

UNITED STATES  
DEPARTMENT OF LABOR  
MINE SAFETY AND HEALTH ADMINISTRATION  
DISTRICT 3

REPORT OF INVESTIGATION  
(SURFACE AREA OF UNDERGROUND MINE)

MULTIPLE FATAL SUFFOCATION ACCIDENT

Loveridge No. 22 (ID No. 46 01433)  
Consolidation Coal Company  
Fairview, Marion County, West Virginia

February 6, 1986

by

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Originating Office - Mine Safety and Health Administration  
4015 Wilson Boulevard, Arlington, Virginia 22203  
Jerry L. Spicer, Administrator for Coal Mine Safety and Health



**Authority**—This report is based on an investigation made pursuant to the Federal Mine Safety and Health Act of 1977, Public Law 91-173, as amended by Public Law 95-164.

**Section A—Identification Data**

1. Title of investigation: Multiple Fatal Suffocation	2. Date MSHA investigation started: February 6, 1986
3. Report release date: November 17, 1986	4. Mine: Loveridge No. 22
5. Mine ID number: 46 01433	6. Company: Consolidation Coal Company
7. Town, County, State: Fairview, Marion County, West Virginia	8. Author(s): Timothy J. Thompson, Roger W. Uhazie, Joseph Tortorea, A. Keith Watson, Stephen Stock

**Section B—Mine Information**

9. Daily production: 13,077	10. Surface employment: 56
11. Underground employment: 349	12. Name of coalbed: Pittsburgh
13. Thickness of coalbed: 84 inches	

**Section C—Last Quarter Injury Frequency Rate (HSAC) for:**

14. Industry: 5.31	15. This operation: 2.46
16. Training program approved: March 13, 1984	17. Mine Profile Rating: N/A

**Section D—Originating Office**

18. Mine Safety and Health Administration Office of the Administrator, CMS&H	Address: 4015 Wilson Boulevard Arlington, Virginia 22203
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**Section E—Abstract**

At about 11:00 a.m., February 6, 1986, a multiple fatal suffocation accident occurred in the raw coal storage bin at the preparation plant for the Loveridge No. 22 mine, Consolidation Coal Company. Seven persons were standing atop the raw coal pile at the time of the accident. Five of the persons fell through a cavity in the pile and were suffocated. The other two persons were uninjured. The names of the victims, their ages, job classification and employer are listed in Appendix A.

The seven men had gathered and walked to the top of the raw coal pile to observe damage to an overhead structure when the accident occurred. Prior to the accident a cavity existed in the pile above the number 17 feeder. The accident occurred when persons were permitted to walk or stand on the storage pile when there was a danger created by the reclaiming operations.

**Section F—Mine Organization**

Company officials:	Name	Address
19. Chief Executive Officer:	B. R. Brown	Consol Plaza, 1800 Washington Road Pittsburgh, PA 15241
20. Superintendent:	Robert Omear	P.O. Box 1632 Fairmont, WV 25554
21. Regional Mgr. of Safety:	Charles E. Bane	P.O. Box 1314 Morgantown, WV 26507
22. Principle officer—H&S:	Robert Omear	P.O. Box 1632 Fairmont, WV 25554
23. Labor Organization:	United Mine Workers of America	900 Fifteenth Street, N.W. Washington, D.C. 20005
24. Chairman—H&S Committee:	James Ammons	P.O. Box 125 Fairview, WV 26570

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## GENERAL INFORMATION

The Loveridge No. 22 mine, located near Fairview, Marion County, West Virginia, was opened in 1956. It is operated by the Fairmont Operation of the Northern West Virginia Region of Consolidation Coal Company, which is a subsidiary of Conoco, Inc., of Stamford, Connecticut.

The principal corporate officers of the Northern West Virginia Region of Consolidation Coal Company at the time of the accident were:

### Northern West Virginia Region

Darrell Auch	Senior Vice President of Mining
Charles E. Bane	Safety Director

The principal management officials of the Fairmont Operation of the Northern West Virginia Region of Consolidation Coal Company and the Loveridge No. 22 mine at the time of the accident were:

### Fairmont Operation

Danny Quesenberry	Vice President
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### Loveridge No. 22

Robert E. Omeary	General Superintendent
Robert R. Johnson, Jr.	Preparation Plant Superintendent
Donald E. Glover	Safety Supervisor

Industrial Resources, Inc., a subsidiary of Industrial Contracting of Fairmont, Inc., employs 70 persons and is involved in engineering and design of mine structures. The principal corporate officers of Industrial Resources, Inc., at the time of the accident were:

### Industrial Resources, Inc.

Donald Hoylman	President
Steven Hoylman	Vice President
David R. Kovach	Vice President of Operations

The Loveridge No. 22 mine is opened by one slope and nine airshafts into the Pittsburgh coalbed which averages 84 inches in thickness. A total of 405 persons are employed at the mine, 349 underground and 56 on the surface. Production from the mine averages just over 13,000 tons per day on three coal-producing shifts, 5 days a week.

Coal that is produced at the Loveridge No. 22 mine is transported to the surface via a slope conveyor belt. It is then dumped onto the tripper belt which in turn distributes the coal into the raw coal storage bin where the accident occurred. Here, a series of 26 vibratory feeders are available to provide desired coal flow to the preparation plant. When coal leaves the raw coal storage bin, it is transported by conveyor belt to the top of the preparation plant. From this point, the coal goes through a series of primary

## COMMENTARY

### EVENTS LEADING UP TO ACCIDENT

On Wednesday, February 5, 1986, James D. Watson, afternoon shift foreman for the preparation plant, began his shift at 2:30 p.m. At the start of the shift, he gave the employees instructions on their work assignments. Mike Begunich, mechanic, was assigned the duties of plant operator. Begunich was responsible for operating and controlling the vibrating feeders which draw coal from the raw coal storage bin and deliver it by belts to the plant for processing. The plant operated during the shift until around 9:30 p.m. when the clean coal silos were filled to capacity. During the shift, coal was drawn through the numbers 15, 16, 17 and 18 feeders.

Sometime between the start of the shift and 5:30 p.m., Watson found damaged rails in the tripper belt structure located above the raw coal storage bin. He made this examination from the overhead catwalk. Watson placed the overhead belt tripper on manual and positioned it above the four feeders which were being operated.

Watson went below the raw coal storage bin to make an examination of the feeders sometime between 6:00 p.m. and 6:30 p.m. He determined which feeders had either coal or rock in it. He also viewed the coal pile from along the storage bin without going onto the pile. Feeders number 15 through 18 continued to operate until 9:30 p.m.

Watson then gave instructions to John W. Jeffries, afternoon shift hoist operator, to make a roadway onto the coal pile before it got dark using the D-8 Caterpillar dozer. This was necessary because the overhead belt tripper was dumping from a stationary position. The dozer would have to be used in order to get the coal spread out over the entire bin. Watson also asked Jeffries if he would stay over until at least midnight to push coal. Jeffries operated the dozer crossing the bin along the north edge (low numbered feeders) and then started pushing the coal to make a roadway along the west side (even numbered feeders). He also pushed coal into the area of the number 26 feeder to replenish the coal supply there. For about an hour or so, Jeffries pushed the coal along both sides of the bin to make roadways. He did not pass directly over the feeders during these operations. Jeffries then went back to working on supplies.

Watson contacted Robert R. Johnson, Jr., superintendent of the preparation plant, at home and informed him of the damaged rails on the tripper belt structure. Watson told Johnson he had moved the tripper away from the damaged area and did not think the damage was serious.

Between 9:00 and 9:30 p.m., the coal processing in the preparation plant was terminated when the clean coal silos became filled to capacity. At this time all of the feeders were turned off and no more coal was drawn from the raw coal storage bin. Approximately 7,000 tons of raw coal had been drawn from the bin on the afternoon shift using the numbers 15 through 18 feeders. The overhead belt tripper continued to dump coal onto the raw coal bin over the area of the same four feeders.

and secondary screens, crushers, distribution tables and centrifical dryers until the maximum amount of refuse is removed. The refuse is transported to the refuse bin located near the slope entrance. The cleaned coal is transported via conveyor belt to one of the two clean coal storage silos. Coal is then loaded into railroad cars from the silos. When the silos are full, the preparation plant is not run. Normally, the preparation plant processes between 6,000 and 7,000 tons of coal per operating shift.

Communications throughout the preparation plant are provided by Gai-Tronics, Corp. pagers. Communication with the mobile equipment used around the preparation plant is provided by Motorola two-way radios. The base unit for these radios is in the preparation plant control room located on the seventh floor.

The last Health and Safety inspection of the entire mine was completed on December 30, 1985. The mine is in a 103(i) 5-day Spot inspection status due to high methane liberation.

Of the five persons receiving fatal injuries in this accident, three were employees of Consolidation Coal Company and two were employees of Industrial Resources, Inc. None of the victims worked at the Loveridge No. 22 mine. All of the victims were at the raw coal storage bin to examine damage to a tripper belt structure. Background information on the victims is as follows:

Joseph E. Dunn was a Senior Design Manager from Consol's Central Engineering Department in Pittsburgh, Pennsylvania. He was 50 years old and had been with Consolidation Coal Company for 9 months.

Joseph W. Leonard, IV was an Assistant Preparation Engineer for Consol's Northern West Virginia Regional Engineering Department in Morgantown, West Virginia. He was 29 years old and had been with Consolidation Coal Company for just over 7 years.

Roger B. Alke was a Supervisor of Design and Construction for Consol's Northern West Virginia Regional Engineering Department in Morgantown, West Virginia. He was 36 years old and had been with Consolidation Coal Company for 8 years and 7 months.

Ronald E. Bell was a Project Engineer for Industrial Resources, Inc., of Fairmont, West Virginia. He was 39 years old and had been with Industrial Resources, Inc., for 17-1/2 years.

David R. Kovach was the Vice President of Operations for Industrial Resources, Inc., of Fairmont, West Virginia. He was 41 years old and had been with Industrial Resources, Inc., for 15-1/2 years.

