

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
HEALTH AND SAFETY ACTIVITY

REPORT OF MULTIPLE FATAL ROOF-FALL ACCIDENT
JEFFERSON ISLAND MINE
DIAMOND CRYSTAL SALT COMPANY
JEFFERSON ISLAND, IBERIA PARISH, LOUISIANA

February 19, 1970

by

Roy Capps
Safety Representative

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South Central District

INTRODUCTION

This report is based on an investigation made pursuant to clause (1) of section 4 of the Federal Metal and Nonmetallic Mine Safety Act (80 Stat. 772).

About 9:30 a. m., on Thursday, February 19, 1970, a roof fall occurred near the face of the North Main No. 1 entry, a development area on the 1,300-foot level. Preparations were being made to move a loading shovel to the face prior to the normal loading cycle. Five men were in the area at the time of the accident, four were killed and one received minor injuries. The names of the deceased are shown in appendix A.

The Dallas office was notified of the accident at 10:30 a. m., Thursday, by Roy Lege, office manager for the company, and an investigation was started the next day, Friday, February 20, 1970.

Information for this report was obtained during a visit to the scene of the accident and from statements made by company officials, workmen, and a witness to the accident.

GENERAL INFORMATION

The Jefferson Island mine of the Diamond Crystal Salt Company is a salt mine located at Jefferson Island, Louisiana. It is served by rail and by barge. The operating officials were:

Charles F. Moore, president, St. Clair, Michigan
Russell Rudolph, vice president, St. Clair, Michigan
C. D. Cronenworth, general production manager, St. Clair, Michigan
G. D. Petrick, manager, New Iberia, Louisiana
Richard Siefertman, superintendent, New Iberia, Louisiana

The mine was opened by two vertical shafts 1,300 feet deep into a Gulf Coast salt dome.

A total of 240 men was employed, of which number 70 worked underground, 3 shifts a day, 5 days a week. The average daily production was 6,000 tons of salt. There have been no disasters at this mine during its operation, which began in 1920. The last Federal inspection was completed October 29, 1969.

Salt was mined by a modified room-and-pillar method. Since the terrain of Jefferson Island is barely above sea level (elevation at shaft 55 feet, above mean tide), prevention of subsidence is essential, and therefore, pillars were not extracted. Pillars in room sections were 75 by 100 feet. Rooms were driven 70 to 100 feet wide and 30 feet high. Crosscuts and development entries were 70 feet in width. They were undercut 10 feet with an electric cutting machine, drilled with an electric drill, blasted, and then loaded with electric shovels into diesel trucks. A sublevel, not indicated on the map, was developed by slopes from the mining level. Lower-level excavations

