962-64										
1965-67	U56	U59	U60	U61						
1968-69	U62	U63	U65							
1970-72	U68	U71	U72	U73	U78	U80	U82	U84	U86	
1973-75	U88	U89	U90	U92	U98	U104	U105	U108	U110	
	U114	U116	U117	U118	U119	U121	U123	U124	U125	
	U128	U130	U132							
1976-77	U135	U137	U138	U140	U143					
1978-79	U155	U162	U163	U166	U167	U169	U170	U172	U173	
<u>Dry Chemical</u>										
1950-52	U9									
1953-55										
1956-58	U20	U32	U36							
1959-61										
1962-64	U53									
1965-67										
1968-69	U63	U65								

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UNDERGROUND FIRES BY SUCCESSFUL
EXTINGUISHING AGENT AND YEAR

Successful Extinguishing Agent	Incident Number									
<u>Dry Chemical</u> (Cont'd.)										
1970-72	U68	U69	U70	U71	U82	U83	U84	U86		
1973-75	U87	U92	U93	U101	U102	U104	U107	U110	U111	
	U117	U119	U123	U126						
1976-77	U133	U137	U138	U139	U145	U148	U150	U153		
1978-79	U154	U160	U161	U162	U173					
<u>Sealing</u>										
1950-52	U2	U3	U4							
1953-55	U15	U16	U17	U18						
1956-58	U25	U35								
1959-61	U39	U40	U42	U43	U44	U49				
1962-64	U50	U54								
1965-67	U58	U59								
1968-69	U65									
1970-72	U74	U75	U77	U79	U85					
1973-75	U96	U99	U120	U122	U127	U129				
1976-77	U149									
1978-79	U164									
<u>Burned Out</u>										
1950-52	U1	U7								
1953-55	U12	U14								
1956-58	U21	U26								

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UNDERGROUND FIRES BY SUCCESSFUL
EXTINGUISHING AGENT AND YEAR

Successful Extinguishing Agent	Incident Number									
<u>Burned Out (Cont'd.)</u>										
1959-61	U37	U47								
1962-64	U52									
1965-67										
1968-69										
1970-72	U66	U67	U69	U79						
1973-75	U91	U93	U94	U105	U107	U112	U115	U127	U131	
1976-77	U134	U139	U141	U144	U147	U151	U152			
1978-79	U156	U157	U158	U161						
<u>Cut Off Electrical Power</u>										
1950-52										
1953-55										
1956-58	U23									
1959-61										
1962-64										
1965-67										
1968-69										
1970-72	U76									
1973-75	U105	U112	U114	U131						
1976-77	U140	U146								
1978-79	U163	U165	U174							

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UNDERGROUND FIRES BY SUCCESSFUL
EXTINGUISHING AGENT AND YEAR

Successful Extinguishing Agent	Incident Number	
<u>Foam</u>		
1950-52		
1953-55		
1956-58	U30	
1959-61		
1962-64	U53	U54
1965-67		
1968-69		
1970-72	U81	U82
1973-75	U97	U126
1976-77		
1978-79	U171	
<u>Carbon Dioxide</u>		
1950-52	U3	
1953-55		
1956-58	U27	U33
1959-61		
1962-64		
1965-67		
1968-69		
1970-72	U68	
1973-75	U102	
1976-77	U148	U153

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UNDERGROUND FIRES BY SUCCESSFUL
EXTINGUISHING AGENT AND YEAR

Successful Extinguishing Agent	Incident Number
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Carbon Dioxide (Cont'd.)

1978-79	U165
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Mud/Muck

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69

1970-72

1973-75	U107	U108
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1976-77	U138
---------	------

1978-79

Gas Turned Off

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69

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UNDERGROUND FIRES BY SUCCESSFUL
EXTINGUISHING AGENT AND YEAR

Successful Extinguishing Agent	Incident Number
-----------------------------------	-----------------

Gas Turned Off (Cont'd.)

1970-72

1973-75 U95 U113

1976-77

1978-79

Flooding

1950-52

1953-55

1956-58 U34

1959-61

1962-64 U55

1965-67

1968-69

1970-72

1973-75

1976-77

1978-79

Other

1950-52

1953-55

1956-58 U27 ¹

Dry Ice

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UNDERGROUND FIRES BY SUCCESSFUL
EXTINGUISHING AGENT AND YEAR

Successful Extinguishing Agent	Incident Number
-----------------------------------	-----------------

Other (Cont'd.)

