

STATEMENT UNDER OATH
OF
THOMAS BARKAND

Taken pursuant to Notice by Richard J. Lipuma, CCR, a Court Reporter and Notary Public in and for the Commonwealth of Pennsylvania, at MSHA Technical Support Office, Building 2, Industrial Park Drive, Triadelphia, West Virginia, on Wednesday, December 12, 2007 beginning at 9:29 a.m.

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19 ALSO PRESENT:

20 Suzanne Escott, Notary Public

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P R O C E E D I N G S

MR. MORLEY:

My name is Thomas Morley, and I'm an accident investigator with the Mine Safety & Health Administration (MSHA), an agency of the U.S. Department of Labor. With me is Derek Baxter, from the Solicitor's Office. And we will be conducting the questioning today.

I, together with other government investigators and specialists, have been assigned to investigate the conditions, events and circumstances surrounding the fatalities that occurred at the Crandall Canyon Mine in Utah in August 2007. The investigation is being conducted by MSHA under Section 103(a) of the Federal

1 Mine Safety & Health Act. We
2 appreciate your assistance in
3 this investigation.

4 After the investigation
5 is complete, MSHA will issue a
6 public report detailing the
7 nature and causes of the
8 fatalities in the hope that
9 greater awareness about the
10 causes of accidents can reduce
11 their occurrence in the
12 future. Information obtained
13 through witness interviews is
14 frequently included in these
15 reports. Your statement may
16 also be used in other
17 proceedings.

18 Your statement is
19 completely voluntary. You may
20 refuse to answer any question
21 and you may terminate your
22 interview at any time. And
23 feel free to request a break
24 at any time.

25 A court reporter will

1 record your interview. Please
2 speak loudly and clearly. If
3 you do not understand a
4 question asked, please ask me
5 to rephrase it. Please answer
6 each question as fully as you
7 can, including information
8 that you have learned from
9 someone else.

10 I would like to thank
11 you in advance for your
12 cooperation here. We
13 appreciate your assistance in
14 this investigation. And your
15 cooperation is critical in
16 making the nation's mines
17 safer.

18 After we have finished
19 asking questions, you will
20 have an opportunity to make a
21 statement and provide us with
22 any other information that you
23 believe to be important. If
24 after the interview you recall
25 any additional information

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that may be useful, please
contact Richard Gates.

Ms. Escott, would you
please swear in the witness?

MS. ESCOTT:

Yes. If you would just
raise your right hand.

THOMAS BARKAND, HAVING FIRST BEEN
DULY SWORN, TESTIFIED AS FOLLOWS:

MR. MORLEY:

Ms. Escott, are you
empowered as a notary in the
State of West Virginia?

MS. ESCOTT:

Yes.

MR. MORLEY:

And when does your
commission expire?

MS. ESCOTT:

9/23/2015.

MR. MORLEY:

Have you sworn in Mr.
Barkand?

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MS. ESCOTT:

Yes.

BY MR. MORLEY:

Q. Please state your full name and address for the record.

A. Thomas D. Barkand. I'm at MSHA, (b)(7)(C)

Q. Do you have any questions about the interview process as I have described it?

A. No.

Q. Okay. You are appearing here today voluntarily?

A. Yes, I am.

Q. Who is your present employer?

A. MSHA.

Q. How long have you worked there?

A. Since 1975.

Q. And what is your job title?

A. I'm an electrical engineer.

Q. Where do you work and what are your primary areas of responsibility?

A. I work in Technical Support

1 and for the Mine Electrical Systems
2 Group. Primary areas of
3 responsibilities are electrical
4 safety and hoist and elevator safety.

5 Q. And how long have you been in
6 that position?

7 A. Since graduation in 1980.

8 Q. Who is your current
9 supervisor?

10 A. William J. Helfrich,
11 H-E-L-F-R-I-C-H.

12 Q. How were you notified of the
13 August 6th accident and by whom?

14 A. Dean Skorski was acting
15 supervisor of the mine Electrical
16 Systems Division on that day, and he
17 called me. I was en route to the
18 Approval and Certification Center for
19 our meeting at one o'clock, and he
20 called me and asked if I would be
21 willing to drive one of the mine
22 emergency operation vehicles up to
23 the airport to respond to the
24 Crandall Canyon accident.