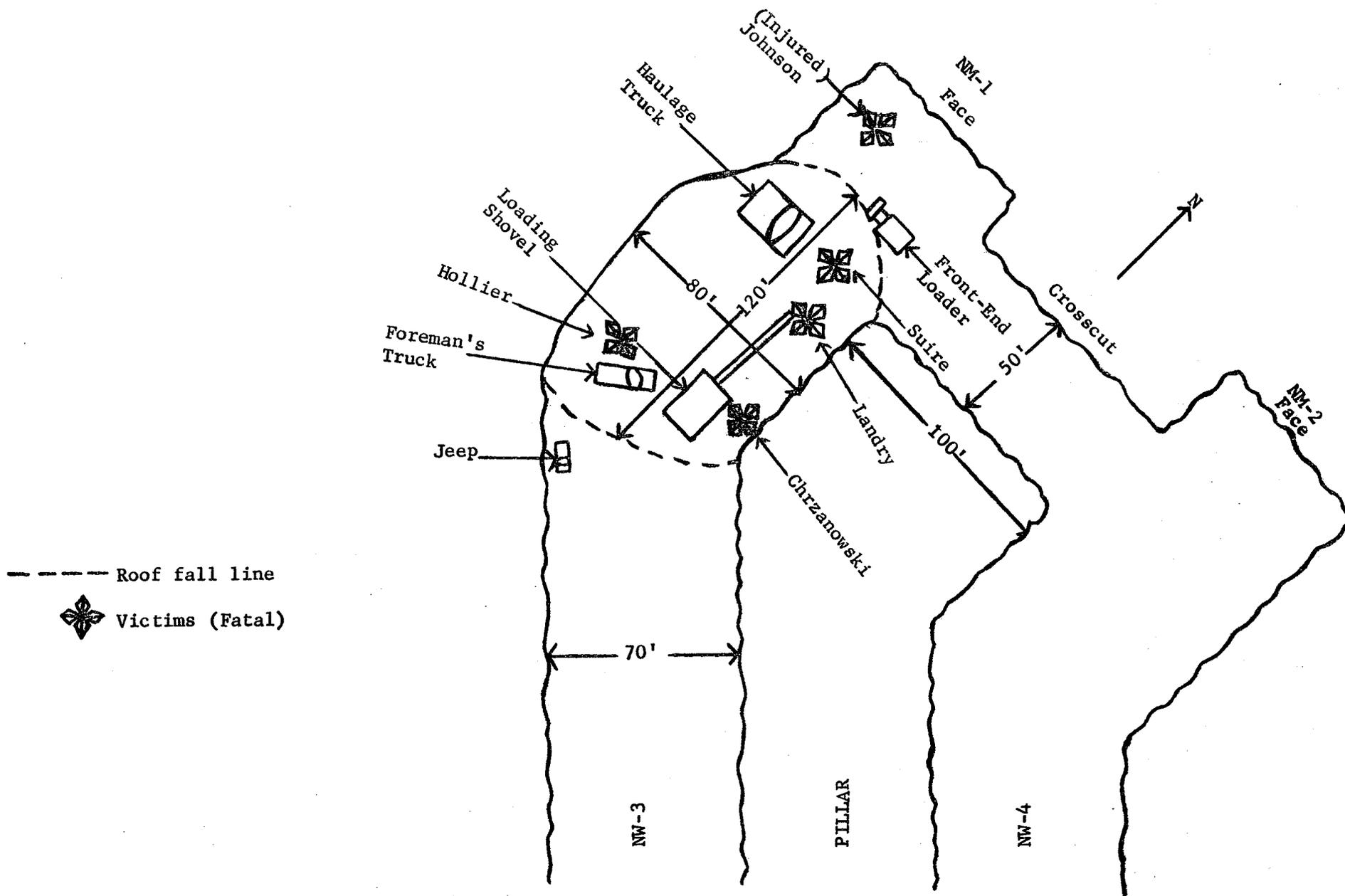
and pillars were aligned with those on the working level and mined similarly. The floor pillar was drilled from the upper level, blasted, and then loaded from the lower level. Completely mined-out areas were 75 feet high. A typical room plan and development section is shown in appendix B.

Scaling of top and ribs was accomplished with a scaling rig and is described as a mobil truck equipped with a telescoping boom capable of reaching the desired height.

The roof was a hard and firm native salt. Timbering was not done, as the roof was generally self supporting. Rooms remained open for many years after they had been abandoned. The roof was examined daily by a designated person, and scaling was done with the scaling rig. The miners tested the roof before other work was begun. Rock bolts were used to support roof and ribs in questionable roof areas. A study made in December 1967 by a Bureau of Mines roof-control representative resulted in a recommendation that suspected areas be probed by means of a stratascope and roof-bolted as found advisable; this procedure was adopted. Roof bolts were of the expanding shell-type 3/4-inches in diameter, 6 feet long, and were installed on 6-foot centers with a 6- by 6-inch metal bearing plate 3/8-inches in thickness. In 1964 a Canadian engineering firm which specialized in rock mechanics conducted a survey prior to the opening of the 1,300-foot level. The study was made from the 1,000-foot level. Their recommendations as to direction of rooms and mining methods were followed in the 1,300-foot level. Currently, the company is working in conjunction with Texas A. and M. University toward the development of radar or other electronic methods to detect moisture and voids in unmined strata. This salt mining area is in the midst of an oilfield where drilling and production are carried on near the salt domes.