Robert K. Riley, dayshift plant foreman, arrived around 5:40 a.m. He was informed by Simmons of the condition of the structure. Riley and Johnson discussed the belt structure problem and decided to go up on the raw coal storage pile to examine the damage. They went onto the coal pile at around 6:00 a.m. to make this assessment. At this time the plant was not operating, no feeders were running, and the coal was piled to within 3 to 6 feet of the overhead belt structure with a high point in the area of the number 15 feeder. Coal was still being dumped into the bin. Neither Johnson nor Riley made any examination of the feeders from under the bin before going onto the coal pile. They spent about 20 minutes on the pile making their examination and determined that the damage was serious. Johnson went to call Roger Alke, Supervisor of Design and Construction for the Northern West Virginia Region of Consolidation Coal Company, at his home and asked him to come to the mine to assess the problem.

Sometime between 6:30 and 6:45 a.m., they began loading the train and at that time, Simmons was in the operator's control room with Morrison. Simmons gave Morrison instructions to start up the plant when the light went out on the control panel, indicating that the clean coal silo was able to take in coal. He did not specifically tell Morrison which feeders to run or not to run.

After 50 to 100 tons of clean coal were loaded out of the silo and into the train, a problem occurred at the load out. Simmons instructed Morrison to draw off 800 tons per hour of raw coal until the silo refilled or until the train started loading again. Simmons only observed Morrison start the number 3, 4, 5, 6, 7 and 8 feeders. While Simmons was in the control room, Riley contacted Morrison and told him to take coal from both ends of the bin, but to take more from the low numbered feeders because that was where the coal was being dumped. Morrison asked Simmons why he was given those instructions. Simmons told him that if Riley gave him those instructions then he should follow them. Then Simmons left the control room.

Robert Omear, General Superintendent of Loveridge mine, arrived at around 7:05 a.m. He was met in his office by Johnson who discussed the damage to the structure. Johnson indicated that they might have to idle the plant Friday to make repairs. Omear called Danny Quesenberry, Vice President of Fairmont Operations, Consolidation Coal Company, to inform him of the problem. Johnson left Omear and went back to the preparation plant where he found Roger Alke in the plant office. Johnson traveled with Alke and Riley onto the raw coal storage pile to survey the damage. At that time some feeders were running, but there was no noticeable change in the height of the coal pile. The three men returned to the preparation plant office and Alke called Joe Leonard, Assistant Preparation Plant Engineer for the Northern West Virginia Region of Consolidation Coal Company, and informed him of the problem. Leonard indicated he would contact Industrial Resources, Inc.

Between 8:30 and 9:00 a.m., Omear went to the raw coal storage bin. He met with Johnson and Alke on the coal pile. No feeders were believed to be running in the area of the damaged structure. The pile was about 8 feet below the structure in this area. After being there for 10 to 15 minutes, Omear left the pile. As Omear was leaving, Richard Reiger, Technical Assistant, Fairmont Operations, Consolidation Coal Company, arrived on site and went to the storage pile. After approximately 10 minutes, Johnson, Alke and Reiger

After 9:30 p.m. Jeffries reentered the bin area on the dozer and began to push the coal from the dumping area towards the south end of the bin (high numbered feeders). In doing this, the dozer passed directly over the feeders. Around 9:40 p.m. Ronald Deem, maintenance foreman, arrived at the plant to begin his shift. Shortly thereafter, Kent Simmons, night shift plant foreman, started his shift. Both men were advised by Watson of the damage to the overhead belt structure and that the tripper had been manually positioned.

Around 11:00 p.m. Simmons and Deem went to the bin to assess the damage to the overhead structure. They observed the dozer being operated by Jeffries in the bin. Simmons instructed Jeffries to stock pile coal as high as he could from where the coal was being dumped to the far end of the bin (high numbered feeders) and under the damaged area. He wanted the coal piled high so they could work on the structure from on top of the pile. Simmons and Deem then went up into the head house and out onto the catwalk above the raw coal storage bin to examine the damage to the structure. They moved the belt tripper 10 to 15 feet back toward the low numbered feeders, away from the damaged area.

Before Watson left, he observed Jeffries pushing coal towards the numbers 3 and 4 feeders and saw that the coal was still being dumped into the bin. He left the mine at approximately 11:30 p.m.

Sometime between 11:30 and 11:45 p.m. Simmons and Deem went down under the bin to make an examination of the feeders. Simmons checked the odd numbered feeders while Deem examined the even numbered feeders. Nothing unusual was encountered, except that Simmons did find that the number 21 feeder was blocked by rock.

After completing the examination of the feeders, the midnight crew was given their assignments. Since the clean coal silos were full, no coal could be drawn from the bin until the next train arrived for loading. Maurice Morrison, midnight shift plant operator, was assigned to work with the mechanic doing repair work on the diester tables and installing belt skirting. Jeffries continued operating the dozer in the bin. He passed directly over the number 17 feeder numerous times that night.

At approximately 2:00 a.m., Deem observed that the raw coal storage pile from the number 20 feeder to the number 26 feeder was stacked to just under the structure and that the dozer was continuing to push coal to that end of the bin. Jeffries operated the dozer until around 4:00 a.m. at which time the dozer broke down. By that time he had pushed coal to within 2-3 feet of the overhead structure from where the tripper was located to the number 26 feeder.

A little before 5:00 a.m. Johnson arrived at the mine. He spoke to Deem at the clean coal silo. Deem suggested Johnson take a look at the damage to the overhead belt structure because he believed the damage was more serious than originally reported.

Sometime between 5:00 and 5:30 a.m. Simmons went back up on the overhead belt structure and relocated the tripper to the north end of the bin. The train had arrived sometime after 5:00 a.m. and the crew checked the train in preparation of loading. At about 5:30 a.m. Simmons also spoke to Johnson about the damage to the tripper structure.



from the number 17 feeder. The bodies continued to be recovered from feeder number 17 until the fifth victim was recovered at 12:07 p.m. As the victims were taken out of the feeder, each was given cardiovascular pulmonary resuscitation by the emergency medical technicians who had arrived at the scene. No vital signs were detected from any of the victims.

It was decided to continue to operate feeders 15 and 16, 17 and 18, and 21 and 22 to assure that no other persons had been involved in the accident (feeders 19 and 20 had been disabled for the past year). At approximately 3:30 p.m., the bin in the area of these feeders was empty and no additional victims were found.

#### ACTIVITIES OF MSHA PERSONNEL

At 11:05 a.m., February 6, 1986, Frank Bowers, Coal Mine Inspector, was underground at the Flat Run Portal of Loveridge No. 22 mine when he was notified of an accident on the surface by Brad Swinger, Assistant Mine foreman. When he arrived outside, Bowers notified the Fairmont field office. James Satterfield, Supervisory Coal Mine Safety and Health Inspector, the Subdistrict and District offices in Morgantown, West Virginia, were contacted.

The first MSHA employees to arrive at the accident site were Edwin Fetty and Spencer Shriver, Coal Mine Inspectors. A 103(k) Order was issued by Fetty to assure the safety of any persons in the area of the raw coal storage bin. Over the course of the next hour, several MSHA personnel arrived and assisted in the recovery operations. Preliminary information was gathered and arrangements were made to begin the investigation into the cause of the accident at 9:00 a.m., Friday, February 7, 1986.

#### INVESTIGATION

On the day of the accident, MSHA participants organized an investigation team and assembled near the mine site. The investigation was conducted jointly with the West Virginia Department of Energy Officials and employees of Consolidation Coal Company and Industrial Resources, Inc., along with officials of the United Mine Workers of America. A list of persons who participated in the investigation is in Appendix B.

The on-site investigation was started on February 7, 1986. Visual examinations were made of the raw coal storage bin, overhead belt tripper structure, draw-off tunnel, and the preparation plant control room. Photographs were taken of areas as necessary.

On February 7 and 8, 1986, representatives of MSHA interviewed persons having knowledge of the conditions prior to the accident, details of the accident and/or recovery operations. Each person being interviewed was sworn in prior to giving statements. Officials and employees of Consolidation Coal Company and Loveridge No. 22 mine along with an official of Industrial Resources, Inc., provided information voluntarily. The names of these persons are in Appendix C. Handwritten notes of the statements were made and used in the assembly of this report.

joined Omeat at the plant office to decide what repairs had to be made to the tripper belt structure. Johnson contacted Morrison and told him not to take coal from the middle of the raw coal bin. After going to the storage bin to look at the damage, Joe Leonard joined the discussion at the plant office. It was decided that Leonard would supervise the repair work.

At approximately 9:30 a.m., Omeat and Reiger left the meeting to go underground. As they were leaving, Joseph Dunn, Senior Design Manager, and Gary Dadisman, Senior Contract Administrator, both for Consolidation Coal Company, arrived on site and joined the discussion concerning the damaged structure. Their visit to the mine was not related to the structure damage; however, Dunn offered suggestions concerning the proposed repairs. Sometime near the end of their discussion, David Kovach, Vice President, and Ronald Bell, Project Engineer, both for Industrial Resources, Inc., arrived at the plant. It was decided the group, which now consisted of seven persons, would go to the raw coal storage bin and inspect the damaged tripper belt structure.

#### THE ACCIDENT

At approximately 11:00 a.m., the men approached the storage bin from the north end. Johnson instructed them to travel along the edge of the bin until reaching the center before going onto the storage pile. He also informed them that the feeders were running on both ends of the storage bin. The men traveled onto the storage pile in the vicinity of the number 17 feeder and surveyed the damage. Johnson and Dadisman ascended to the highest point on the pile, approximately 15 feet from the other five men, towards the number 15 feeder. Gary Dadisman turned and witnessed three of the five men disappear rapidly into a 4 to 6 foot diameter hole. The hole quickly filled, leaving a cone shaped crater 10 feet in diameter and 3 feet deep. When Johnson turned toward the accident area he observed a depression where the five men had been standing.

#### THE RECOVERY

Johnson led the way off the pile and stopped at a phone while Dadisman ran to the office to get help. Johnson gave Morrison instructions to shut down the plant and to get shovels and ropes to start digging for the men. Morrison shut down the plant and began gathering men to begin the recovery. Riley made a call to the emergency squads for assistance and gathered his crew to assist in the recovery. Johnson tied off Riley and two other workmen to the overhead framework and had them descend into the crater with shovels in an attempt to free the men. Some workmen were sent under the bin to start shoveling out the feeders. Johnson checked all the feeders and found them all to be full. Omeat arrived from underground and discussed with Johnson the possibility of running the feeders since no progress was being made by shoveling. It was decided that the only way the men could be recovered would be to run the feeders. Morrison and Riley went to the preparation plant control room while all men were removed from on top of the pile. Feeders number 21 and 22 were started first. Shortly thereafter, it was decided to run 17 and 18. Within 4 to 5 minutes, at 11:40 a.m., the body of David Kovach appeared in the opening

until 6:45 a.m. They also examined the damage to the tripper belt structure and moved the tripper 10 to 15 feet back toward the low numbered feeders. Normal procedures for examining the raw coal storage bin for cavities includes an examination of the feeder chutes for coal. If the chutes contain coal then it is assumed that no cavity exists. If a feeder chute is empty, then an examination of the raw coal above that feeder is made. When there is no opening through the coal pile to an empty feeder, a cavity is assumed to exist.

