

IN RE: CRANDALL CANYON
MINE INVESTIGATION INTERVIEWS

INTERVIEW
OF
JEFFREY KRAVITZ

INTERVIEWERS:
JOE PAVLOVICH, ERNEST TEASTER

DATE:
JANUARY 9, 2007

1 BY MR. PAVLOVICH:

2 Q. Jeff, just a little background on this. You know that MSHA's procedures
3 usually mandate that after an accident of the magnitude that happened at Crandall
4 Canyon that there's an internal review done.

5 A. Uh-huh (yes).

6 Q. In this particular instance, Kevin Stricklin and Richard Stickler were both on
7 site and very active in the rescue operation.

8 A. Uh-huh (yes).

9 Q. The Secretary thought it best not to put subordinates as either one of them as
10 the head of the review team, so they contacted Ernie and I and asked us if we would
11 do what's called an independent review. And you know, we've known you for a long
12 time. You know our backgrounds and that we're both retired, and we both agreed to
13 do that. And we asked the people here in this room if they would assist us in doing
14 this for their expertise and knowledge and ---

15 A. Sure.

16 Q. --- to help us with what we're doing, because two of us certainly couldn't do it
17 ourselves. So that's kind of how we got involved in this. Okay? Let me just read this
18 little statement first. Jeff, we're going to tape this interview, if it's okay we with.

19 A. Sure.

20 Q. We taped all the other ones so far for our reference.

21 A. Sure.

22 Q. If you don't mind --- okay. The Secretary of Labor has assigned this group the
23 task of evaluating MSHA's performance during the period preceding the August 6th,
24 2007 coal bounce at Crandall Canyon and the subsequent rescue effort. We will also
25 be evaluating issues that were raised during this time period regarding Bob Murray

1 and his interaction with MSHA. This is not an investigation or review of any individual
2 person. It's an administrative review of MSHA's actions as an agency. The evaluation
3 will be presented to the Secretary in the near future, and it's intended that the results
4 of the evaluation will be made public. This interview is being conducted to gather
5 information for this assignment. We also intend to interview a number of other MSHA
6 employees. So that we may obtain unbiased information from all persons to be
7 interviewed, we ask that you not discuss this interview with anyone until all their
8 interviews are completed.

9 A. Okay.

10 Q. Okay. And you are a management person ---

11 A. Right.

12 Q. --- in MSHA, so you're not a bargaining union, so you're not entitled to union
13 representation, true?

14 A. Right.

15 Q. Jeff, could you state your full name for us, please?

16 A. Jeffrey Kravitz, K-R-A-V-I-T-Z.

17 Q. And what is your present job title, Jeff?

18 A. Chief Scientific Development, MSHA Technical Support.

19 Q. And what are your responsibilities in that regard?

20 A. Presently they're to interact with other entities within MSHA, outside MSHA, to
21 bring new technology into MSHA for mine emergency operations.

22 Q. How long have you been in that position, Jeff?

23 A. Since about June of last year.

24 Q. So that is a relatively new position that was created; is that correct?

25 A. Right.

1 Q. There was no position before that?

2 A. Exactly.

3 Q. Okay. Congratulations.

4 A. Thank you.

5 Q. Prior to that, what were your duties, Jeff? What was your position and your
6 duties?

7 A. Prior to that, I was the Chief of Mine Emergency Operations, basically in
8 charge of all the mine emergency equipment, the MSHA Mine Emergency Unit and
9 other types of equipment that we had specifically for mine emergency, to employ
10 them, to maintain the equipment and to use it whenever we needed it.

11 Q. And how long approximately were you in that position?

12 A. Since about --- I'd say about 1980, something like that.

13 Q. 1980?

14 A. Right.

15 Q. When did you come into the agency?

16 A. '73, in the Bureau of Mines.

17 Q. In the Bureau of Mines?

18 A. Right.

19 Q. So from '73 to '80 what role did you serve with MSHA?

20 A. Electrical engineer.

21 Q. Electrical engineer?

22 A. Yeah. And then in the Mine Emergency Operations Group.

23 Q. Oh, in the Mine Emergency Operation, okay. How would you describe the
24 equipment that you're basically responsible for now? Would you say it was up-to-date
25 equipment? Is it current technology?

1 A. Right now, John Urosek is responsible for all the equipment.

2 Q. Okay.

3 A. He's basically assumed the duties of mine emergency. But before that, if you
4 want to ask about the assignment of equipment, things like that, it's fairly well dated
5 equipment, as far as the age of the equipment. But as far as the capabilities of the
6 equipment, as far as different pieces of equipment, we've been trying to keep up with
7 like command vehicles to try and keep those things up to date. We, last year, ordered
8 new command vehicles and a team truck, rescue team truck. TV truck we put in for
9 for years and years, and finally last year they said, go ahead and try to purchase a
10 new television probe truck, and at the last minute they pulled the requisition, the
11 purchase order, on that. So we didn't get a new one there. But that's pretty old
12 equipment. It's like 19 --- late 1970 vintage. But we've been trying to keep that up to
13 date as much as possible, along with the TV probes and things like that.

14 The seismic system was developed back in the '70s. And over the years
15 we've improved that. But it's still --- you know, it's the --- one-of-a-kind equipment. It's
16 the only equipment like that in the world, actually. And even today, it's got the best
17 capability of any system specifically for that like in the world. But as far as the age of
18 the equipment, it's pretty old.