25 Q. Can you describe your role in

1 the rescue operation, starting from
2 the time you were first called
3 through when you arrived on the
4 property until the time ---? Just
5 tell us what you know.

6 A. Okay. I said primarily I was
7 just to assist the Mine Emergency
8 Operations Division in setting up the
9 seismic --- deploying and setting up
10 the seismic equipment. I drove the
11 truck to the airport, the 911th Air
12 Force Reserve.

13 Q. What truck?

14 A. I drove the --- what they call
15 the auxiliary truck, which has the
16 generators on it. I drove that to
17 the airport. Drove it up onto a C-17
18 airplane and it was transported to
19 Grand Junction, Colorado. We
20 deplaned at Grand Junction and drove
21 to the mine site.

22 Q. Who did you travel with?

23 A. I traveled with John Gibson,
24 who was driving the seismic truck,
25 and Jeff Kravitz, who was in another

1 rental vehicle.

2 Q. Okay.

3 A. Would you like me to go
4 through the entire timeline?

5 Q. Sure. Then we'll go back and
6 ask questions, more specific
7 questions later. When did you arrive
8 in Grand Junction?

9 A. It was 4:30 local time --- or
10 3:30 local time, I believe.

11 Q. On the ---?

12 A. Oh, I'm sorry. On the 7th.

13 Q. The afternoon?

14 A. Oh, no. It was about 3:30
15 a.m. on August 7th.

16 Q. Okay.

17 A. It took us about --- we got on
18 the road and headed towards the mine
19 around 4:30 a.m., arrived at the mine
20 site around 10:30, 11 o'clock. At
21 that point, we were trying to
22 determine a location to set up the
23 seismic equipment, and we drove the
24 two mine emergency operation
25 vehicles, the auxiliary truck and the

1 seismic truck, up to the --- you
2 know, to the top of the mountain.
3 And we realized that wasn't a good
4 place to deploy them because we
5 needed line of sight to set up the
6 seismic equipment, the arrays. We
7 needed to have a direct line of sight
8 to the trucks, and there wasn't. The
9 terrain was so rough that we really
10 didn't have a good vantage point, so
11 they scouted an area that was on the
12 opposite side of the mountain ridge,
13 down in an area called Joe's Valley.
14 And we drove the vehicles down into
15 that valley and set them up.

16 And in the meantime, there was
17 another team who was deploying the
18 geophone arrays on the mountainside,
19 and they were setting those up while
20 we drove down into the valley. And
21 about 10:30 p.m. on August 7th we
22 established communications with the
23 geophone arrays. And from that point
24 on, we monitored for seismic --- you
25 know, seismic activity.

1 Q. That's when the system became
2 operational?

3 A. Yes.

4 Q. What were your duties after
5 that point?

6 A. Primarily I assisted John
7 Gibson and Jeff Kravitz in operating
8 the seismic system. And there were
9 some maintenance issues. We had to
10 change the batteries --- the battery
11 packs on the geophone arrays that
12 were on the mountainside. They were
13 good for about four days, and we
14 tried to change them out every two or
15 three days. We also, you know,
16 recorded the --- had the chart
17 recorder running and recorded any
18 seismic events.

19 Q. Okay. So you pretty much did
20 that throughout the entire rescue?

21 A. That's correct.

22 Q. And how long were you on site
23 that day?

24 A. I was on site until September
25 4th. That was my last day on site.

1 Q. So was the seismic system
2 operating from the 7th all the way
3 until September 4th?

4 A. No. We started to break down
5 the seismic system a few days prior
6 to departure.

7 Q. When you arrived on the
8 property, who did you report to and
9 did you have any specific
10 instructions?

11 A. No, I didn't report to anybody
12 on the mine site. I just was working
13 under the direction of Jeff Kravitz.

14 Q. Okay. After the seismic
15 system was deployed on the 7th, what
16 was your mode of operation there?
17 Were you just monitoring continuously
18 or were there times when you
19 established quiet periods and you
20 tried to signal underground? Can you
21 just explain what the procedure was
22 during the monitoring phase?