1959-61

1962-64

1965-67 U56 ²

1968-69

1970-72

1973-75 U100 ³ U103 ⁴

1976-77

1978-79

² Sand

³ Salt

⁴ Combustible Scattered

Undetermined

1950-52

1953-55

1956-58

1959-61 U41 U45 U46 U48

1962-64 U51

1965-67 U57

1968-69 U64

1970-72

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UNDERGROUND FIRES BY SUCCESSFUL
EXTINGUISHING AGENT AND YEAR

Successful Extinguishing Agent	Incident Number	
<u>Undetermined</u> (Cont'd.)		
1973-75	U106	U109
1976-77	U136	U142
1978-79	U159	U168

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SURFACE FIRES BY SUCCESSFUL
EXTINGUISHING AGENT AND YEAR

Successful Extinguishing Agent	Incident Number									
<u>Water</u>										
1950-52	S1									
1953-55	S2									
1956-58	S7									
1959-61	S8	S10								
1962-64	S13	S14	S18	S19	S21					
1965-67	S23									
1968-69	S25	S31	S32	S33						
1970-72	S34	S35	S39	S40	S41	S43	S44			
1973-75	S51	S52	S53	S55	S59	S61	S64	S66		
1976-77	S71	S72	S75	S83	S86	S89	S90	S92	S93	
	S94	S95								
1978-79	S97	S99	S100	S101	S103	S104	S107	S114	S116	
	S117	S118	S119							

Burned Out

1950-52				
1953-55				
1956-58	S3	S4	S5	S6
1959-61	S9	S11		
1962-64	S15	S16	S17	S20
1965-67				
1968-69				
1970-72	S39			

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 SURFACE FIRES BY SUCCESSFUL
 EXTINGUISHING AGENT AND YEAR

Successful Extinguishing Agent	Incident Number
-----------------------------------	-----------------

Burned Out (Cont'd.)

1973-75	S49	S65			
1976-77	S69	S74	S84	S88	
1978-79					

Dry Chemical

1950-52					
1953-55					
1956-58	S7				
1959-61					
1962-64					
1965-67					
1968-69	S28				
1970-72	S36	S38			
1973-75	S46	S67			
1976-77	S71	S78	S80	S82	S94
1978-80	S111	S120			

Smothered

1950-52
1953-55
1956-58
1959-61
1962-64

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SURFACE FIRES BY SUCCESSFUL
EXTINGUISHING AGENT AND YEAR

Successful Extinguishing Agent	Incident Number
-----------------------------------	-----------------

Smothered (Cont'd.)

1965-67	S22	
1968-69	S27	S29
1970-72		
1973-75	S50	
1976-77	S70	S81
1978-79	S105	S108

Carbon Dioxide

1950-52		
1953-55		
1956-58		
1959-61		
1962-64		
1965-67		
1968-69	S28	
1970-72		
1973-75	S48	
1976-77		
1978-79	S109	

Cut Off
Electrical Power

1950-52
1953-55

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SURFACE FIRES BY SUCCESSFUL
EXTINGUISHING AGENT AND YEAR

Successful Extinguishing Agent	Incident Number
-----------------------------------	-----------------

Cut Off
Electrical Power (Cont'd.)

1956-58

1959-61

1962-64 S19

1965-67

1968-69

1970-72

1973-75

1976-77 S78 S92

1978-79

Other

1950-52

1953-55

1956-58

1959-61

1962-64

1965-67

1968-69

1970-72

1973-75 S48 ¹ S57 ²

¹ Cloth

Snow

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SURFACE FIRES BY SUCCESSFUL
EXTINGUISHING AGENT AND YEAR

Successful Extinguishing Agent	Incident Number									
<u>Other (Cont'd.)</u>										
1976-77	S77	³	S86	⁴						
1978-79										
³ Lime Dust										
⁴ Sealing										
<u>Undetermined</u>										
1950-52										
1953-55										
1956-58										
1959-61	S12									
1962-64										
1965-67	S24									
1968-69	S26	S30								
1970-72	S37	S42	S45							
1973-75	S47	S54	S56	S58	S60	S62	S63			
1976-77	S68	S73	S76	S79	S85	S91				
1978-80	S96	S98	S102	S106	S110	S112	S113	S115	S121	

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UNDERGROUND FIRE INCIDENT NUMBERS
BY PERIODICAL ARTICLE NUMBER

<u>Underground Fire Incident Numbers</u>	<u>Periodical Article Numbers</u>
U27	P1
U49	P2, P2B, P2C
U62	P3
U70	P4
U75	P5, P5B, P5C, P5D, P5E, P5F, P5G, P5H, P5I, P5J, P5K, P5L, P5M, P5N, P5O, P5P, P5Q, P5R, P5S, P5T, P5U, P5V, P5W, P5X, P5Y, P5Z, P5AA, P5BB, P5CC, P5DD, P5EE, P5FF, P5GG, P5HH, P5II, P5JJ, P5KK, P5LL, P5MM, P5NN
Not Located	P6, P6B
U99	P7