19 Q. Okay. So is your new role as the scientific development then, is this the type
20 of thing you'll be working on, is developing new, more modern equipment, ---

21 A. Right.

22 Q. --- working with contractors, consultants or ---?

23 A. Yes, NIOSH, in different roles. I was placed on two pretty high-ranking
24 committees. One is the Mine Safety & Health's Research Advisory Committee.
25 That's to advise NIOSH in what types of research. It's made up of government

1 industry labor types. And also the MINER Act Interagency Committee. And that also
2 includes other DOD types of agencies and national labs, like San BLA (phonetic).

3 Q. Who is your immediate supervisor?

4 A. Terry Hoke (phonetic).

5 Q. Okay. And do you have a staff that works for you in your department?

6 A. I have no staff.

7 Q. No staff?

8 A. No.

9 Q. Just basically you are the department?

10 A. I am scientific development.

11 Q. How were you notified of the accident at Crandall Canyon?

12 A. John Urosek called me. And I'll give you copies of this here. This is the
13 timeline. John called me about eight o'clock on August 6th, and basically I was in the
14 office. He then said that it was necessary to try to get our seismic equipment ready
15 and to notify the MSHA Mine Emergency Unit, MEU, and that he was notifying the
16 Western MEU that District Nine would be deploying people --- personnel from the
17 Western MEU.

18 Q. Did he tell you what the problem was, I mean, what the activation was about
19 or ---?

20 A. Well, in situations like this, it's very sketchy.

21 Q. Okay.

22 A. So you basically --- it was a major roof fall or a mountain bump or whatever. I
23 don't exactly know the words he actually used.

24 Q. Okay.

25 A. He said we'd be getting the system ready to deploy out to West.

1 Q. Did he tell you that there was people trapped or missing?

2 A. Yeah.

3 Q. Okay. Did John then direct you to go to the mine or Terry Hoke or ---?

4 A. John, along with Terry Hoke. You know, basically I talked with Terry. And I
5 believe I probably talked to Mark Skyles (phonetic), too, and basically said, you know,
6 we want to --- you know, they were saying, you know, get this equipment out to the
7 mine. So about --- John had talked to Mark about 11:00 o'clock about actually air
8 lifting equipment using the Air Force. We have a Memorandum of Understanding with
9 the Air Force that's been in effect for decades. And we --- I started then calling the Air
10 Force, making arrangements for the air lift.

11 Q. Okay. And were you able to get the equipment air lifted to Utah?

12 A. Yes.

13 Q. And about when did it arrive?

14 A. Let's see. We took off from Greater Pittsburgh about 2:00 on the 7th. We
15 had quite a bit of problems, number one, making arrangements with the Air Force, and
16 secondly, with the equipment that they had available here at Pittsburgh. The
17 equipment they used for loading was broken. It's called a K-loader. So that was
18 broken. So to put it all in a short story basically, we didn't get out of here until about
19 2:00 a.m. on the 7th and arrived in Grand Junction approximately 10:30 Mountain
20 Standard, in the morning.

21 Q. So you flew from Pittsburgh to Grand Junction?

22 A. Yeah, on a C-17. Uh-huh (yes).

23 Q. Okay. And you flew with your equipment?

24 A. Yeah, with the seismic equipment, generator truck. Tom Barkand from the
25 electrical group went with me and also John Gibson.

1 Q. Okay. So you took vehicles with you to transport from Grand Junction to the
2 mine?

3 A. Right.

4 Q. Okay.

5 A. Flew to and picked up a four-wheel drive in Grand Junction, a rental car.

6 Q. So you got to --- when did you get to the mine site?

7 A. Let's see. Arrived at the mine site about 10:30 Mountain Standard.

8 Q. A.M.?

9 A. Yes.

10 Q. Okay. On the 7th?

11 A. Right.

12 Q. And what did you do when you got there, Jeff? Who did you report to?

13 A. Al Davis.

14 Q. Okay. Al was on site?

15 A. Yeah.

16 Q. Was he in the command center?

17 A. Yep.

18 Q. And the Blue Goose was already there and set up?

19 A. Always there. When they was deployed out of Price, it was brought over.

20 That arrived there very early in the initial stages.

21 Q. Did Al give you any specific instructions or ---?

22 A. Yeah. He said he wanted me to get with the engineers from the mining
23 company to determine where we should start setting up the seismic system and to
24 then, you know, actually install the seismic system.

25 Q. Okay. And when you arrived there, I guess, how was the command center set

- 1 up?
- 2 A. The command vehicle was directly across from the portals.
- 3 Q. Was there a joint command, though, with the company and MSHA?
- 4 A. No, no, no. There was only MSHA.
- 5 Q. Just MSHA?
- 6 A. Yeah. The mining company had their offices right behind and upstairs in the
7 building right behind where we were set up.
- 8 Q. Okay. So when you went into the Blue Goose, there was just MSHA people
9 there?
- 10 A. Right. Uh-huh (yes).
- 11 Q. And was it understood who was in charge at that time?
- 12 A. I always report to the district manager, so ---.
- 13 Q. Okay. Or whoever the highest-ranking person would have been.
- 14 A. Highest ranking, right.
- 15 Q. So that's why you reported to Al?
- 16 A. Exactly.
- 17 Q. Was Mr. Stickler or Kevin Stricklin there yet?
- 18 A. Not yet.
- 19 Q. Not yet. Okay. So you got with the company engineers and started to
20 determine ---
- 21 A. Right.
- 22 Q. --- where you could set up and how you could set up and all that?
- 23 A. Right.
- 24 Q. Is that kind of the next step?
- 25 A. Yeah. We wanted to determine the last known area where people were

1 working. And this is a copy of a map. The other investigation team, Richard Gates'
2 team, has the original. But he made me a copy of this to bring, so ---. This is a good
3 copy. Okay. So the guy I met with was Dave Canning. And Dave basically was
4 extremely busy, but he gave me some time. And I told him what we --- you know,
5 what the equipment could do and that in this terrain and this depth, that we were just
6 really operating at the fringes of the capability, the maximum fringes of this.