23 A. We did try to monitor
24 continuously. There were some
25 periods when we maybe weren't running

1 the chart recorder. We had some
2 issues with the paper jamming
3 essentially when running for long
4 periods of time. But we tried to
5 monitor continuously and we did
6 establish quiet periods. And those
7 were the periods where the data was
8 most valuable because when we were
9 running normally, all the surface
10 activity, we would have picked up
11 that on the seismic systems. So
12 really it was during the quiet
13 periods that we could pick up more
14 valuable data.

15 Q. So while the drilling
16 operations, et cetera, were going on,
17 you really couldn't get information?

18 A. No. The signals were ---
19 surface signals would swamp out any,
20 you know, faint signals from
21 underground. So we were pretty much
22 monitoring most of the activity on
23 the surface. And that was drowning
24 out the signals that we had --- that
25 we'd be getting underground. We

1 actually had to adjust the gain on
2 the recorders down to attenuate and
3 --- in doing that so that we didn't
4 essentially just go off scale, you
5 know. So we decreased the
6 sensitivity so that, you know,
7 --- and in doing so, you know, it
8 made it more difficult to pick up
9 signals underground.

10 Q. Okay. During the quiet
11 period, did you readjust it or ---?

12 A. Yeah, absolutely. We could
13 increase the gain on the amplifiers
14 whenever it was a quiet time.

15 Q. Was there any protocol
16 established for --- we're going to
17 have a quiet time after such a set
18 period of time, or was there --- is
19 there a set schedule or --- do you
20 know what that was?

21 A. You know, typically, when they
22 first holed through, when they were
23 drilling the bore hole and the moment
24 the holed was through into the mine,
25 they would strike on the drill steel

1 to try to signal to the miners. And
2 at that period we would monitor very
3 intensely for underground signaling
4 coming back, and those would be the
5 periods when they broke through.

6 Q. Was there a log kept of when
7 those periods were?

8 A. All the information I had was
9 just what we --- the chart recorders,
10 so ---. And I do have some of those
11 specific times recorded on the chart
12 recorders.

13 Q. Let me ask you this. Did you
14 ever detect or hear anything that you
15 thought would be some kind of
16 response?

17 A. There was one particular event
18 that occurred on August 15th, after
19 they had drilled through the number
20 three bore hole. And when they
21 struck on the drill steel, we did
22 receive some signaling that we
23 weren't sure where it was coming
24 from, but it was somewhat
25 evenly-spaced signals, repeating

1 about every second to two seconds.
2 And this went on for several minutes.

3 Q. So you thought that might be
4 manmade?

5 A. It certainly appeared to be
6 manmade, we just didn't know its
7 origins.

8 Q. And that was at what time on
9 the 15th?

10 A. That was at 10:20 a.m. on the
11 15th of August.

12 Q. And that was after the
13 completion of one of the bore holes?

14 A. Yeah. That was after the
15 completion of number three bore hole.

16 Q. Did you --- were you ever able
17 to duplicate --- or did you ever hear
18 that kind of sound again?

19 A. Not for that particular
20 interval frequency, no, the one to
21 two seconds. And for that length of
22 time, we had never seen anything like
23 that prior or after.

24 Q. Okay. So after each bore hole
25 you established quiet times for that.

1 Were you involved in any of the other
2 parts of the drilling operation?

3 A. No, other than for assisting
4 and deploying the robots later in the
5 accident rescue effort.

6 Q. When the bore hole was
7 completed, were you there when they
8 --- through this --- did they have
9 any particular protocol they went
10 through as far as listening or were
11 you down in the seismic truck down
12 below?