6. During the course of the Wednesday afternoon shift, the clean coal silos were filled. The hoist operator, Jeffries, was instructed to operate the Caterpillar D-8 bulldozer in the raw coal storage bin. He was told to push the coal so that it was piled very close to the overhead tripper belt structure. Jeffries proceeded to build the coal pile so that it was within 2 to 3 feet of the tripper belt structure over most of the southern half of the storage area (between the number 13 feeder and the number 26 feeder). The tripper belt filled the northern end of the storage bin with coal from the mine during the afternoon and night shifts.

7. Simmons was in the control room with Morrison at the time the preparation plant was started. Simmons stated he gave no specific instructions to Morrison concerning the start up procedures, however, he did tell him to start the preparation plant when the light on the control panel for the clean coal silos went out. This light gives him an indication that coal was being loaded into the railroad cars. Simmons stated approximately 50 to 100 tons were loaded from the clean coal silos when a problem developed at the load-out. He indicated that he was still in the control room when Riley contacted Morrison and gave instructions to run those feeders closest to the slate bin but stated that he only heard Morrison's half of the conversation. He observed Morrison starting feeders 3 through 8 and instructed him to run the feeders at 800 tons per hour until he filled the clean coal silo or the train was being loaded. As far as he knew, no other feeders were run. Simmons then left the control room.

8. Riley stated that under normal conditions, the plant operator would start all feeders underneath the raw coal bin. He stated he believed that Simmons had instructed Morrison to remove coal from the north end of the raw coal bin using only the low numbered feeders. He later stated that he was not sure Morrison was given those instructions so he (Riley) issued instructions to Morrison over the telephone to operate four feeders on each side of the bin.

9. Deem stated that he was at the loadout when he heard Riley issue instructions over the telephone for Morrison to run the low numbered feeders. Deem was at the loadout between 6:00 a.m. and 11:00 a.m. (except for a short period of time around 8:00 a.m.) because of the trouble during the clean coal loading operations.

10. At approximately 7:00 a.m., Johnson went to the mine office to talk to Omeare about the damage to the tripper belt structure. He then returned to the preparation plant. He, Riley and Alke went up on the raw coal storage pile to inspect the damage. Johnson said that when he returned to the office he called and instructed the plant operator not to load out of the middle feeders. The plant operator acknowledged that he understood the instructions.

## DISCUSSION AND EVALUATION

This section is offered to support the findings of fact and conclusion. It is intended to show alternative rationale which may support possible and probable causes.

1. The raw coal storage bin at the Loveridge No. 22 mine is a concrete structure 225 feet long by 90 feet wide by 30 feet deep built over a series of 26 vibratory feeders. Approximately 20 feet of the structure height is above ground. The outer walls of the bin are vertical for the uppermost 10 feet; then they slope toward the center of the bin for the next 20 feet. The bottom of the storage area is roughly 195 feet long by 30 feet wide. Rated capacity of the bin is around 15,000 tons. (See Sketch)
2. Start up of the preparation plant is a three phase procedure controlled by the plant operator. Pushing the automatic start button once energizes eleven groups of circuits controlling several conveyor belts, dryers, pumps, etc. Pushing the automatic start button a second time energizes nine more groups of circuits including additional pumps, conveyor belts, distribution tables, screens, etc. When the automatic start button is pushed for the third time, the last three groups of circuits are energized. Among other equipment, these three circuits supply power to the conveyor belt under the raw coal storage bin and the feeders. The feeders are controlled by manually activating them in pairs. The plant operator can operate the feeders in any combination and is given the flexibility to use them as needed to provide a uniform rate of coal flow to the preparation plant and to maintain the raw coal storage pile relatively even in height.
3. The feeders under the storage bin can only be controlled from the preparation plant control room. Each pair of feeders has a push button for activation, a rheostat for control of the degree of vibration, and an indicator light showing which pairs of feeders are in use. These indicator lights are located in the upper left hand corner of the control panel. Due to their small size and location, these lights are not easily observable while at the control panel. Also, the plant operator must leave the control room and walk approximately 50 feet to a window to observe the raw coal storage area or anyone working in this area.
4. The last time any feeders had been run under the raw coal storage bin prior to the day of the accident was the previous afternoon shift on Wednesday, February 5. During this shift, the No. 15, 16, 17 and 18 feeders were utilized to supply coal to the preparation plant. An examination of the feeder area was made and no problems found. Examination of the storage bin area revealed the damage to tripper structure. During this examination the overhead tripper was manually located in a stationary position dumping coal directly over these feeders. The preparation plant, feeders and tripper belt operated in this manner for most of the afternoon shift, and processed approximately 7,000 tons of coal. The flow rate from the four feeders was approximately 1,100 tons per hour while the feeders were operating.
5. At approximately 11:30 p.m. Wednesday night, the night plant foreman and maintenance foreman examined the raw coal storage area including the feeders. No cavities were detected at that time and feeders were not operated again

approximately 15 to 30 feet. The group had not been on the coal pile for much over 5 minutes when the accident occurred. Dadisman looked in the direction of the group just in time to see the last three men drop out of sight. From the way they disappeared, it looked like they had gone deep into the coal pile. The hole they had fallen through looked to be 4 to 6 feet in diameter. The coal surrounding this hole fell in behind the victims creating an inverted cone approximately 10 feet in diameter and 3 feet deep. Johnson observed the expression on Dadisman's face and when he turned all he saw was the inverted cone where the victims had been standing.

16. During the investigation, tests were conducted on the feeder controls to determine if all were working properly. Representatives of MSHA, the UMWA and Consol participated in these tests. The results of the tests indicated no problems with the feeder controls that could have been a factor relative to the accident.

17. Between 8:00 a.m. on Tuesday, February 4 and 7:00 a.m. on Thursday, February 6 when the dayshift normally started, the temperature in the Fairmont, West Virginia area did not drop below 42 degrees fahrenheit. The temperature gradually dropped after 7:00 a.m., Thursday, until it had reached 38 degrees fahrenheit at 10:00 a.m. These temperature ranges indicate that it is unlikely that the coal in the raw coal storage bin had been frozen at any time during this fifty hour period.

18. During recovery of the victims bodies through the number 17 feeder a small section of sheet metal was observed slightly blocking the upper opening to the feeder chute. An examination of the number 17 feeder approximately one month later revealed that the sheet metal had worked downward blocking a larger portion of the feeder chute opening. This piece of sheet metal was removed from the raw coal storage bin on Friday, March 7. It measured 57 inches by 35 inches by 1/4 inch. No one at the Loveridge No. 22 mine was aware of the sheet metal being in the bin prior to the accident, or how long it had been there.

19. The Loveridge No. 22 mine has an MSHA approved training plan in accordance with 30 CFR Part 48. Included in this training plan are provisions addressing hazard training required by 30 CFR 48.31 for specific short-term personnel who come onto mine property. It had been documented that one of the victims had received this required hazard training but the date he received the training could not be determined. Although hazard training must be completed before a person is allowed to commence work duties, the hazards discussed in the company's training plan did not specifically address the hazards associated with working on or around coal surge areas.

11. Morrison started the preparation plant at approximately 6:45 a.m. He stated that Riley initially instructed him to remove coal from the storage bin using the feeders on the north side adjacent to the slate bin. Morrison said he started feeders numbered 3 through 12 which are located on the north side of the storage bin and then Riley called him back and instructed him to remove coal from the other side of the bin. Morrison stopped feeders numbered 9 through 12 and started feeders numbered 21 through 24 and 26. He stated it was not a very long time span until he was instructed to make the change. Morrison also said that Johnson instructed him not to run coal from the middle of the bin.

12. The coal in the storage bin was piled to within a few feet of the overhead tripper belt structure before the Thursday day shift started. Jeffries stated that he had built the coal pile to this height over the southern half of the bin. This procedure had been utilized in the past to make repairs to the structure. When the plant was started at 6:45 a.m., Simmons observed that the coal pile was up to the structure on the northern end as well. Based on Dadisman's observations while on the coal pile, the area over the number 15 feeder was still close to the tripper belt structure. However, the area where the victims went into the coal pile was about eight feet below the structure. Omear had stated that when he was on the coal pile, in the accident area, he could not reach the overhead structure.

13. The preparation plant maintains a flow chart that records the flow of raw coal into the plant. This chart indicates when and how much raw coal goes into the plant. Coal flow was started around 6:45 a.m. on the morning of the accident. It was run at approximately 800 tons per hour for about 5 minutes, then increased to 1,060 TPH until around 7:07 a.m. At this point, the flow was reduced to 800 TPH briefly, then increased to 1,080 TPH. Coal flow remained at this rate until 7:25 a.m. when all coal flow was stopped. Coal flow was resumed at 7:30 a.m. at 1,060 TPH but again was stopped after just 15 minutes. When coal flow was again started at 7:55 a.m., the rate of flow was approximately 1,100 TPH. Coal flow remained at or near this rate until the accident occurred. During this first hour of operation there were many adjustments of the feeders due mainly to problems at the clean coal load out facilities. (See coal flow chart, Appendix F.)

14. On the morning of the accident, mine management met to discuss the damage to the tripper belt structure and decided to have Industrial Resources, Inc., a contractor who had worked on the structure before, make the necessary repairs. Industrial was contacted and sent Kovach and Bell to Loveridge No. 22 mine at around 9:00 a.m. Several trips had been made onto the raw coal storage pile by Consol personnel before Kovach and Bell arrived. Following a short meeting after the Industrial personnel arrived, a group of seven men (the five victims, Dadisman and Johnson) went onto the raw coal storage pile.