7 Q. Okay.

8 A. So he then basically ---.

9 Q. It's the same exact map but blown up as the small one you have. So if we do
10 have to reference a hole or something, we can get on that one.

11 A. Okay. So Dave was explaining the last known area of where these guys were
12 working. And we decided to install the seismic system at seven subarrays over the
13 area of the mine where these guys were last known working.

14 Q. Okay.

15 MR. PAVLOVICH:

16 And for the record there, what Jeff is referring to is a map.

17 BY MR. PAVLOVICH:

18 Q. And it says, Jeff Kravitz Exhibit Three on it, but it appears to be the work map
19 from the mine. And it shows the location in by Crosscut 133, looks like what, to 141,
20 Jeff, ---

21 A. Right.

22 Q. --- of seven locations where the seismic equipment would have been placed
23 over top of the mine sites originally on the surface; right, Jeff?

24 A. Yes, on the surface. Uh-huh (yes).

25 Q. So once you determined this would be a good location for your sensing

1 equipment, how were you able to access the mountain to get there?

2 A. Well, originally --- I had originally sent out Virgil Brown and some of the MEU
3 members from the east. So I met up with Virgil out there, too, and I got him to ride
4 with me, and we led the seismic truck and the auxiliary truck on top of the mine. Dave
5 Canning gave us some pretty sketchy directions how to get there. He was going to
6 originally come with us and then he had to turn around by someone in the company.
7 So we had to find our way up there by ourselves basically.

8 Q. Was there a road already constructed?

9 A. The original road going up to about two-thirds of the way was constructed, but
10 they were still working on the dozer road over to where the drill site was.

11 Q. Okay.

12 A. That was in, but they were still improving it.

13 Q. Okay.

14 A. So I remember when we rounded the ridge, basically we were --- the seismic
15 truck and the auxiliary truck held them back because the road was really getting bad.
16 And I knew that it needed more dozer work, so --- the four-wheel drive I had, we were
17 able to drive up to the ridge and then basically we were on top of this ridge and we
18 could see the dozer working, cutting over to where the drill sites were. So you know,
19 basically when the dozer backed up, we were able to scoot along the ridge line.

20 Q. How were you able to locate the points of setup? Did you have equipment to
21 do that ---

22 A. No, no.

23 Q. --- or did you have surveyors with you?

24 A. The company, Dave Canning, agreed to provide a surveyor to do that.

25 Q. Okay.

1 A. His surveyor --- basically we gave him points on a map, and then his surveyor
2 was going to go out there and get as close as possible to those locations and give us
3 the coordinates that we feed into our system.

4 Q. Okay.

5 A. But originally, we brought the system up on top of the mountain. And once we
6 got up on top, we did meet up with Dave Canning, another engineer and the surveyor.
7 And basically they said, you know, they couldn't really get a line of sight from where
8 these --- where we'd be putting the seismic truck to where the geo-phones were down
9 below, where the drill site was. So I noticed there was a valley down below called
10 Joe's Valley. I didn't know at the time, but they said that's Joe's Valley. And the only
11 way we could get a line of sight to all these locations was actually to bring the seismic
12 truck down to the bottom of the mountain, into Joe's Valley, and shoot the antennas
13 down into Joe's Valley, which turned out to be really good as far as signal strength.

14 Q. So once you set these individual stations up, you have to be in direct line of
15 sight ---

16 A. Pretty much so.

17 Q. --- of the seismic truck?

18 A. Right.

19 Q. And the seismic truck has what inside? What capability does it have to ---?

20 A. Each of these stations has --- each one of these stations has seven geo-
21 phones, a preamplifier, a telemetry transmitter and antenna associated with it. and
22 then they shoot down to the seismic truck. The seismic truck has a receiver,
23 amplifiers, filtering mechanisms, computer to record the information, strip chart
24 recorder and then different software to actually manipulate signals if you thought that
25 you had something that you could work with as far as getting signals from a trapped

1 miner.

2 Q. So what's the overall intended use of this equipment?

3 A. The location of a trapped miner.

4 Q. If they are making a signal of some kind or pounding ---?

5 A. That or you can still get helmet stickers. Helmet stickers say, you know, after
6 you hear three shots from the surface, pound ten times and wait, you know, 15
7 minutes, pound ten more.

8 Q. So if miners are pounding in the underground environment, this will pick them
9 up and with the location of the sensors that you have, it would actually try to pinpoint a
10 location?

11 A. Now, if --- the only thing, on the depth of the mine, you know, given, you
12 know, the extreme depths we were operating here, you'd have to be pretty much right
13 over the top of where someone was pounding in order to get a good signal. So you
14 know, the maximum capability of this system that we've ever recorded was 2,000 feet
15 in Alabama, and it was a very, very, quiet, shut-down mine. Here, as soon as we
16 have the equipment turned on, what we were getting was noise from the drilling
17 preparation, you know, and trying to set up and eventually the drilling noise itself that
18 basically wiped out any type of signals that we'd get from the mine.

19 Q. Okay. So how long was it before you were able actually to have the system
20 functional on site? Do you remember when you got it?