13 A. Over the period of the rescue
14 operation I was --- sometimes I was
15 in the truck and sometimes I was up
16 on the mountain itself.

17 Q. What else did they do when
18 they holed through. Did they --- do
19 you remember the procedures they
20 used?

21 A. My recollection is as soon as
22 they holed through, with the drill
23 steel still in the mine, they would
24 strike, you know, with hammer blows.
25 Then they would, what they call trip

1 out. They'd pull the drill steel
2 out, and then typically would lower a
3 microphone ---

4 Q. Okay.

5 A. --- down in the hole and talk
6 to see if you could summon them
7 through voice ---.

8 Q. Did you ever detect anything
9 on the microphone?

10 A. I never listened to the
11 microphone. I wasn't listening, on
12 the listening end.

13 Q. Okay.

14 A. And then typically they would
15 then lower a camera down the hole as
16 well to look around, if it was an
17 open space. So that was the
18 procedure we typically went through.

19 Q. Okay. You never heard them
20 mention that they heard anything on
21 the microphone?

22 A. No.

23 Q. Were you involved with the
24 camera operation at all?

25 A. No, I wasn't.

1 Q. Okay. You talked a little bit
2 about the robot. How and when was
3 that used?

4 A. They had obtained a small
5 robot to use for exploration and were
6 trying to --- it would only fit down
7 a hole that was uncased. We had two
8 holes to choose from at that time.
9 It was number three or number four
10 bore hole. We felt the --- after
11 dropping a camera down, it looked
12 like the number three bore hole might
13 present the better option, so --- and
14 I'm not sure of these dates.

15 Q. Okay.

16 A. August --- I think somewhere
17 around August 29th we dropped the
18 robot down the number three bore
19 hole. As we got near the mine entry,
20 the hole had shifted in some way so
21 that the robot couldn't go through
22 it. It stopped short, several feet
23 short of the mine --- of getting into
24 the mine entry.

25 Q. Okay.

1 A. So we withdrew the robot and
2 opted to go through the number four
3 bore hole, which I believe we did the
4 following day, which would be around
5 the 30th of August. It was lowered
6 down in and moved a few feet at the
7 bottom. There was some difficulty
8 moving the robot because there was a
9 lot of mud and sludge, you know,
10 right below the bore hole because the
11 bore hole was making water and, you
12 know, and a lot of debris was down
13 there.

14 If I recall, we called it a
15 day and the following day went back.
16 And I wasn't up there at the time I
17 was down in the truck, but they again
18 tried to maneuver around and explore
19 the area. And I'm not sure to what
20 success they had as far as how far
21 they were able to move around, but
22 they decided to withdraw the robot
23 and brought it up the bore hole and
24 got it to about 50 feet. The robot
25 had --- it was put together --- there

1 was --- the robot, there was about
2 500 feet of copper wire that went
3 into a large cannister, we call it a
4 cannister, that had a battery source
5 for it. And it was about six inches
6 in diameter and about three feet
7 long. And then that went through a
8 fiberoptic.

9 The problem was they couldn't
10 run --- because of the depth of the
11 bore hole being over 2,000 feet, the
12 losses in the copper, trying to power
13 through the copper wire were too
14 great. So we used the fiber cable
15 into a module, cylinder, then it was
16 converted into copper, and it powered
17 the robot from there. And it
18 contained a battery pack. It was
19 pretty large.

20 The reason why I stopped to
21 clarify, as we were bringing the
22 robot up, it was that cannister that
23 got stuck within about 50 feet from
24 the top. The bore hole had collapsed
25 overnight. From the time we dropped

1 it in to the next morning, when we
2 started to pull it out, the bore hole
3 had collapsed. There was a large
4 rock blocking the cannister from
5 coming up. And of course, the robot
6 was about 500 feet down from that
7 cannister, so we couldn't withdraw
8 the robot. And there were several
9 attempts made to dislodge the rock in
10 the bore hole so we could extract the
11 robot. They used a large --- several
12 hundred pound chisel. We dropped
13 that. That was unsuccessful, so ---
14 that was on September 1st, as I
15 recall. That attempt was
16 unsuccessful, so they ordered
17 basically a vacuum truck to try to
18 suck this debris out of the hole.
19 And that occurred on September 2nd.
20 They used high-pressure water, a
21 vacuum truck.