15. Gary Dadisman, who had come to the Loveridge No. 22 mine with Joseph Dunn, learned of the damage to the tripper belt structure the morning of the accident. During the meeting in the preparation plant office that morning, he and Dunn decided they would accompany the others when they examined the damage area. Because Dadisman was unfamiliar with the bin area, he travelled with Johnson. The group of seven men walked onto the coal pile along the edge of the bin. Upon reaching the center of the bin, Dadisman and Johnson ascended to the highest point of the pile, separated from the five victims by

B. The day shift foreman initially instructed him to remove coal from the north end of the bin using the low numbered feeders. Later, he instructed him to draw coal from both ends.

C. The preparation plant superintendent instructed him not to load out of the middle feeders.

The night shift foreman observed feeders 3 through 8 started before he left the control room. The operator started feeders 3 through 12. Shortly thereafter he shut down feeders 9 through 12 and started 21 through 24 and 26.

7. On at least three different instances on the morning of the accident, Consolidation Coal Company officials walked onto the coal pile to inspect the damage to the tripper belt structure. Four different officials (some more than once) made the assessments. At least two of the visits were made after some feeders were operating.

8. During the investigation, tests were conducted on the feeder controls to determine if all were working properly. When each feeder control button was activated, the corresponding set of feeders was energized.

9. Tests were conducted on a sample of raw coal taken from the Loveridge No. 22 mine slope belt. The results of the test indicate that the angle of repose of the loose raw coal is 35 degrees; however, the draw off angle of the same uncompacted material is approximately 65 degrees. The draw angle of compacted material is near vertical. A report of the testing procedures and the findings of these tests is located in Appendix G. A typical cross sectional view of uncompacted coal pile after draw off is in Appendix D.

#### CONTRIBUTORY VIOLATION

One of the conditions/practices in the findings contributed to the accident and constituted a violation of the provisions of 30 CFR Part 77. Persons were permitted to walk on the raw coal surge pile without adequate safeguards to assure that there were no hazards from the reclaiming operations. This is a violation of 30 CFR 77.209.

Copies of the citation and orders are in Appendix H.

## FINDINGS OF FACT

1. The last time any feeders had been run under the raw coal storage bin prior to the day of the accident was the previous afternoon shift on Wednesday, February 5. During that shift, the Nos. 15, 16, 17 and 18 feeders were used to supply raw coal to the preparation plant. An examination of the area (including the feeders) was made and no problems were found other than the damage to the overhead tripper structure. The overhead tripper was manually located and operated from a stationary position dumping coal over these four feeders for most of the afternoon shift. Near the end of the shift, the clean coal silos became filled causing coal draw-off and preparation to stop. During the midnight shift, no feeders were operated and no coal processed until approximately 6:45 a.m. on the day of the accident.
2. The caterpillar D-8 bulldozer was operated in the raw coal storage bin between 9:30 p.m. and 4:00 a.m. The operator built the coal pile so that it was within a few feet of the structure over the southern half of the bin. In so doing, the bulldozer ran over the number 17 feeder many times during the course of the night. The tripper was used to fill the northern half of the bin.
3. The group of seven men had been on the pile approximately 5 minutes when the accident occurred. The five victims disappeared into a hole 4 to 6 feet in diameter and apparently went deep into the pile. The surface of the coal was approximately 60 feet above the elevation of the feeders. When other recovery efforts proved to be futile, feeders were run to recover the victims. and it took approximately 5 minutes for the first victim to appear in the chute after the number 17 feeder was activated. Each feeder discharges approximately four tons per minute.
4. Initially, feeders number 21 and 22 were started. Shortly thereafter, it was decided to run numbers 17 and 18. All five bodies were recovered from feeder number 17 between 11:40 a.m. and 12:07 p.m. Feeders number 19 and 20 were inoperative and had been for approximately one year. Feeder number 21 had been blocked with rock for some time prior to the accident.
5. Normal start-up procedures of the preparation plant includes energizing certain sets of circuits, the last of which include the conveyor belt under the raw coal storage bin. After this is done the feeders are controlled by manually activating them in pairs. The feeders can only be controlled from the plant control room. The plant operator can operate the feeders in any combination. Under normal conditions, the plant operator would start all operable feeders under the raw coal bin and control the flow by using the individual rheostats. There are no physical barriers preventing any of the feeders from being operated.
6. The operator received the following instructions concerning the plant start-up at different times from different people during the morning of the accident.
  - A. The night shift foreman was with him in the control room and instructed him to start the plant when the light on the control panel for the clean coal silo went out.





Section A—Victim Data

1. Name	2. Sex	3. Social Security Number
Roger B. Alke	<input checked="" type="checkbox"/> Male <input type="checkbox"/> Female	510-50-3420
4. Age	5. Job Classification	
36	Supv. Design & Construction	Consolidation Coal Company Northern WV Regional Engineering Department Morgantown, WV
6. Experience at this Classification	7. Total Mining Experience	
8 years 7 months	8 years 7 months	

8. What activity was being performed at time of accident?	9. Victim's Experience at this Activity	10. Was victim trained in this task?
Standing on raw coal pile to observe structural deficiencies	Intermittent	No

Section B—Victim Data for Health and Safety Courses/Training Received (related to accident)

	Date Received
11.	
12.	
13.	
14.	

Section C—Supervisor Data (supervisor of victim)

15. Name	16. Certified
N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
17. Experience as Supervisor	18. Total Mining Experience

Section D—Supervisor Data for Health and Safety Courses/Training Received (related to accident)

	Date Received
19.	
20.	
21.	
22.	

23. When was the supervisor last present at accident scene prior to the accident?	24. What did he do when he was there?

25. When was he last in contact with the victim?	26. Did he issue instructions relative to the accident?
--	---

27. Was he aware of or did he express an awareness of any unsafe practice or condition?
---



Section A—Victim Data

1. Name	2. Sex	3. Social Security Number
Joseph W. Leonard, IV	<input checked="" type="checkbox"/> Male <input type="checkbox"/> Female	234-92-9222
4. Age	5. Job Classification	Consolidation Coal Company Northern WV Regional Engineering Dept Morgantown, WV
29	Assistant Prep. Plant Engineer	
6. Experience at this Classification	7. Total Mining Experience	
7 year 1 month	8 years 2 months	

8. What activity was being performed at time of accident?	9. Victim's Experience at this Activity	10. Was victim trained in this task?
Walking on raw coal pile to observe structural deficiencies	Intermittent	No

Section B—Victim Data for Health and Safety Courses/Training Received (related to accident)	Date Received
11.	
12.	
13.	
14.	

Section C—Supervisor Data (supervisor of victim)

15. Name	16. Certified
N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
17. Experience as Supervisor	18. Total Mining Experience

Section D—Supervisor Data for Health and Safety Courses/Training Received (related to accident)	Date Received
19.	
N/A	
20.	
21.	
22.	

23. When was the supervisor last present at accident scene prior to the accident?	24. What did he do when he was there?

25. When was he last in contact with the victim?	26. Did he issue instructions relative to the accident?
--	---

27. Was he aware of or did he express an awareness of any unsafe practice or condition?
---



APPENDIX A

Section A—Victim Data

1. Name <b>Joseph E. Dunn</b>		2. Sex <input checked="" type="checkbox"/> Male <input type="checkbox"/> Female	3. Social Security Number <b>198-26-1391</b>
4. Age <b>50</b>	5. Job Classification <b>Senior Design Manager</b>		<b>Consolidation Coal Co Central Engineering Pittsburgh, PA</b>
6. Experience at this Classification <b>9 months</b>		7. Total Mining Experience <b>9 months</b>	
8. What activity was being performed at time of accident? <b>Walking on raw coal pile observing structural deficiencies</b>		9. Victim's Experience at this Activity <b>Intermittent</b>	10. Was victim trained in this task? <b>Yes</b>

Section B—Victim Data for Health and Safety Courses/Training Received (related to accident)

	Date Received
11.	
12.	
13.	
14.	

Section C—Supervisor Data (supervisor of victim)

15. Name <b>N/A</b>	16. Certified <input type="checkbox"/> Yes <input type="checkbox"/> No
17. Experience as Supervisor	18. Total Mining Experience

Section D—Supervisor Data for Health and Safety Courses/Training Received (related to accident)

	Date Received
19. <b>N/A</b>	
20.	
21.	
22.	

23. When was the supervisor last present at accident scene prior to the accident?	24. What did he do when he was there?

25. When was he last in contact with the victim?	26. Did he issue instructions relative to the accident?

27. Was he aware of or did he express an awareness of any unsafe practice or condition?



APPENDIX A

Section A—Victim Data

1. Name	2. Sex	3. Social Security Number
Ronald E. Bell	<input checked="" type="checkbox"/> Male <input type="checkbox"/> Female	232-72-1426
4. Age	5. Job Classification	
39	Project Engineer	Industrial Resources Fairmont, WV
6. Experience at this Classification	7. Total Mining Experience	
4 years	Intermittently for 17 years 7 months with Industrial Resources	
8. What activity was being performed at time of accident?	9. Victim's Experience at this Activity	10. Was victim trained in this task?
Walking on the raw coal pile observing structural deficiencies	Intermittent	Yes

Section B—Victim Data for Health and Safety Courses/Training Received (related to accident)

Date Received

11.		
Hazard Training		Unknown
12.		
13.		
14.		

Section C—Supervisor Data (supervisor of victim)

15. Name	16. Certified
N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
17. Experience as Supervisor	18. Total Mining Experience

Section D—Supervisor Data for Health and Safety Courses/Training Received (related to accident)

Date Received

19.	
N/A	
20.	
21.	
22.	

23. When was the supervisor last present at accident scene prior to the accident?	24. What did he do when he was there?

25. When was he last in contact with the victim?	26. Did he issue instructions relative to the accident?
--	---

27. Was he aware of or did he express an awareness of any unsafe practice or condition?
---



APPENDIX A

Section A—Victim Data

1. Name		2. Sex		3. Social Security Number	
David R. Kovach		<input checked="" type="checkbox"/> Male <input type="checkbox"/> Female		233-64-7172	
4. Age	5. Job Classification				
41	Vice President of Operations		Industrial Resources Fairmont, WV		
6. Experience at this Classification			7. Total Mining Experience		
7 months			Intermittently for 15 years 5 months with Industrial Resources		
8. What activity was being performed at time of accident?		9. Victim's Experience at this Activity		10. Was victim trained in this task?	
Walking on the raw coal pile observing structural deficiencies		Intermittent		Yes	

Section B—Victim Data for Health and Safety Courses/Training Received (related to accident)

	Date Received
11. Annual Refresher Training	June 7, 1985
12.	
13.	
14.	