21 A. Yeah. The first set of seismic signals were approximately 10:30 p.m. down in
22 Joe's Valley. Now, at that point we didn't have ---.

23 Q. 10:30 p.m. what day?

24 A. The 7th.

25 Q. On the 7th?

1 A. Yeah. Uh-huh (yes). At that point, we didn't actually have all the survey
2 locations, but we did have --- once we determined that we were going to take the
3 equipment down to Joe's Valley, I went down there with John Gibson and Tom
4 Barkand, and Virgil and another MEU or one or two MEU guys helped set up this with
5 the surveyor as far as getting all these locations.

6 Q. Okay.

7 A. So you know, Virgil was setting up the arrays, and we were trying to find a
8 spot in Joe's Valley where we could shoot up the mountain. And about 10:30 p.m. we
9 got the generator hooked up and started receiving signals. And we knew that Virgil
10 did a good job because we got seven lines.

11 Q. So you got all seven signals from all seven units?

12 A. Right.

13 Q. And I guess if you're --- you said you're operating on the fringe because 2,000
14 feet was the best you said you ever were able to do and that you're somewhere
15 between 2,000 and 1,500 feet. So I'm guessing you're 1,700, 1,800 feet or some
16 range. So you pretty well got these cranked up to the max ---

17 A. Exactly.

18 Q. --- as far as ---?

19 A. Yep.

20 Q. And when was the first time you actually functionally took a reading to see
21 could someone be down there pounding?

22 A. Well, every time the drill rig broke through, we pounded on the drill steels.
23 And they had things pretty quiet on top of the mountain, and that's when we'd be
24 listening for any return signals from anybody who might be pounding not only a drill
25 steel but somewhere in the general vicinity.

1 Q. Well, you said you actually were set up to use this at 10:30 p.m. on the 7th?

2 A. Right.

3 Q. Okay, and you got a signal from all seven units?

4 A. Right.

5 Q. Did you at that time set off the three shots and quiet everything so you could
6 see if you were getting a signal?

7 A. No. Because they were still setting up where the drill --- setting up for the
8 shots, too, because Dave Canning had arranged with a blaster --- we told him we
9 wanted to get a blaster, and he was getting a blaster arranged for and also a drill rig to
10 drill the holes for each one of those blast holes.

11 Q. How big a charge do you have to set off, Jeff?

12 A. Each of the holes should be about 50 pounds of explosives. And we
13 eventually did do three explosives later on in the exercise here. We actually did some
14 that were a hundred pound double shots.

15 Q. And what type of explosives do you use? Is it amphi and boosters or is this
16 dynamite or ---?

17 A. Yeah, pretty much whatever the mine had available, and I think they used
18 amphi.

19 Q. Amphi?

20 A. Yeah. I'm not exactly sure, but you know, Dave --- I actually never went up to
21 where they actually did the drilling operations for those holes.

22 Q. Do they put the shots off somewhere near these or just anywhere on the
23 surface?

24 A. This is basically --- originally we had set up these locations where we wanted
25 --- basically setting off three shots. If you'd hear miners, then you'd set off five. So I

1 told them we wanted 50 pounds of explosives in each one of those holes, okay. And
2 for some reason the terrain didn't allow --- this is on a cliff, and so we had to back up
3 to this location, where they actually surveyed in these holes and actually drilled them,
4 and then they'd load them.

5 MR. PAVLOVICH:

6 Jeff was showing a map that showed --- predicted eight holes
7 between Crosscuts 132 and 133 that crossed all four entries.

8 BY MR. PAVLOVICH:

9 Q. That's where you said you --- the terrain didn't allow that, so you backed up to
10 Crosscut 130.

11 A. Uh-huh (yes).

12 Q. Were you able then to facilitate putting the eight charges in at that location?

13 A. Dave said he did.

14 Q. Okay. I mean, not you physically, but they did.

15 A. But I think he did more than that because he figured, you know, we'd probably
16 do this multiple times. So I think he put in more than them holes, but I don't know
17 exactly how many. You got to talk to Dave.

18 Q. Okay. But you did put them on ---?

19 A. But minimally ---.

20 Q. And then you did set off some shots?

21 A. Yeah, later on in --- several days later.

22 Q. Not initially, though?

23 A. No.

24 Q. Okay. All right. When was the first time you really used this system to listen,
25 Jeff?

1 A. It was probably when the first hole went through.

2 Q. Okay. Number one hole?

3 A. Number one hole, yeah.

4 Q. And you pounded on the drill steel when it went in? Someone did?

5 A. Someone did. Actually, at that time, Mr. Stickler and Kevin Stricklin had
6 arrived on the site. And basically what they wanted me to do is to fly up on top of the
7 mountain with some sheriff's guys to actually make sure that we didn't have a Sago
8 communication problem.

9 Q. Okay.

10 A. That's basically what they were concerned about.

11 Q. Okay.

12 A. And also to --- there was a code established, and I can give you a copy of the
13 code, that if they did see someone pounding back alive on a drill steel, that they'd
14 have this encoded message that we'd call back.

15 Q. Was communications, telephone communications, a problem up there?

16 A. It was a big problem because on the ridge, itself --- on one side you could get
17 partial cell phone communications. This was the side that was --- ran adjacent to
18 where the mine --- you could see the mine operation below. On the other side you'd
19 get zero cell phone communication.

20 Q. You know, we've heard several people say that this communication from this
21 mountaintop remote area was a problem. We've heard that in the past at several
22 areas.