Experience has shown that planes of separation above the exposed roof are always associated with intrusions of oil and some hydrogen sulphide, which was detected while drilling the face or stains on the salt following blasting. When these conditions were found, the roof was bolted according to plan. These indications were not present in the development area where the accident occurred. Therefore, the area was considered self supporting and roof supports were not used, based on past experiences.

A safety organization was maintained, and a full-time safety director was employed. Safety inspections were made by the safety committee and the safety director. Safety meetings were held weekly, and the plant and mine safety rallies were held every three months.



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The investigating committee consisted of:

Diamond Crystal Salt Company
G. D. Petrick, manager
Richard Siefertman, superintendent
Charles Dixon, mine engineer

United States Bureau of Mines
Roy Capps, safety representative

DESCRIPTION OF ACCIDENT

The production crew entered the face area of the north main No. 1 entry about 8 a. m. the day of the accident and were making preparations to proceed with normal loading cycle. Rivers Johnson (witness) began to clean up salt impurities on the left side of the face prior to moving the loading shovel to the face. The crew had loaded one truck which had left the area toward the refuse dump. About 9:30 a. m., Obra Suire, roof scaler, was preparing to handle the shovel cable when the shovel was moved. Lemnis Landry, shovel operator, was walking toward the shovel to get into the cab and start the shovel. Josef Chrzanowski, general mine production foreman, was directing the moving of the shovel. John Hollier, mine production foreman, was near his pick-up truck. Apparently he was preparing to go to another part of the mine.

The north main No. 1 face was blasted at 6:15 a. m. Johnson stated that he examined the roof before the men entered the area. Mine officials stated that the roof was examined and scaled with a scaling rig the day before the accident.

Rivers Johnson (witness), front-end loader operator, was standing by the front-end loader near the face. In the meantime and without warning, an area of roof fell measuring 80 feet wide, 120 feet long, and ranging from 1 to 5 feet in thickness, killing Chrzanowski, Hollier, Suire, and Landry. Johnson received abrasions of the left arm from flying material. A 2-3/4-cubic-yard shovel, a 30-ton haulage truck, and a 1-1/2-ton pick-up truck were crushed by the fall. (See sketch of accident scene.)

Johnson (witness) stated that he proceeded through the crosscut near the face to the north main No. 2 entry, where he met Wilson Landry and informed him of the accident. A few minutes later, they met William Campbell, and the three men went back to the accident area. Campbell then notified employees in the maintenance shop, who in turn called the surface at 9:45 a. m. The four bodies were removed from the mine at 12:30 p. m.

An examination of the surface of the fallen salt was made for planes of separation, but none was found. The pillar between the north main No. 1 and the north main No. 2 development entries near the face was 100 feet wide.

CAUSE OF ACCIDENT

The cause of this accident was the inability to detect loose roof of this nature with present methods of roof testing.

RECOMMENDATIONS

1. A study should be made by a roof-control specialist or other qualified person to re-evaluate the present mining method and roof-control procedures.
2. The use of the stratascope should include all development work whether or not indications of planes of separation are observed. These tests should be made not less than 20 feet apart.
3. The roof-bolting plan should be expanded to include the development area in the north main No. 1 and No. 2 sections.

/s/ Roy Capps

Roy Capps
Safety Representative

APPENDIX A

Diamond Crystal Salt Company
 Jefferson Island Mine
 Jefferson Island, Louisiana

List of Deceased and Injured - February 19, 1970

NAME	AGE	No. of DEPENDENTS	OCCUPATION	EXPERIENCE THIS MINE	TOTAL MINING EXPERIENCE
John O. Hollier	34	5	Production foreman	13-1/2 years	13-1/2 years
Josef Chrzanowski	52	5	General production foreman	7-1/2 years	20 years
Obra Suire	28	3	Roof scaler	1-1/2 years	1-1/2 years
Lennis Landry	30	8	Shovel operator	17 years	17 years
Rivers Johnson (Injured)	54		Front-end loader operator	17 years	17 years

Information provided by employer

APPENDIX B

Typical Room Plan (1,300 ft. level)

Scale: 1' = 200"