Section C—Supervisor Data (supervisor of victim)

15. Name	16. Certified
N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
17. Experience as Supervisor	18. Total Mining Experience

Section D—Supervisor Data for Health and Safety Courses/Training Received (related to accident)

	Date Received
19. N/A	
20.	
21.	
22.	

23. When was the supervisor last present at accident scene prior to the accident?	24. What did he do when he was there?

25. When was he last in contact with the victim?	26. Did he issue instructions relative to the accident?
--	---

27. Was he aware of or did he express an awareness of any unsafe practice or condition?
---

APPENDIX B - PERSONS WHO PARTICIPATED IN THE INVESTIGATION

Consolidation Coal Company

Darrel Auch	Sr. V.P.-Mining - NWV Operations
Danny J. Quesenberry	Vice President - Fairmont Operations
Ron Wooten	Vice President - Safety
L. O. Patts	Asst. to V.P. of Safety
J. D. Shaffer	Safety Director - Corporate
Charles E. Bane	Regional Manager of Safety
Richard R. Rieger	Technical Asst. - Fairmont Operations
C. H. Trickett	Corporate Safety Inspector
Ray Henderson	Regional Manager - Eng. & Environmental Affairs
William O. Stanhouse	Coordinator - Community Relations
Mark Miller	Supervisor IE&R
Alan Landers	Corporate Inspector
Samuel P. Skeen	Legal Counsel - NWV Region
Gary Dadisman	Senior Contract Administrator
Bob Omear	General Superintendent
Don Glover	Safety Supervisor
Robert R. Johnson, Jr.	Preparation Plant Superintendent
Robert K. Riley	Shift Foreman
Kent A. Simmons	Shift Foreman
James D. Watson	Shift Foreman
Ronald Deem	Maintenance Foreman

United Mine Workers of America

Terry Osborne	International Safety Representative
Gary Asher	International Safety Representative
William E. Hamrick	International Safety Representative
James Ammons	Local 9909 Safety Committee, Chairman
Vernon O. Hayes, Jr.	Local 9909 Safety Committee
Roy A. Williams	Local 9909 Safety Committee
Ted Tuttle	Local 9909 Safety Committee
Maurice S. Morrison	Plant Operator
John W. Jeffries	Hoist Operator

West Virginia Department of Energy

Walter N. Miller	Inspector-At-Large
Carl Kinty	Asst. Inspector-At-Large
Roger Hiwkle	Inspector
B. R. Powell	Inspector

Industrial Resources

Donald Hoylman

Vice President

Mine Safety and Health Administration

Timothy J. Thompson  
Roger W. Uhazie  
Joseph S. Tortorea  
A. Keith Watson  
Stephen J. Stock  
Edwin Wayne Fetty  
Terry L. Palmer

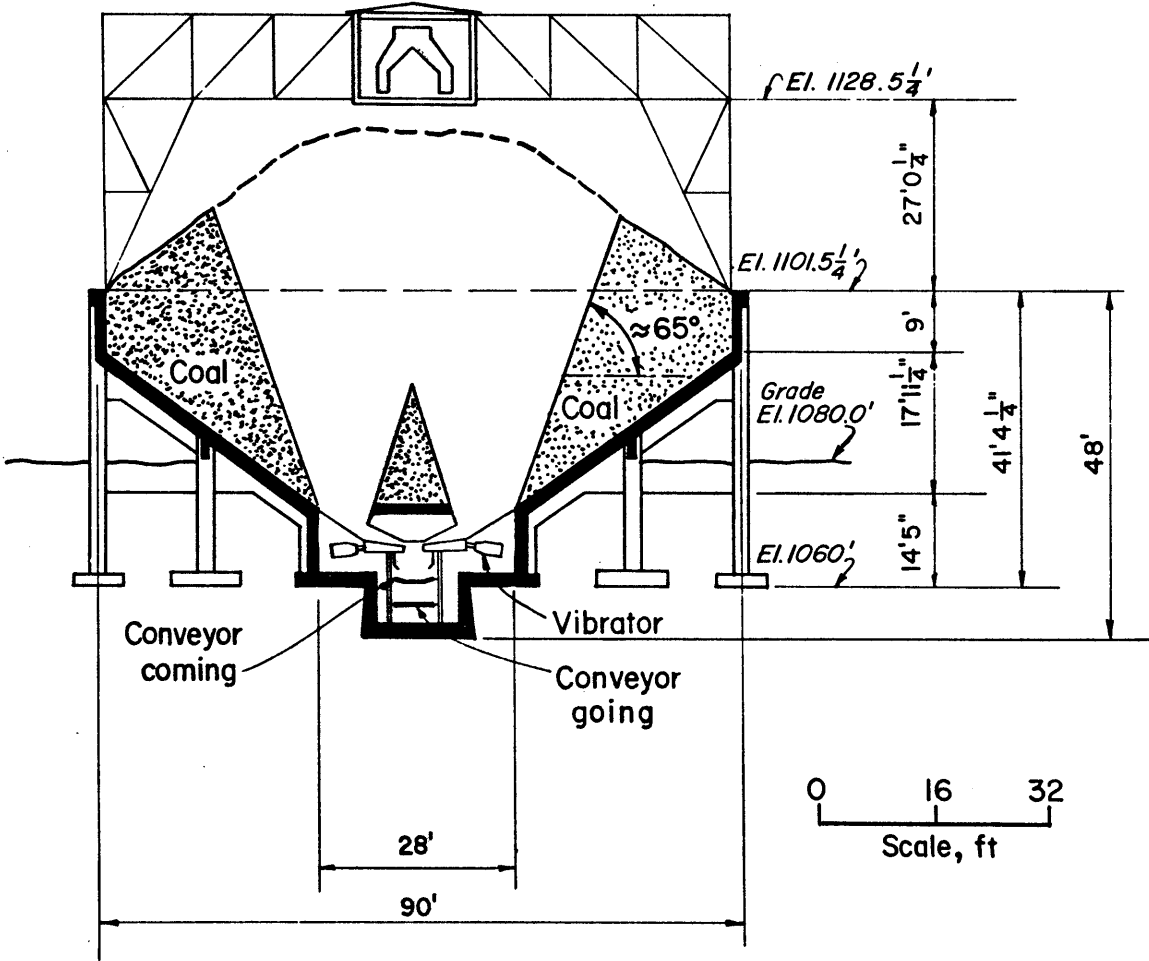
Mine Safety and Health Specialist  
Supervisory CMS&H Inspector  
Mining Engineer  
Civil Engineer  
Mining Engineer  
CMS&H Inspector (Electrical)  
CMS&H Inspector

APPENDIX C - PERSONS WHO PROVIDED SWORN  
STATEMENTS DURING THE INVESTIGATION

Robert E. Omeare	General Superintendent
Robert R. Johnson, Jr.	Preparation Plant Superintendent
Robert K. Riley	Shift Foreman
Kent A. Simmons	Shift Foreman
James D. Watson	Shift Foreman
Ronald Deem	Maintenance Foreman
Gary L. Dadisman	Senior Contract Administrator
Maurice S. Morrison	Plant Operator
John W. Jeffries	Hoist Operator
Donald Hoylman	President - Industrial Resources, Inc.



LOVERIDGE NO.22 MINE  
 I.D. NO. 46-01433  
 CONSOLIDATION COAL COMPANY



APPENDIX D  
 SECTIONAL VIEW SHOWING  
 UNCOMPACTED COAL PILE  
 AFTER DRAWOFF

Section I (Coal Only)

MSHA and/or State Certification and/or Qualification

Mine ID 46 01433

Date Training Plan Approved March 13, 1984

Date Training Received \_\_\_\_\_

Date Training Received \_\_\_\_\_

Loveridge No. 22

\*  Certified Person (Underground) \_\_\_\_\_

Dust (Sampling) \_\_\_\_\_

\*  Certified Person (Surface) \_\_\_\_\_

Dust (Calibration) \_\_\_\_\_

Noise \_\_\_\_\_

\*  Methane & Oxygen Deficiency Testing \_\_\_\_\_

\*  Impoundments 1/82

\*  Electrical \_\_\_\_\_

\*  Hoisting Engineer \_\_\_\_\_

\*  Energized Surface High Voltage \_\_\_\_\_

\* Annual Retraining Required

Section II (Metal-Non-metal and Coal)

MSHA Training Programs Completed

Date of Hire 6/1/77

Date Training Plan Approved \_\_\_\_\_

Required Training (Victim)

Date Training Received \_\_\_\_\_

Required Training (Victim)

Date Training Received \_\_\_\_\_

New Miner (U.B.) \_\_\_\_\_

Hazard Training (U.G.) \_\_\_\_\_

New Miner (Sur.) \_\_\_\_\_

Hazard Training (Sur.) \_\_\_\_\_

Newly Employed Experienced (U.G.) \_\_\_\_\_

Newly Employed Experienced (Sur.) \_\_\_\_\_

Annual Refresher (U.G.) June 7, 1985

Annual Refresher (Sur.) \_\_\_\_\_

Task Training Specify Type:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Section III

Company Training Program Completed:

Training	OJT/Formal	Instructor	Date Completed
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Section IV

DID VICTIM HAVE TRAINING SPECIFICALLY RELATED TO THE TASK BEING PERFORMED  
AT THE TIME OF THE ACCIDENT?