23 A. Yep.

24 Q. Now, with your expertise and your new title, ---

25 A. Uh-huh (yes).

1 Q. --- over this scientific development, is there phone capabilities out there that
2 would pretty much work everywhere, we could bypass half of these problems in the
3 future?

4 A. What they had to do is bring in satellite systems. And basically we've got
5 caches around the country. We have some in Denver. We have satellite equipment
6 in Price, Green River. And basically these are like dome-mounted satellite radios.
7 And those were the best things that actually worked, you know, throughout the whole
8 operation.

9 Q. Okay.

10 A. So when their inspectors were calling back drilling readings to the command
11 center, this is what they were using.

12 Q. So you were able to bring those on site eventually, but initially you couldn't?

13 A. Actually, we brought some with us. And then, you know, within the next day or
14 so, --- by the time the second hole went through, we had that set up.

15 Q. Okay. So you do have that capability now?

16 A. Yeah. And also our program evaluation peer group, they had been tasked
17 with communication, as far as satellite communication goes. So they basically are in
18 charge of trying to develop the specifications and acquire the new satellite radios with
19 either hand-held or what we have --- a better version of what we have.

20 Q. Would a satellite cellphone not work?

21 A. Satellite cellphone may not have the power. At that point, we actually had --- I
22 had borrowed a satellite phone from Mr. Stickler. He actually had one he brought
23 from D.C. I used his to call back some of the original readings. And that was very
24 sketchy. Even that itself, on top of a mountaintop, was very difficult to actually
25 operate.

1 Q. So the trucks worked better with the satellite?

2 A. You know, the Jeeps with the portable radios and the domes were the best
3 things.

4 Q. Okay. Were they secure, Jeff?

5 A. The satellite is pretty much secured as anyone with a scanner trying to pick it
6 up. Cellphones aren't very secure, no.

7 Q. So the satellites would be more secure than cellphones but not totally secure,
8 I mean?

9 A. Yeah. Some of them, you had to be much more sophisticated. You know,
10 you'd probably see like CNN might be able to pick it up. I don't know for sure. I don't
11 know what their capabilities are, but they've become more sophisticated. But you
12 know, your average person with a scanner wouldn't pick that up.

13 Q. Jeff, how often do you field test this seismic unit?

14 A. Well, we used to have regular field tests of this equipment until funding was
15 cut back several years ago. So we did training like around late like 1999, 2000.
16 We've taken it out since then in a mine up there in Pennsylvania. So we did have
17 funding specifically set aside for field testing, but you know, that was basically taken
18 away, you know, a couple years ago.

19 Q. So when would have been the last time you did field test this unit?

20 A. I'd say maybe 2005 in the field, but I'd say as far as --- 2005, 2004. But as far
21 as testing it in the shop, where we test all the equipment, we do that on a monthly
22 basis.

23 A. Monthly.

24 Q. Is it pretty reliable?

25 A. It's been reliable. Sometimes there's failures with electronic components, and

1 we have to replace those. But as far as reliability of the system and flying it from
2 Pittsburgh all over the United States, it's been extremely reliable from that standpoint.

3 But again, it's old.

4 Q. Right. But it's the best there is?

5 A. Yeah. And basically, you know, our technical support people, like you said,
6 you know, they basically want me to try to seek out new ways to improve the system,
7 and that's what we're really trying to do.

8 Q. Jeff, did you ever go underground here at Crandall Canyon?

9 A. No.

10 Q. No? Okay. So you spent most of your time on the mountain?

11 A. About 90 percent. Sometimes back in the command center. But the distance
12 travel-wise from where the command system was set up to the top of the mountain
13 was about a two hours' drive.

14 Q. Okay. Jeff, you said you actually tested --- or utilized the equipment when the
15 first hole went through.

16 A. Uh-huh (yes).

17 Q. That was obviously hole number one that was what, a two-and-a-half-inch
18 hole?

19 A. Right.

20 Q. And so when that hole went through, you pounded on the drill steel, or
21 someone did, ---

22 A. Right.

23 Q. --- and then waited to see if there was going to be any response on the drill
24 steel?

25 A. Right.

1 Q. Did you need this seismic to pick up a response or would you have heard
2 someone pounding on the steel by standing by it?

3 A. As far as pounding on the drill steel, sometimes we were able to hear people
4 pounding on the drill steel by everybody being very quiet and you hear the response
5 back.

6 Q. Okay.

7 A. And then --- that's if they're directly under the hole.

8 Q. Right.

9 A. If they're in the vicinity of the hole, then basically the seismic system might
10 pick them up if we're able to get a good enough signal on noise.

11 Q. So if they heard someone pounding a drill steel but they were on the other
12 side of a barricade or something, they could pound on a roof bolt and you were hoping
13 to pick them up with that?

14 A. Exactly.

15 Q. Were you there when the --- on the night --- or whenever it was, when the
16 number one borehole went through?

17 UNIDENTIFIED SPEAKER:

18 It was the 9th.

19 MR. PAVLOVICH:

20 Pardon me?

21 UNIDENTIFIED SPEAKER:

22 It was the 9th.

23 MR. PAVLOVICH:

24 The 9th. I'm not sure what time. I said night, but I don't know
25 if it was at night. I just said that. I'm thinking it was night.