22 And by then there was about 20
23 feet of debris had piled up on this
24 rock. The hole was continuing to
25 collapse as time was going on. And

1 they got all the debris off the rock
2 but still could not get it past this
3 large rock. Made one final attempt
4 to pull the robot out using a track
5 hoe and put the cable on there and
6 lift it up and the cable severed ---
7 the fiberoptic severed, and the robot
8 went down in the hole. So we never
9 did recover the robot or the
10 cannister.

11 Q. Whose robot was it, do you
12 know?

13 A. I don't know whose it was.

14 Q. Who built it?

15 A. A company called Inuktun, and
16 I don't know how to spell that. It's
17 out of Canada. And there was another
18 company involved called Pipe Eye,
19 E-Y-E. And they collaborated to
20 build this system because of the
21 lengths involved. We needed --- Pipe
22 Eye had a truck with a winch on it.
23 It had several thousand feet of this
24 fiber cable and then that cannister
25 that converted the fiber into copper

1 and powered the robot. And Inuktun
2 supplied the robot, I believe. I was
3 not involved in any of those --- the
4 details of working that out. That
5 was Jeff Kravitz and Robin Murphy
6 from the University of South Florida
7 and --- I believe there was a
8 representative from Inuktun and also
9 two representatives from Pipe Eye.

10 Q. Who operated it, do you know?

11 A. It was operated by the
12 representatives from Pipe Eye.

13 Q. Okay.

14 MR. MORLEY:

15 We're going to take a
16 short break here.

17 SHORT BREAK TAKEN

18 BY MR. MORLEY:

19 Q. Tom, do you know how many ---
20 getting back to the seismic system,
21 do you know how many geophones were
22 set out?

23 A. Geophone arrays, there's
24 several geophones in each array and
25 there was seven of them set out in

1 what they call a double-diamond
2 pattern.

3 Q. Okay. So how many total
4 geophones were set out then?

5 A. I believe there's seven
6 individual geophones in each array,
7 but they're all in parallel, you
8 know. They all pick up the same
9 signal, essentially, but they're set
10 out in a circular pattern, with one
11 in the center. So there's one in the
12 center, six around the outside, and
13 then that constitutes one geophone
14 array. And then we deployed seven of
15 those arrays on the surface of the
16 mountain.

17 Q. Okay. Who decided where to
18 put those?

19 A. That was decided --- Jeff
20 Kravitz was directing the operations
21 for the deployment of those. And the
22 initial pattern we set up was between
23 --- from end to end was from Crosscut
24 141 to Crosscut 133. That would be
25 the two points of the diamond.

1 Q. So each array goes back to
2 some kind of a transmitter?

3 A. That's correct.

4 Q. And that ---?

5 A. Then that transmitter sends
6 --- has a channel that broadcasts
7 that channel down into the seismic
8 truck, which we had down on the
9 backside of the mountain in Joe's
10 Valley and it picks up the signal and
11 it's processed and recorded down in
12 the truck.

13 Q. So you're recording seven
14 channels of information?

15 A. That's correct.

16 Q. Okay. What's the capability
17 of the system? What's the deepest
18 it's ever worked or do you know what
19 the depth ---?