YES  NO WHEN? \_\_\_\_\_

BY WHOM? \_\_\_\_\_ HOW WAS TRAINING GIVEN? \_\_\_\_\_

---

Section V

RECOMMEND TRAINING PLAN EVALUATION BY EDUCATION & TRAINING OFFICE

YES  NO

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**Section I (Coal Only)**

JOSEPH W. LEONARD, IV  
Employee of Consolidation Coal Company  
Northern West Virginia Regional Engineering Department  
Morgantown, West Virginia

**MSHA and/or State Certification and/or Qualification**

**Mine ID 46 01433**

Date Training Plan Approved March 13, 1984  
Loveridge No. 22

Date Training Received \_\_\_\_\_

Date Training Received \_\_\_\_\_

\*  Certified Person (Underground) \_\_\_\_\_

Dust (Sampling) \_\_\_\_\_

\*  Certified Person (Surface) \_\_\_\_\_

Dust (Calibration) \_\_\_\_\_

Noise \_\_\_\_\_

\*  Methane & Oxygen Deficiency Testing

2/85

\*  Impoundments \_\_\_\_\_

\*  Hoisting Engineer \_\_\_\_\_

\*  Electrical \_\_\_\_\_

\*  Energized Surface High Voltage \_\_\_\_\_

\* Annual Retraining Required

**Section II (Metal-Non-metal and Coal)**

**MSHA Training Programs Completed**

Date of Hire 1-15-79

Date Training Plan Approved \_\_\_\_\_

Required Training (Victim)

Date Training Received

Required Training (Victim)

Date Training Received

New Miner (U.B.) \_\_\_\_\_

Hazard Training (U.G.) \_\_\_\_\_

New Miner (Sur.) \_\_\_\_\_

Hazard Training (Sur.) \_\_\_\_\_

Newly Employed Experienced (U.G.) \_\_\_\_\_

Newly Employed Experienced (Sur.) \_\_\_\_\_

Annual Refresher (U.G.) 9-26-80

Task Training Specify Type:

Annual Refresher (Sur.) \_\_\_\_\_

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

**Section III**

**Company Training Program Completed:**

Training

OJT/Formal

Instructor

Date Completed

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

Section IV

DID VICTIM HAVE TRAINING SPECIFICALLY RELATED TO THE TASK BEING PERFORMED  
AT THE TIME OF THE ACCIDENT?

YES  NO WHEN? \_\_\_\_\_

BY WHOM? \_\_\_\_\_ HOW WAS TRAINING GIVEN? \_\_\_\_\_

---

Section V

RECOMMEND TRAINING PLAN EVALUATION BY EDUCATION & TRAINING OFFICE

YES  NO

---

**Section I (Coal Only)**

MSHA and/or State Certification and/or Qualification

Mine ID 46 01433

Date Training Plan Approved March 13, 1984  
Loveridge No. 22

Date Training Received \_\_\_\_\_

Date Training Received \_\_\_\_\_

\*  Certified Person (Underground) \_\_\_\_\_

Dust (Sampling) \_\_\_\_\_

\*  Certified Person (Surface) \_\_\_\_\_

Dust (Calibration) \_\_\_\_\_

Noise \_\_\_\_\_

\*  Methane & Oxygen Deficiency Testing \_\_\_\_\_

\*  Impoundments \_\_\_\_\_

\*  Electrical \_\_\_\_\_

\*  Hoisting Engineer \_\_\_\_\_

\*  Energized Surface High Voltage \_\_\_\_\_

\* Annual Retraining Required

**Section II (Metal-Non-metal and Coal)**  
MSHA Training Programs Completed

Date of Hire August 1970

Date Training Plan Approved \_\_\_\_\_

Required Training (Victim)

Date Training Received \_\_\_\_\_

Required Training (Victim)

Date Training Received \_\_\_\_\_

New Miner (U.B.) \_\_\_\_\_

Hazard Training (U.G.) \_\_\_\_\_

New Miner (Sur.) \_\_\_\_\_

Hazard Training (Sur.) \_\_\_\_\_

Newly Employed Experienced (U.G.) \_\_\_\_\_

Newly Employed Experienced (Sur.) \_\_\_\_\_

Annual Refresher (U.G.) \_\_\_\_\_

Annual Refresher (Sur.) \_\_\_\_\_

Task Training Specify Type:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Section III**

Company Training Program Completed:

Training

OJT/Formal

Instructor

Date Completed

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

Section IV

DID VICTIM HAVE TRAINING SPECIFICALLY RELATED TO THE TASK BEING PERFORMED  
AT THE TIME OF THE ACCIDENT?

YES  NO WHEN? \_\_\_\_\_

BY WHOM? \_\_\_\_\_ HOW WAS TRAINING GIVEN? \_\_\_\_\_

---

Section V

RECOMMEND TRAINING PLAN EVALUATION BY EDUCATION & TRAINING OFFICE

YES  NO

---

Section I (Coal Only)

MSHA and/or State Certification and/or Qualification

Mine ID 46 01433

Date Training Plan Approved <u>March 13, 1984</u>	Date Training Received _____	Date Training Received _____
Loveridge No. 22		
* <input type="checkbox"/> Certified Person (Underground)	_____	<input type="checkbox"/> Dust (Sampling) _____
* <input type="checkbox"/> Certified Person (Surface)	_____	<input type="checkbox"/> Dust (Calibration) _____
* <input type="checkbox"/> Methane & Oxygen Deficiency Testing	_____	<input type="checkbox"/> Noise _____
* <input type="checkbox"/> Electrical	_____	* <input type="checkbox"/> Impoundments _____
* <input type="checkbox"/> Energized Surface High Voltage	_____	* <input type="checkbox"/> Hoisting Engineer _____
* Annual Retraining Required		

Section II (Metal-Non-metal and Coal)  
MSHA Training Programs Completed

Date of Hire <u>6-4-68</u>	Date Training Plan Approved _____		
Required Training (Victim)	Date Training Received	<input type="checkbox"/> Required Training (Victim)	Date Training Received
<input type="checkbox"/> New Miner (U.B.)	_____	<input checked="" type="checkbox"/> Hazard Training (U.G.)	<u>Unknown</u>
<input type="checkbox"/> New Miner (Sur.)	_____	<input type="checkbox"/> Hazard Training (Sur.)	_____
<input type="checkbox"/> Newly Employed Experienced (U.G.)	_____		
<input type="checkbox"/> Newly Employed Experienced (Sur.)	_____	Task Training Specify Type:	
<input type="checkbox"/> Annual Refresher (U.G.)	_____	_____	_____
<input type="checkbox"/> Annual Refresher (Sur.)	_____	_____	_____

Section III

Company Training Program Completed:

Training	OJT/Formal	Instructor	Date Completed
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____



Section IV

DID VICTIM HAVE TRAINING SPECIFICALLY RELATED TO THE TASK BEING PERFORMED  
AT THE TIME OF THE ACCIDENT?

YES  NO WHEN? \_\_\_\_\_

BY WHOM? \_\_\_\_\_ HOW WAS TRAINING GIVEN? \_\_\_\_\_

---

Section V

RECOMMEND TRAINING PLAN EVALUATION BY EDUCATION & TRAINING OFFICE

YES  NO

---

Section I (Coal Only)

MSHA and/or State Certification and/or Qualification

Mine ID 46 01433

Date Training Plan Approved March 13, 1984

Date Training Received \_\_\_\_\_

Date Training Received \_\_\_\_\_

Loveridge No. 22  
\*  Certified Person (Underground) \_\_\_\_\_

Dust (Sampling) \_\_\_\_\_

\*  Certified Person (Surface) \_\_\_\_\_

Dust (Calibration) \_\_\_\_\_

Noise \_\_\_\_\_

\*  Methane & Oxygen Deficiency Testing \_\_\_\_\_

\*  Impoundments \_\_\_\_\_

\*  Hoisting Engineer \_\_\_\_\_

\*  Electrical \_\_\_\_\_

\*  Energized Surface High Voltage \_\_\_\_\_

\* Annual Retraining Required

Section II (Metal-Non-metal and Coal)  
MSHA Training Programs Completed

Date of Hire 5-1-85

Date Training Plan Approved \_\_\_\_\_

Required Training (Victim)

Date Training Received \_\_\_\_\_

Required Training (Victim)

Date Training Received \_\_\_\_\_

New Miner (U.B.) \_\_\_\_\_

Hazard Training (U.G.) \_\_\_\_\_

New Miner (Sur.) \_\_\_\_\_

Hazard Training (Sur.) \_\_\_\_\_

Newly Employed Experienced (U.G.) \_\_\_\_\_

Newly Employed Experienced (Sur.) \_\_\_\_\_

Task Training Specify Type:

Annual Refresher (U.G.) \_\_\_\_\_

Annual Refresher (Sur.) \_\_\_\_\_

Section III

Company Training Program Completed:

Training	OJT/Formal	Instructor	Date Completed
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Section IV

DID VICTIM HAVE TRAINING SPECIFICALLY RELATED TO THE TASK BEING PERFORMED  
AT THE TIME OF THE ACCIDENT?

YES  NO WHEN? \_\_\_\_\_

BY WHOM? \_\_\_\_\_ HOW WAS TRAINING GIVEN? \_\_\_\_\_

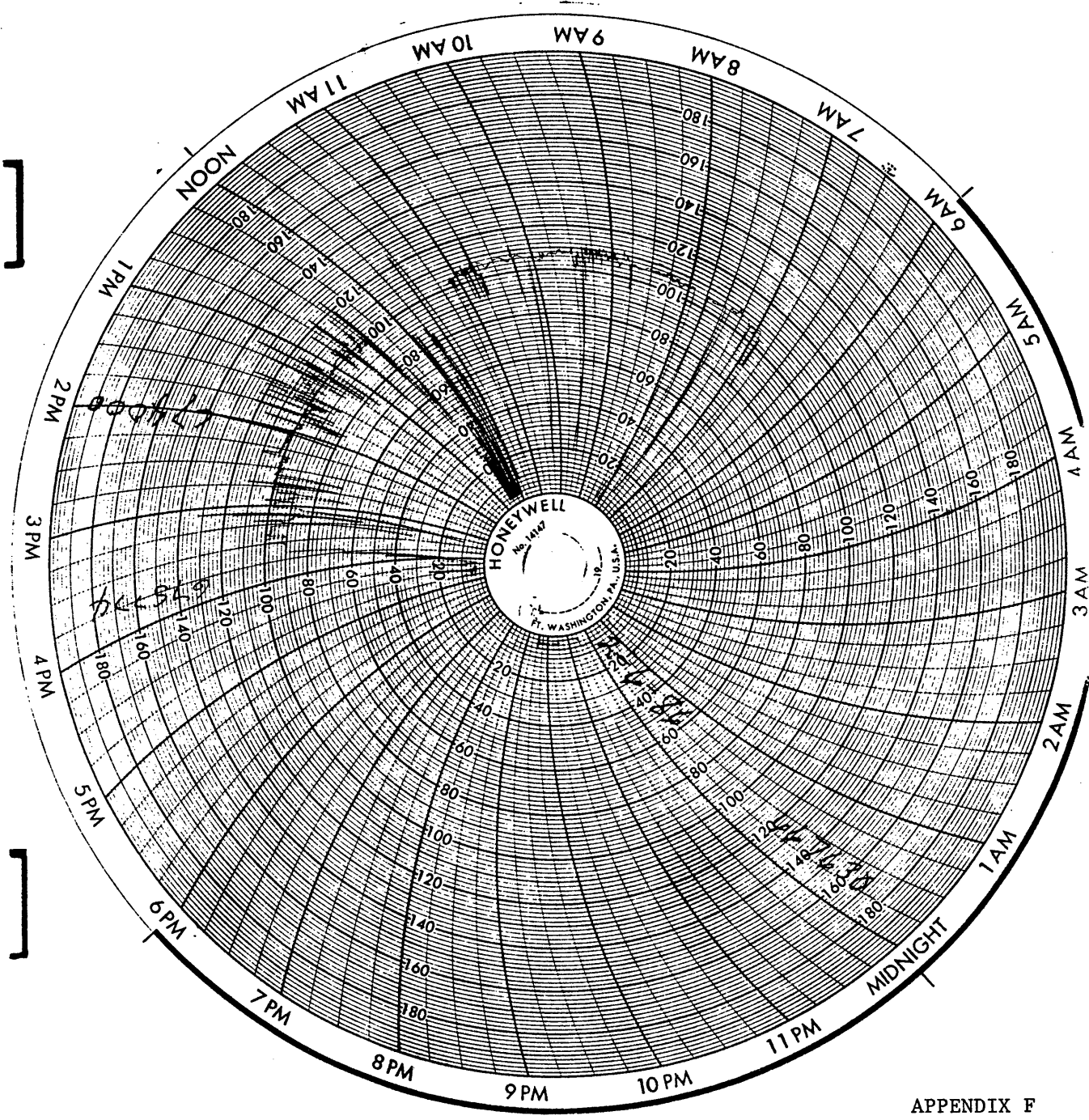
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Section V