1 A. Yeah. It's about almost midnight on the 9th, I think it was.

2 BY MR. PAVLOVICH:

3 Q. Okay.

4 UNIDENTIFIED SPEAKER:

5 Ninth (9th) into 10th.

6 BY MR. PAVLOVICH:

7 Q. Were you there, Jeff, on site?

8 A. Yeah. Well, I was above the site. I had just been flown up with the Sheriff's
9 guys.

10 Q. Okay.

11 A. And one thing that Mr. Sticker wanted me to do was to confiscate cellphones,
12 you know, from the drilling people. And the people on the other side of the ridge
13 basically we didn't bother because there's no ---.

14 Q. Okay.

15 A. But the people up on top we did start confiscating cellphones. And the
16 Sheriff's police actually collected them and put them in a bag.

17 Q. Were you there when samples were drawn out of that number one hole?

18 A. I was there when a sample came up as far as the reading from the sample.

19 Q. Okay.

20 A. But as far as actually seeing the sample taken and all that, no, because that
21 was below where I was up on top. Because even on that ridge side with that satellite
22 phone, I wouldn't be able to get good communication, so I had to go up to the top of
23 the ridge to do that.

24 Q. So what was the first information you were given about the air quality at the
25 bottom of the number one hole or in the number one hole?

1 A. Kim Diederich came up with another fellow from ventilation. I forget who
2 exactly he had with him. I think it may have been Jeff Waggett, that basically it was
3 sometime after midnight, and just on a small piece of paper he had written out the
4 handheld readings that he actually had taken down there.

5 Q. Okay. And what were those?

6 A. It actually was 20.50 CH₄ and 12 ppm CO.

7 Q. And so did you do anything with those readings? Did you call anyone?

8 A. Yeah. I called them over to --- Kevin Stricklin asked me to call him as soon
9 as I got the readings. I finally was able to get some communication on his cellphone,
10 and I called that over to him.

11 Q. So at that time you were confident that the air quality in the mine at borehole
12 one was primarily fresh air?

13 A. No, just the reading. I just communicated the reading I was given.

14 Q. Okay.

15 A. I didn't know exactly how they took it or what they did with it.

16 Q. What did you think?

17 A. I thought it was kind of remarkable that it was fresh air.

18 Q. In what regard?

19 A. Well, if you had, you know, a problem in the mine, you'd basically --- actually,
20 it wasn't quite fresh air because you had some ---

21 Q. Some CO.

22 A. --- CO in there, but you know, basically if you had a problem in the mine, you
23 know, you kind of figured that the readings would be a lot lower, so --- as far as
24 oxygen content goes itself. It all depends on if the drill hole actually got into some
25 kind of an air pocket. You know, you don't actually know what you got until you start

1 looking at the trends. And basically you have to look at the trends for all the readings.

2 Q. So did you quantify that with Kevin and say, you know, this is the first reading,
3 but I'm rather suspect here?

4 A. Well, I told him when I first talked to him that --- I said, you know, this is the
5 reading we got, but I don't know anything about how they took it or what. We want to
6 get a trend set up.

7 Q. Okay. All right.

8 A. But you know, he said, thanks, and then he hung up. And then --- that's the
9 last of that, except for later on, you know, I found out that the guys thought that they
10 wanted to make sure that the dip wasn't plugged up, so they were going to flush it with
11 water and air.

12 Q. So did Diederich and Waggett also kind of express to you that this doesn't
13 look right to us, or did they not say anything?

14 A. Well, they came up and said, you know --- when they came up later on, you
15 know, they didn't bring up the sample. I think one of the drillers brought up the ---.

16 Q. Okay.

17 A. Eventually they came up and said, you know, we want to flush this because
18 we're not quite sure about, you know, whether or not this is a good reading or not.

19 Q. Okay.

20 A. Okay?

21 Q. And so subsequently ---

22 A. They flushed it.

23 Q. --- they flushed it and then they brought you another reading?

24 A. Another sample.

25 MR. TEASTER:

1 And what was it?

2 A. Let's see. At 1:15 --- this is the numbers that they gave me. They gave me --
3 - it was 20.60 CH₄, 4 ppm CO. At 1:25, essentially the same thing. At 1:45, it
4 dropped down to 7.2 oxygen and 236 parts ppm on the CO. Then they took a couple
5 more readings all the way to 2:10 a.m., where it was 7.9 oxygen and 229 ppm CO.

6 Q. So were you convinced at that time that those readings were somewhat
7 accurate?

8 A. Well, we were still stymied by the CO. You know, it still was a pretty high CO
9 level. And ---.

10 Q. Should not be a fire or ---.

11 A. And Kim was saying, well, how could that be. He thought, you know, there
12 may have been a diesel that was left running and we was looking at some of the
13 exhaust from the diesel.

14 Q. Okay.

15 A. He was speculating. But you know, when we looked at all that high CO, we
16 said, well, where is it coming from.

17 Q. Okay.

18 A. But anyway, as soon as we did confirm that we're getting a lower oxygen
19 content, I actually phoned those down to the command center and they were
20 supposed to log that in. I told them I wanted them to communicate that to Kevin
21 because I tried to find Kevin on his cellphone, but all I got was his voicemail. And I
22 gave him a voicemail saying, you know, the readings have changed, we've got this
23 reading.

24 Q. What time was that, Jeff?

25 A. This is the last reading. The handhelds was about 2:10, so ---.

1 Q. So sometime after you got those three readings ---

2 A. Yeah.

3 Q. --- that you called Kevin? You didn't call him when you got the first ---?

4 A. Yeah, I called him with the first one.

5 Q. The first one. But you didn't get him?

6 A. No. The first ---.

7 Q. I mean, the first one that was ---?

8 A. Oh, no. After we had it confirmed ---.

9 Q. You waited until you got three to confirm ---?

10 A. Well, yeah. And I was up on top. And then Kim came back up with his Jeep
11 and then he says, these are the readings now. So then that's when I tried to call Kevin
12 on his cellphone and give him those readings. And I told the guys specifically in the
13 command center that I wanted them to give those readings to Kevin.