20 A. I heard that it's good for up
21 to 2,000 feet, but it can only
22 actually locate --- triangulate and
23 locate at depths around 1,500 feet.
24 But it can sense as deep as 2,000
25 feet. That's what Jeff Kravitz and

1 John Gibson told me.

2 Q. How did you guys monitor the
3 system with the rotating shifts
4 or ---?

5 A. We didn't rotate shifts. That
6 would have been nice. We pretty much
7 worked as many hours as we could to
8 man the system. While we weren't
9 there, though, we would run the ---
10 we'd have the recorder logging the
11 data. And when we came back on
12 shift, we would review that data. So
13 we tried to achieve continuous
14 monitoring without having multiple
15 shifts. John and I typically worked
16 together on maintaining and operating
17 the seismic system.

18 Q. Okay. You had said earlier
19 that you established quiet times when
20 the drill was going to hole through
21 into the mine. How did you
22 communicate with the drillers and how
23 did you know when they were --- when
24 you were getting ready?

25 A. Well, you know, there was ---

1 the bore hole progress was always
2 being monitored as far as how far
3 they are, what kind of progress we're
4 making, so we had an estimated time
5 that they would hole through. But
6 typically I would get the word from
7 Jeff Kravitz when to be out there.
8 If it's going to be some, you know,
9 early morning hours, he would call
10 and say, that's --- you know,
11 assemble out from the hotel and
12 travel to the mine site and monitor.
13 And he was, I believe, in touch with
14 the command center for that
15 information.

16 Q. Was the monitoring truck in
17 touch with the command center where
18 you were located in Joe's Valley?

19 A. We had a satellite phone in
20 the seismic truck, so we could
21 communicate directly with the command
22 center.

23 Q. When you got word that they
24 were going to hole through and you
25 established a quiet time, was that

1 also established underground, do you
2 know?

3 A. I do not know.

4 Q. Do you know if they quit
5 operating machinery?

6 A. No, but I'm --- my feeling is
7 that they probably did not. I don't
8 believe there was a correlation to
9 try to be quiet underground, no.
10 They were working several thousand
11 feet away from where we were setting
12 up the --- where we had the seismic
13 equipment.

14 Q. Did you --- was there any ---
15 do you know of any tests that were
16 done on the system by banging inside
17 the mine or anything like that to see
18 if you could detect it?

19 A. I'm not aware of any tests we
20 did at that location. The system has
21 been tested on, you know, --- in
22 field exercises, but not at that
23 particular mine during the rescue
24 operation.

25 Q. So the noise that was detected

1 on the 15th, you're uncertain --- you
2 don't know whether the underground
3 was quiet at that time or not, is
4 that a fair statement?

5 A. That's right.

6 Q. What was done after you heard
7 the noise?

8 A. Essentially, the plan of
9 sinking the next bore hole was
10 modified, and they opted to sink a
11 bore hole at the location directly
12 --- you know, at the location where
13 the geophone picked up that noise,
14 which was bore hole number four.
15 They had planned to drill it in an
16 alternate location, further towards
17 --- further outby. And based on the
18 noise signals, they then drilled the
19 number four bore hole at that
20 location where the signal was picked
21 up.

22 Q. How were you trained on the
23 seismic system? Did you participate
24 in any exercises with them?

25 A. I was never trained on the

1 seismic system and I never
2 participated in any field exercises.

3 Q. So during your shifts you were
4 working with John Gibson, was he the
5 primary person ---?

6 A. Absolutely. John is very,
7 very knowledgeable of the system.

8 Q. The signals that were
9 detonated to --- well, the charges
10 that were detonated to try and signal
11 the miners, do you know what they ---
12 any information about them, when they
13 were set off and what size they may
14 have been?

15 A. If you give me a minute, I can
16 pull out the chart recordings and
17 show them to you. Or do you want ---
18 I had taken some notes off of them,
19 if you want me just to read those.

20 Q. Why don't you go with your
21 notes right now. And if we take
22 another break, you maybe can refer to
23 the chart recordings.

24 A. Okay. Based on the chart
25 recordings, it indicated about 12:16

1 p.m. on August 18th three charges
2 were fired about five seconds apart.
3 And then at 12:53 p.m., another
4 series of three shots were fired,
5 approximately five seconds apart.