RECOMMEND TRAINING PLAN EVALUATION BY EDUCATION & TRAINING OFFICE

YES  NO

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APPENDIX F  
 COAL FLOW CHART  
 FEBRUARY 6, 1986

APPENDIX G

U. S. Department of Labor

Mine Safety and Health Administration  
4800 Forbes Avenue  
Pittsburgh, Pennsylvania 15213

Bruceton Safety Technology Center



April 4, 1986

MEMORANDUM FOR: TIMOTHY J. THOMPSON  
Mine Safety and Health Specialist, District 2

THROUGH : KELVIN K. WU *Kelvin K. Wu*  
Chief, Mine Waste and Geotechnical Engineering Division

FROM : STEPHEN J. STOCK *Stephen Stock*  
Mining Engineer, Mine Waste and Geotechnical Engineering  
Division

SUBJECT : Testing of Consolidation Coal Company's Loveridge No. 22,  
Fairview, West Virginia, raw coal material properties  
for evaluation of dozer compaction effect on coal pile

A raw coal sample of 420 pounds was collected on March 12 through 14, 1986 by Woody Shaver, a company employee. The first sample was delivered to the Bruceton office by Paul Moore, MSHA District 3. This sample was not enough to perform all the material properties testing. On March 14, 1985, an additional sample was collected at the mine by Steve Stock. Both samples were collected off the No. 22 mine belt.

Laboratory testing was conducted to determine the following properties of the raw coal; angle of repose, moisture content, angle of discharge, and relative density.

The average angle of repose for the raw coal was determined to be 35 degrees. The moisture of the raw coal sample tested was 4.17 percent.

To determine the coal's angle of discharge at various densities, a test bin was constructed (see figure 1). A total of four tests were run on the raw coal. Two tests were conducted on uncompacted material. The measured angles of discharge ranged from 55 degrees to 75 degrees with an average angle of discharge of 65 degrees with an average density of 53.5 lbs/ft<sup>3</sup>. Then the raw coal was compacted in uniform 6-inch lifts to simulate a dozer placing the material in uniform lifts. Two tests were run on the compacted material. The angle of discharge approached 90 degrees with an average density of 59.14 lbs/ft<sup>3</sup>.

The results of the relative density testing indicated a minimum density of 54.2 lb/ft<sup>3</sup> and a maximum density of 68.7 lb/ft<sup>3</sup>. Relative density test results are used to indicate the degree of compactness of a material by indicating the loosest and densest conditions which can be obtained using standardized laboratory procedures. The relative density was determined to be 54.16 lb/ft<sup>3</sup> (minimum) and 68.67 lbs/ft<sup>3</sup> (maximum).

Evaluation of Bulldozer Affect on Compaction

The day after the accident, the average angle into the various feeders, including the No. 17 feeder, was approximately 65 degrees. The dozer worked the bin material from the edges continually pushing the material into the feeders. The laboratory testing conducted indicates that the dozer working the pile at the time of the accident did not have an impact as far as the angle of discharge into the feeders.

cc: J. Fredland

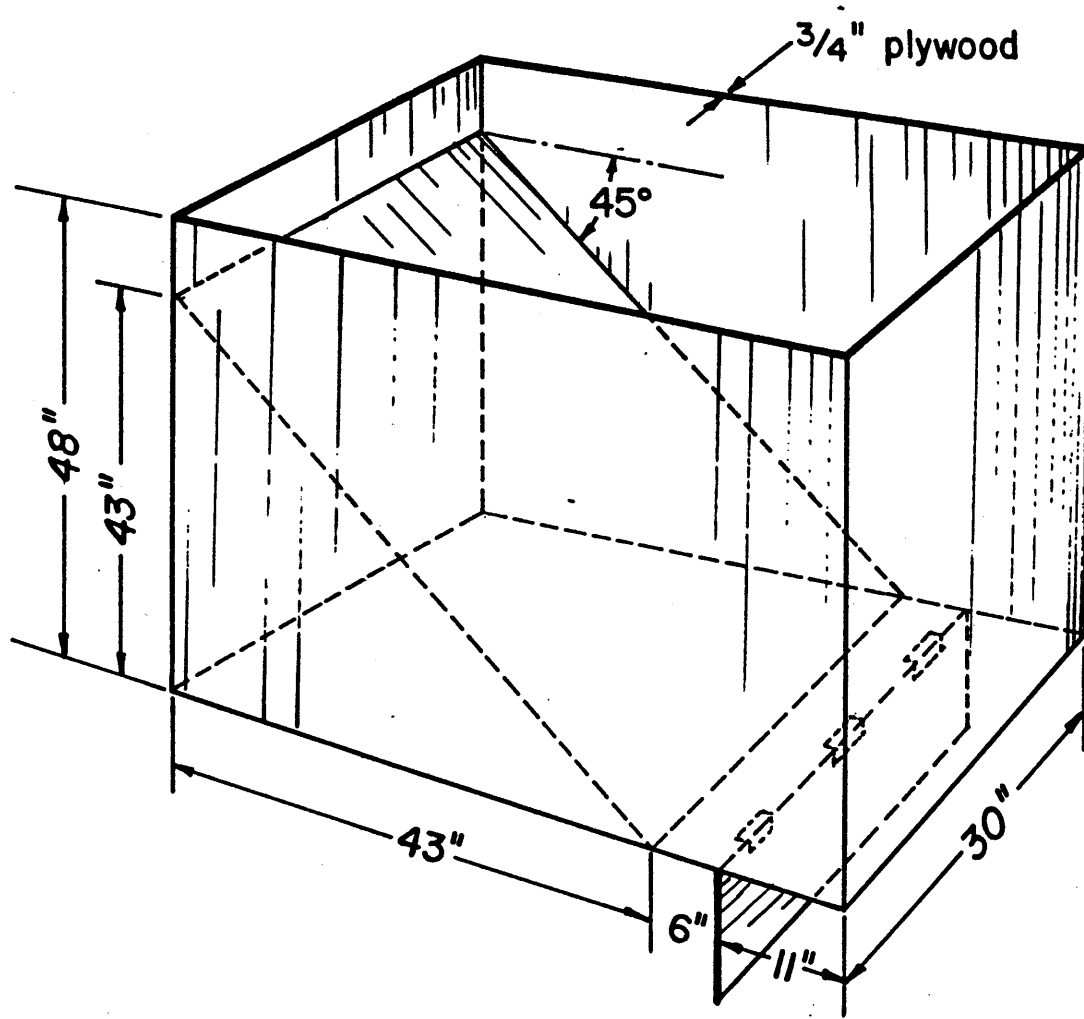


Figure 1.- Laboratory Test Bin

### Angle of Discharge Testing

- Trial No. 1    No compaction, plain drop  
Average angle  $\approx 65^\circ$   
Angle variation  $55^\circ$  to  $75^\circ$     Density =  $53.5 \text{ lbs/ft}^3$   
Angle of repose  $35^\circ$
- Trial No. 2    No compaction, material dropped on bin wall and moved into place  
Average angle  $\approx 65^\circ$   
Average variation  $60^\circ$  to  $70^\circ$     Density =  $53.5 \text{ lbs/ft}^3$
- Trial No. 3    Compaction, 15 lb hammer, 1 inch drop  
2 passes on 6-inch lifts    Density =  $60.43 \text{ lbs/ft}^3$   
Angle = vertical
- Trial No. 4    Compaction, 15 lb hammer, 1 in. drop  
1 pass on 6-inch lifts    Density =  $57.85 \text{ lb/ft}^3$   
Angle = vertical



# COAL ANALYSIS REPORT

LAB NO. M04008

ORGANIZATION: BOM  
SAMPLE ID: COAL

CAN NO: -  
MINE: LOVE ~~EDGE~~  
BED: -

OPR: -  
STATE: - COUNTY: -  
TOWN: -

DATE OF SAMPLING: 3/20/86 DATE RECEIVED: 3-21-86 DATE OF REPORT: 3-21-  
COLLECTOR: JOE JANOSIK

	COAL [AS RECD.]	COAL [MOIST FREE]	COAL [MOIST, ASH FRE
AIR DRY LOSS 2.98			
MOISTURE .....	4.17 .....	N/A .....	N/A
ASH .....	13.94 .....	14.54 .....	N/A