14 Q. Okay.

15 A. And then it turns out that Kevin didn't actually recover that message until the
16 next morning, and then we basically had a problem.

17 Q. That's when he found out when it was as problem?

18 A. Yeah. Now, we also had bottle samples that were taken. And bottle samples
19 --- he took --- basically Kim took all the bottle samples. And the bottle sample at
20 midnight basically showed 20.702, nitrogen 78 percent and CO 12 percent. A lot of
21 these samples were being flown down by the Sheriff's police, down over to the lab in
22 Price and --- either that or to the bottom of the mountain, where then they'd get a
23 Sheriff's policeman to take it back over to Price. So I didn't find out exactly what
24 these readings were until the next day as far as the chromatograph analysis. But they
25 were matching up pretty close to what we had from the other study.

1 Q. So they took those when they took handheld readings and they initially
2 showed high levels of oxygen?

3 A. Right.

4 Q. But then ---

5 A. It dropped down.

6 Q. --- when they got the one that showed the 7.2 oxygen, it reflects that on the
7 bottle; is that true?

8 A. Yeah. The bottle sample showed 8.2.

9 Q. So fairly close?

10 A. Yeah.

11 Q. I mean, it's within range.

12 A. It's still high CO. So the handhelds and then the bottle samples were agreeing
13 pretty good.

14 Q. Jeff, when you saw that level of oxygen, did you think there was a diminished
15 chance of survivability of those miners in there?

16 A. Oh, yeah. Yeah. Sure.

17 Q. Did you have any idea --- you had a map, I guess, but did you have any idea
18 where that low oxygen was coming from?

19 A. No. At this point in the game, you know, basically you just report back what
20 you get, and that was it.

21 Q. I mean, you weren't speculating ---

22 A. Oh, no.

23 Q. --- yourself, though, that I'm thinking this had to come from somewhere or ---?

24 A. We didn't know where it would come from except for, you know, the --- if the
25 seals were blown out or something like that. But only then --- I found that out later on

1 after, you know.

2 Q. Okay.

3 A. And then people were saying, you know, like a couple days later that those
4 readings were pretty close to what they were getting behind the seals.

5 Q. In the number one seal in the Main West?

6 A. Right. So then ---.

7 Q. That would have been a breach of the barrier there?

8 A. Right.

9 Q. Okay.

10 A. That was what the theory was.

11 Q. Were you there through the remainder of the drilling?

12 A. Yeah. Yeah.

13 Q. All the way through the seventh hole?

14 A. Yeah. Uh-huh (yes). No, I wasn't there --- every time each hole came
15 through, John Urosek came on site. So he'd be there, you know, at certain times, and
16 I'd --- sometimes we were both there and sometimes, you know, just ---.

17 Q. So you might not have necessarily been at the site, but you were still there in
18 Price? I mean, you ---

19 A. Oh, yeah.

20 Q. --- were still on duty there?

21 A. We eventually went home like the first week in September.

22 Q. Okay. I mean, you got some holes there that were --- had some material in
23 them. I guess you were there when the cameras went down?

24 A. Right.

25 Q. And you were able to see the camera video or live, I guess?

- 1 A. Sure.
- 2 Q. Some you saw that had voids and fresh air, ---
- 3 A. Uh-huh (yes).
- 4 Q. --- which kind of was a positive thing.
- 5 A. Right.
- 6 Q. Then you saw some with no voids or little void and bad air?
- 7 A. Right.
- 8 Q. So was this thing kind of going up and down?
- 9 A. As far as? Going up and down, what?
- 10 Q. I mean, mentally. You're a psychologist.
- 11 A. Well, you always go in ---.
- 12 Q. I mean, a roller-coaster of emotions here. I mean, you got one bad one, and
13 that had to be a down day, and then I think three went through and it's open and good
14 air, ---
- 15 A. Right. Right. Exactly.
- 16 Q. --- now that's a good day. So how was that information being conveyed? I
17 mean, were you talking with Kevin and Mr. Stickler pretty regularly in regard to ---
18 were they ever asking your opinions on any of this or your thoughts about any of this,
19 what was happening?
- 20 A. No. Basically, you know, we were supposed to --- basically what I was
21 supposed to do is to, you know, keep track of the seismic system and keep that in
22 operation and run it, you know, whenever we possibly ---.
- 23 Q. Okay.
- 24 A. Also to be up there sometimes when --- we always wanted an MSHA person
25 there when the TV cameras went through initially. So I'd be there sometimes when

1 the TV camera went through.