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METAL AND NONMETAL MINES

NON-REPORTABLE UNDERGROUND FIRES
ITEM TABULATIONS

Item	Incident Number							
<u>Ignition Source</u>								
Electrical	UN2	UN3	UN7	UN9	UN10	UN12	UN13	UN14
Cutting Torch	UN4	UN11	UN15					
Friction	UN6	UN8						
Engine Heat	UN17							
Spontaneous Combustion	UN16							
Undetermined	UN1	UN5						
<u>Burning Substance</u>								
Wiring & Insulation	UN2	UN7	UN9	UN10	UN12	UN13	UN14	
Timber	UN1	UN11	UN13	UN14	UN15	UN16		
Lubricants	UN3	UN6	UN8	UN9	UN17			
Hydraulic Fluid	UN5							
Explosives	UN5							
Rubber Hose	UN4							
<u>Location</u>								
Haulageway/Drift	UN5	UN6	UN8	UN9	UN11	UN13	UN15	UN17
Substation/Switchbox	UN2	UN7	UN14					
Locomotive (Electrical)	UN10	UN12						
Shaft	UN1							
Mined-Out Area	UN16							

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METAL AND NONMETAL MINES
 NON-REPORTABLE UNDERGROUND FIRES
 ITEM TABULATIONS

Item	Incident Number							
<u>Location (Cont'd.)</u>								
Unspecified	UN3	UN4						
<u>Equipment</u>								
Substation/Switch-box	UN2	UN7	UN14					
Utility Vehicle	UN3	UN17						
Locomotive	UN10	UN12						
Loader	UN5							
Haulage Truck	UN8							
Water Truck	UN6							
Welding Equipment	UN4							
Unspecified Mobile Equipment	UN9							
None	UN1	UN11	UN13	UN15	UN16			
<u>Successful Extinguishing Agent</u>								
Portable Extinguisher	UN1 UN11	UN2 UN13	UN3 UN14	UN4 UN15	UN5	UN6	UN8	UN9
Power Disconnect	UN7	UN10	UN12	UN13	UN14			
Water	UN1	UN5	UN14	UN15				
Carbon Dioxide	UN10							
Sealing	UN16							
Salt	UN17							

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METAL AND NONMETAL MINES
 NON-REPORTABLE SURFACE FIRES
 ITEM TABULATIONS

Item	Incident Number							
<u>Ignition Source</u>								
Electrical	SN5	SN6	SN8					
Cutting Torch	SN9	SN12						
Exhaust Manifold	SN10	SN11						
Overheated Cooling Grids	SN7							
Lightning	SN13							
Unspecified	SN1	SN2	SN3	SN4				
<u>Burning Substance</u>								
Hydraulic Fluid	SN1	SN2	SN6	SN10				
Lubricants	SN7	SN8	SN12					
Diesel Fuel	SN3	SN11						
Wiring & Insula- tion	SN5	SN8						
Rubber Hose	SN1	SN2						
Flammable Gas (Acetylene & Oxygen)	SN4							
Cork Insulation	SN9							
Unspecified	SN13							
<u>Location</u>								
Mobile Machinery	SN1	SN2	SN3	SN6	SN7	SN8	SN10	SN11
	SN12							
Power Station	SN5							

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METAL AND NONMETAL MINES
 NON-REPORTABLE SURFACE FIRES
 ITEM TABULATIONS

Item	Incident Number					
<u>Location (Cont'd.)</u>						
Mill Building	SN9					
Unspecified	SN4	SN13				
<u>Equipment</u>						
Haulage Trucks	SN7	SN10	SN11			
Front End Loader	SN1	SN2				
Welding Truck/ Equipment	SN3	SN4				
Backhoe	SN6					
Transformer	SN5					
Unspecified Mobile Equipment	SN8	SN12				
None	SN9	SN13				
<u>Successful Extinguishing Agent</u>						
Portable Extinguishers	SN6	SN7	SN8	SN10	SN11	SN12
Power Disconnect	SN5	SN8				
Buried	SN2	SN3				
Water	SN9					
Burned Out	SN1					
Fire Suppression System	SN11					
Unspecified	SN4	SN13				

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16. Abstract (Limit: 200 words) The objectives of this three-volume report were to develop an annotated bibliography that included MSHA accident reports and periodicals, to gather data on nonreportable fires, and to conduct statistical analyses on the data to delineate trends for the period 1950-79. The data were acquired from periodicals, MSHA fire reports, and mine safety directors. Volume II contains a chronological list of mine fires and 15 indexes to assist in locating fire incident reports of interest.				
17. Document Analysis				
a. Descriptors		Mining equipment		
Mine fires				
Metal and nonmetal				
Ignition sources				
Burning substances				
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This report is a summary of the work recently completed as part of this contract during the period September 20, 1979 to July 15, 1980. This report was first submitted by the authors on July 22, 1980.