6 Q. Do you know how large the
7 charges were?

8 A. The notes on the chart
9 recordings indicate that the first
10 round of charges fired at 12:16 p.m.
11 were 600 pound --- I'm sorry, strike
12 that, 100 pound charges. And the
13 second series of explosions were
14 50 pound charges. I'm not sure if
15 that's entirely correct because I
16 believe they might have had a mixed
17 charge level because there was an odd
18 number of holes drilled, and I don't
19 recall the exact number. But they
20 were fired --- some were fired as
21 single shots and some were fired as
22 two shots at a time. So I don't
23 know, but I don't think they were
24 even charges in all --- you know, the
25 first three series and the second

1 three series, but I don't know
2 exactly what they were.

3 Q. Do you know who would have
4 that information?

5 A. Yeah. I just forgot his name.
6 Dave from the mine, Dave ---.

7 MR. GATES:

8 Canning.

9 A. Canning. Yeah, Dave Canning.

10 MR. MORLEY:

11 Dave Canning.

12 A. He was the one who approached
13 us when we first arrived on the 7th
14 and asked about the charges, you
15 know. And he was very much involved
16 in that, so he --- I'm sure he would
17 know.

18 BY MR. MORLEY:

19 Q. Do you know how old the
20 seismic system is and how reliable it
21 is?

22 A. I don't. I don't know how old
23 it is. I know it does, in fact, work
24 as far as picking up, you know,
25 vibrations. It does --- when we were

1 doing some of the testing and we were
2 trying to establish quiet time, if
3 anyone walked, you know, they would
4 pick up their footsteps or close the
5 door. So it certainly was
6 functional.

7 Q. I don't know if we got to
8 this. What did --- other than the
9 location of bore hole four, was there
10 anything else done after hearing a
11 noise on the 15th or 16th? In other
12 words, was there attempts made to
13 listen more often or ---?

14 A. Well, we --- like I said, we
15 were monitoring pretty much
16 continuously. There was no
17 additional quiet time. You
18 understand, you know, the surface
19 activity was pretty intense with the
20 drilling and all the --- the dozers
21 cutting the roads, so any quiet time
22 that we would ask for resulted in
23 stopping or ceasing of the operations
24 on the surface. So that --- we tried
25 to restrict quiet time to moments we

1 thought were most critical, which
2 were when they holed through.

3 Q. Were you present or do you
4 know the procedure they used to try
5 and verify any voids when they
6 drilled through, how they would have
7 done that?

8 A. I'm not sure exactly how they
9 determined the height of the void
10 initially. I don't know if the
11 drillers had a feel for once it broke
12 through and they set it down on the
13 bottom how many feet. That might
14 have been one indication that
15 certainly after they withdrew the
16 drill steel and dropped a camera down
17 in the hole, then the void area could
18 be detected. So you know, once the
19 drill steel was withdrawn, they would
20 drop a camera into the bore hole and
21 then visually observe whatever cavity
22 might be present.

23 Q. Did you ever travel
24 underground during the rescue
25 operation?

1 A. No, I did not.

2 Q. Did you know of any contact
3 with or did you make any contact with
4 the University of Utah seismograph
5 stations?

6 A. No, I did not.

7 Q. Were they notified of your
8 shots or ---?

9 A. I don't know.

10 Q. Do you know if any
11 consideration was given to the use of
12 the escape capsule as an option for
13 the rescue?

14 A. My only involvement with the
15 escape capsule was to pick it up
16 at --- it was delivered --- I can't
17 remember the small town outside of
18 the mine. But we escorted it ---
19 essentially escorted it to the supply
20 trailer and stored it in the supply
21 trailer for a period of time.

22 Q. When did it arrive at the
23 mine?

24 A. August the 11th.

25 Q. But you were not a party to

1 any conversations of debating whether
2 it should be used or not?