RELATIVE DENSITY						
MINIMUM AND MAXIMUM DENSITY DETERMINATIONS						
					DATE <u>3/29/86</u>	
PROJECT <u>Loveridge Mine, No. 22</u>						
BORING NO. _____				SAMPLE NO. <u>1</u>		
CLASSIFICATION <u>Run of mine coal</u>						
MOLD NO. <u>1</u>	MOLD DIAMETER, IN. = <u>11</u>	WEIGHT OF MOLD, $w_m$ , LB = <u>20.55</u>				
VOLUME OF MOLD, $V_m$ , CU FT = <u>0.5</u>			END AREA OF MOLD, $A_m$ , SQ FT = <u>0.66</u>			
MINIMUM DENSITY						
TRIAL NO.			1	2	3	4
WEIGHT LB	MOLD (OR TARE) AND SOIL, DRY	$w$	47.67	47.57	47.65	
	MOLD (OR TARE)	$w_m$	20.55	20.55	20.55	
	SOIL, DRY	$w_s$	27.12	27.02	27.10	
MIN DRY DENSITY, LB/CU FT = $w_s/V$		$\gamma_d$	54.24	54.04	54.20	
MIN DRY DENSITY, AVERAGE			54.16			LB/CU FT
MAXIMUM DENSITY						
METHOD USED						
TRIAL NO.			1	2	3	4
HEIGHT, IN.	LEFT DIAL READING	$h_L$	.0120	.1389	.0802	
	RIGHT DIAL READING	$h_R$	.0140	.2540	.0225	
	AVERAGE DIAL = $(h_L + h_R)/2$	$h_{avg}$	.0130	.1965	.0514	
	INITIAL DIAL READING	$h_o$	1.999	1.999	1.999	
	HEIGHT CHANGE = $h_o - h_{avg}$	$\Delta h$	1.986	1.8025	1.9485	
VOL CU FT	VOLUME CHANGE = $(\Delta h/12) \times A_m$	$\Delta v$	.1103	.0991	.1072	
	VOLUME OF SOIL = $V_m - \Delta v$	$v$	.3896	.4009	.3928	
WEIGHT LB	MOLD (OR TARE) AND SOIL, DRY	$w$	47.67	47.57	47.65	
	MOLD (OR TARE)	$w_m$	20.55	20.55	20.55	
	SOIL, DRY	$w_s$	27.12	27.02	27.10	
MAX DRY DENSITY, LB/CU FT = $w_s/v$		$\gamma_d$	69.61	67.40	68.99	
MAX DRY DENSITY, AVERAGE			68.67			LB/CU FT
REMARKS _____						
TECHNICIAN <u>JTJ</u>		COMPUTED BY _____		CHECKED BY <u>[Signature]</u>		

Section I - Violation Data

1. Date	Mo	Da	Yr	2. Time (24 Hr. Clock)	3. Citation/Order Number
	02	06	86	1200	2706244
4. Served To				5. Operator	
Don Glevak, SAFETY DEPT.				CONSOLIDATION COAL COMPANY	
6. Mine				7. Mine ID	
Loveridge No. 22				46-C1433 (Contractor)	
8. Condition or Practice					8a. Written Notice (103g)

This mine has experienced an interruption of at least five persons that resulted in fatalities, in the raw coal storage bin located near the mine preparation plant, at approximately 11 A.M. 2-4-86; this order is issued to assure the safety of a person in the area of the raw coal storage bin until an examination or investigation is made to determine that the raw coal storage bin is safe. Only those persons selected from company officials, officials, the miners representative and other persons deemed by MSHA to have information may enter or remain in the affected area.

This order allows the raw coal bin facilities to be operated to ascertain that all persons interrupted are recovered.

See Continuation Form (MSHA Form 7000-3a)

9. Violation	A. Health Safety Other	B. Section of Act	C. Part/Section of Title 30 CFR

Section II - Inspector's Evaluation

10. Gravity:

A. Injury or Illness (has) (is): No Likelihood  Unlikely  Reasonably Likely  Highly Likely  Occurred

B. Injury or Illness could reasonably be expected to be: No Lost Workdays  Lost Workdays or Restricted Duty  Permanently Disabling  Fatal

C. Significant and Substantial (See Reverse): Yes  No  D. Number of Persons Affected: \_\_\_\_\_

11. Negligence (check one): A. None  B. Low  C. Moderate  D. High  E. Reckless Disregard

12. Type of Action: 103-K, Citation  Order  Safeguard

13. Type of Issuance (check one): Citation  Order  Safeguard

14. Initial Action: A. Citation  B. Order  C. Safeguard  D. Written Notice  E. Citation/Order Number: \_\_\_\_\_ F. Dated: Mo Da Yr

15. Area or Equipment: \_\_\_\_\_

The raw coal storage bin area

16 Termination Due	A. Date	Mo	Da	Yr	B. Time (24 Hr. Clock)

Section III - Termination Action

17. Action to Terminate

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18. Terminated	A. Date	Mo	Da	Yr	B. Time (24 Hr. Clock)

Section IV - Automated System Data

19. Type of Inspection (activity code)	20. Event Number	21. Primary or Mit.
AFA	5322233	
22. Signature	23. AR Number	
Edwin W. Little	2188	



Section I - Violation Data

1. Date	Mo	Da	Yr	2. Time (24 Hr. Clock)	3. Citation Order Number
	02	08	86	1415	270-192
4. Served To				5. Operator	
ROBERT O'MEAR, GEN'L SUPT.				CONSOLIDATION COAL	
6. Mine				7. Mine ID	
LOVERIDGE # 22				46-01433	
8. Condition or Practice					

Penalty Notice (103g)

THE FOLLOWING CONDITION, WHICH CONSTITUTES AN IMMEDIATE DANGER WAS OBSERVED DURING THE COURSE OF A MULTIDISCIPLINARY FATAL ACCIDENT INVESTIGATION: 30 CFR 77.209 PERSONS WERE PERMITTED TO WALK ON THE RAW COAL SURGE PILE WITHOUT ADEQUATE SAFEGUARDS TO ASSURE THAT THERE WERE NO HAZARDS FROM THE RECLAIMING OPERATIONS. THIS ORDER WILL NOT BE TERMINATED UNTIL THE OPERATOR HAS DESCRIBED IN WRITING TO THE DISTRICT MANAGER WHAT PRECAUTIONS WILL BE TAKEN TO ENSURE THAT THERE ARE NO HAZARDS FROM RECLAIMING OPERATIONS BEFORE PERSONS ARE PERMITTED TO ENTER OR WORK ON THE RAW COAL STORAGE BIN. ROBERT O'MEAR AND ROBERT JOHNSON ARE RESPONSIBLE FOR THIS AREA.

See Continuation Form (MSHA Form 7000-3a)

9. Violation	Health Safety Other	B. Section of Act	C. Part/Section of Title 30 CFR
	<input checked="" type="checkbox"/>		

Section II - Inspector's Evaluation

10. Gravity

A. Injury or Illness (has) (is): No Likelihood  Unlikely  Reasonably Likely  Highly Likely  Occurred

B. Injury or Illness could reasonably be expected to be: No Lost Workdays  Lost Workdays or Restricted Duty  Permanently Disabling  Fatal

C. Significant and Substantial (See Reverse): Yes  No  D. Number of Persons Affected:

11. Negligence (check one): A. None  B. Low  C. Moderate  D. High  E. Reckless Disregard

12. Type of Action: 107-5-1, -1, -1

13. Type of Issuance (check one): Citation  Order  Safeguard

14. Initial Action: A. Citation  B. Order  C. Safeguard  D. Written Notice  E. Citation/Order Number:

15. Area or Equipment: RAW COAL STORAGE BIN

16. Termination Due: A. Date:  B. Time (24 Hr. Clock):

Section III - Termination Action

17. Action to Terminate:

18. Terminated: A. Date:  B. Time (24 Hr. Clock):

Section IV - Automated System Date

19. Type of Inspection (activity code): AFA 20. Event Number: 5322233 21. Primary or Mill:

22. Signature: *James Chapman* 23. AS Number: 20624



Section I - Violation Data

1. Date	Mo	Da	Yr	2. Time (24 Hr. Clock)	3. Citation/Order Number
	0	2	0	1430	2706193
4. Served To	5. Operator				
ROBERT O'NEAR, GEN'L SUPT.	CONSOLIDATION COAL COMPANY				
6. Mine	7. Mine ID				(Contractor)
LOVERIDGE # 22	46-01433				
8. Condition or Practice					8a. Written Notice (103g)

DURING THE COURSE OF A MULTIPLE FATAL ACCIDENT INVESTIGATION IT WAS REVEALED THAT PERSONS WERE PERMITTED TO WALK ON THE RAW COAL STORAGE PILE WITHOUT ADEQUATE SAFEGUARD TO ENSURE THERE WERE NO HAZARDS FROM THE RECLAIMING OPERATIONS.

NO TERMINATION DUE DATE SINCE THIS IS A FACTOR THAT CONTRIBUTED TO THE ISSUANCE OF IMMINENT DANGER ORDER No 2706192

ROBERT O'NEAR AND ROBERT JOHNSON ARE RESPONSIBLE FOR THIS AREA.

See Continuation Form (MSHA Form 7000-3a)

9. Violation	A. Health Safety Other	B. Section of Act	C. Part/Section of Title 30 CFR
	<input checked="" type="checkbox"/>		77.209

Section II - Inspector's Evaluation

10. Gravity:

A. Injury or Illness (has) (is): No Likelihood  Unlikely  Reasonably Likely  Highly Likely  Occurred

B. Injury or Illness could reasonably be expected to be: No Lost Workdays  Lost Workdays or Restricted Duty  Permanently Disabling  Fatal

C. Significant and Substantial (See Reversal): Yes  No  D. Number of Persons Affected: 00

11. Negligence (check one): A. None  B. Low  C. Moderate  D. High  E. Reckless Disregard

12. Type of Action: 104-A- ; - - - Citation  Order  Safeguard

13. Type of Issuance (check one): Citation  Order  Safeguard

14. Initial Action: A. Citation  B. Order  C. Safeguard  D. Written Notice  E. Citation, Order Number: F. Dated: Mo Da Yr

15. Area or Equipment:

16. Termination Due	A. Date	Mo	Da	Yr	B. Time (24 Hr. Clock)

Section III - Termination Action

17. Action to Terminate

18. Terminated	A. Date	Mo	Da	Yr	B. Time (24 Hr. Clock)

Section IV - Automated System Data

19. Type of Inspection (activity code)	20. Event Number	21. Primary or Minor
AFA	5322233	

22. Signature	23. AR Number
Wm. Thompson	20620