3 A. Oh, absolutely not, no.

4 MR. MORLEY:

5 I'd like to take
6 another short break.

7 SHORT BREAK TAKEN

8 BY MR. MORLEY:

9 Q. I have some follow-up
10 questions. With the seismic
11 monitoring, were you able to hear
12 mining activity of people working
13 underground? Could you distinguish
14 that?

15 A. Yeah. There would be no way
16 of --- necessary that I know of to
17 distinguish between the underground
18 activity and the surface activity.

19 Q. So as far as you knew, you
20 didn't --- never detected the mining
21 or working underground?

22 A. No. I wouldn't know how to
23 necessarily even interpret those
24 signals, a mining signal versus, you
25 know, other surface signals.

1 Q. Would it be possible to detect
2 the hammering and the setting of rock
3 props, when they pound on the rock
4 props to set them?

5 A. I don't know.

6 Q. Okay. Did you ever detect any
7 seismic bounce activity that you know
8 of? Would your system detect that
9 kind of seismic bounce?

10 A. I don't know.

11 Q. Okay. I know you're not the
12 expert on the system.

13 A. No, I'm not.

14 Q. Why was it decided that --- I
15 think you went over this a little
16 bit, but why was it decided that hole
17 three was the best --- was a better
18 option for the robot?

19 A. Well, at that time hole number
20 one was only a two-inch hole, so it
21 wouldn't fit down the two-inch hole.
22 Hole number two was cased, and the
23 casing was too small a diameter once
24 it was cased. The robot needed about
25 eight inches, and a cased hole was

1 smaller than eight inches in
2 diameter. So that eliminated hole
3 number two. Number three and number
4 four were options. Five, six and
5 seven, as I recall, didn't open into
6 any void in the mine, so three and
7 four were the only two viable holes.
8 And four was a little more debris on
9 the bottom, and the wire mesh in the
10 roof was a little more difficult to
11 get through. So three was the best
12 option.

13 Q. Okay. I see you have a copy
14 of the --- of where the geophones
15 were laid out. Can we get a copy of
16 that map?

17 A. Yes.

18 Q. The locations, were they
19 surveyed in or how were they
20 determined?

21 A. They were surveyed in.

22 Q. Do you know who did that?

23 A. Cody. All I remember is his
24 first name.

25 Q. Probably Cody Ware.

1 A. Shaved head. Had a cap with a
2 spider web drawn on it, hard hat.

3 Q. Who manned the microphone
4 during the listening times, do you
5 know? Was it the same person?

6 A. I don't know who the vendors
7 were. I don't know who was manning
8 the microphone.

9 Q. It wasn't MSHA personnel that
10 you know of?

11 A. No. I don't know.

12 Q. I see you're also referring to
13 your notes. Can we get a copy of
14 those?

15 A. Yes.

16 Q. Do you have any other notes
17 from, I guess, whoever?

18 A. The only other notes I have
19 would be adaptations on a box of ---
20 the strip chart recordings, just ---.

21 Q. Okay.

22 MR. MORLEY:

23 On behalf of MSHA, I
24 want to thank you for
25 appearing and answering

1 questions today. Your
2 cooperation is very important
3 to the investigation as we
4 work to determine the cause of
5 the accident.

6 We ask that you not
7 discuss your testimony with
8 any person who may have
9 already been interviewed or
10 who may be interviewed in the
11 future. This will ensure that
12 we obtain everyone's
13 independent recollection of
14 events surrounding the
15 accident.

16 After questioning other
17 witnesses, we may call you if
18 we have any follow-up
19 questions we feel that we need
20 to ask you. If at any time
21 you have additional
22 information regarding the
23 accident that you would like
24 to provide to us, please
25 contact Richard Gates.

1 The Mine Act provides
2 certain protections. If you
3 wish, you may now go back over
4 any answer that you've given
5 during this interview, and you
6 may also make any statement
7 you'd like to make at this
8 time.

9 A. I have nothing further to add.

10 MR. MORLEY:

11 Again, I want to thank
12 you for your cooperation.

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STATEMENT CONCLUDED AT 10:21 A.M.

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