2 Q. Okay.

3 A. And sometimes when the drill went through, you know, we'd be able to do that.

4 But yeah, it's a roller-coaster of emotion.

5 Q. Do you ever have any involvement in where the hole should be placed?

6 A. No.

7 Q. No one ever asked your opinion ---

8 A. Nope.

9 Q. --- where you think we should drill a hole, Jeff?

10 A. No.

11 Q. Okay. Did you ever pick up any seismic activity?

12 A. We picked up a lot of seismic activity, but nothing ---.

13 Q. Anything that you thought may look positive that might be from ---?

14 A. From a trapped miner?

15 Q. Yes.

16 A. No.

17 Q. Never did?

18 A. Never.

19 Q. Was there some --- I don't know what day it would have been or what hole

20 even, but is there some seismic activity that you picked up that was kind of a

21 repetitive ---

22 A. Repetitive, yeah.

23 Q. --- tapping that ---?

24 A. When number three went through, we picked up --- actually I was up there on

25 top of the mountain with John Urosek, and Tom Barkand and John Gibson were

1 operating the system. And basically we told them to listen, you know, when we were
2 pounding on the drill steel, and then I talked to them and they said that there's --- over
3 the satellite radio, and they said that, you know, they were getting a repetitive signal,
4 you know, from one of the arrays. That was over number four. And so John said,
5 well, you better go on down and take a look at it yourself, so that's what I did. I went
6 down the mountain, it took about 45 minutes to get down there, and looked at the
7 signals we were getting. And basically, you know, they're much too high for a trapped
8 miner. This was almost peaking out, but it was very regular. It was like an oscillation.
9 And basically, you know, what I thought it was, was some type of a sympathetic
10 oscillation where people were pounding on the drill steel with the sledgehammer, and
11 the electronic circuitry basically was setting up an oscillation in sympathy with that,
12 and --- because it kept going on for quite a long time. But it was way too high of a
13 signal for a trapped miner, but you know, there was something there as far as a
14 repetitive signal. And so when I was down at the seismic truck, then the next thing I
15 know John Urosek flies down in the helicopter and he wants the printout and the map
16 and all this stuff. And I told him, John, this is the story. I really don't think it's a
17 trapped miner, but it is repetitive. And so then he got back in the helicopter and went
18 to meet with Mr. Stickler.

19 Q. Did you go to that meeting?

20 A. No. I stayed in the seismic truck and we kept listening for quite a long time.

21 Q. So what you're telling me is your guys down in the van reported to you they
22 were getting a repetitive signal. John asked you, Jeff, you ought to go look at it.

23 When you went down and looked at it, you knew right away it wasn't a miner?

24 A. No.

25 Q. You could tell that immediately?

1 A. It was way too big a signal for this depth of coverage.

2 Q. Did you then call anybody to report that?

3 A. Basically I talked with John Urosek.

4 Q. Just Urosek? But you didn't talk to the command center or Mr. Stickler, ---

5 A. No.

6 Q. --- Kevin or anybody, you just looked at it and said, I know that's not ---?

7 A. No. At that point, John was in communication with Mr. Stickler and Kevin,
8 and ---.

9 Q. He had already talked to them?

10 A. He already talked to them. And I was kind of surprised when that helicopter
11 came in and John was, you know, looking for the printout.

12 Q. So he took the printout to a meeting with Kevin and Mr. Stickler?

13 A. Right.

14 Q. And how was that printout then interpreted by them or what happened with
15 that?

16 A. Well, you know, basically there was some talking at one time --- I know Mr.
17 Stickler wanted to drill a hole then to that --- he wanted to drill the next hole down
18 where --- let's see, number five. He wanted to drill one down here. And I know there
19 was controversy because the mining company and I think, you know, John really
20 wanted to drill up around this way in case there was some type of barricade or
21 something like that, as far as with the air he was talking about. So the next thing I
22 know is that's when they decided that's where number four was going to be instead of
23 down over here.

24 Q. Okay.

25 A. I think Mr. Stickler decided that's where number four was going to be.

1 Because we did get some kind of repetitive signal, that's where number four went in.

2 Q. Well, didn't you get the repetitive signal out of ---

3 UNIDENTIFIED SPEAKER:

4 Number three.

5 BY MR. PAVLOVICH:

6 Q. --- out of three?

7 A. They got the signal when they pounded on the steel in number three, but it
8 showed up on number four.

9 Q. Okay. So this is really where number four was?

10 A. Yes, right over here.

11 Q. I think you were --- where?

12 A. Let's see. Oh, yeah. Well, we had moved the subarrays. Once we didn't get
13 signals from this area with the drilling, they moved the drilling down to number three
14 over here, then we moved the arrays closer into this area so --- in case somebody
15 would be signaling, we moved the arrays over to this area.

16 Q. Okay.

17 A. So we didn't move all of them. We moved some of them.

18 Q. So this is the correct location of three and four?

19 A. Yeah.

20 Q. Your map is a little different.

21 A. Uh-huh (yes).

22 Q. And that's not to say, you know, ---.

23 MR. TEASTER

24 You had your geo-phone over here.

25 A. That's where the geophone was. That's not where the geophone ---.

1 BY MR. PAVLOVICH:

2 Q. Oh, okay. That's number four geophone, number six and number --- okay.

3 MR. TEASER:

4 Are you saying that they were going to drill number four hole
5 here, but because they got that, they went over here and drilled this hole ---

6 A. Right.

7 MR. TEASTER:

8 --- because that's where they were getting --- taking the
9 samples

10 BY MR. PAVLOVICH:

11 Q. What was the rationale for wanting to drill that hole at that location, Jeff? Did
12 you ever hear?

13 A. Yeah. I heard Mr. Stickler say, you know, if the advancement came this way,
14 he'd like to have a hole behind them so that they could put air and supplies in case
15 they got trapped, you know, inby this.

16 Q. Okay.

17 A. So if this advancement actually came up this way, he wanted this hole back
18 here so they'd have safety valve.

19 Q. So that wasn't to try and locate anyone or anything else ---

20 A. No.

21 Q. --- it was maybe a safety hole for the rescue advancement in Number One
22 entry?

23 A. Right.

24 UNIDENTIFIED SPEAKER:

25 I didn't hear you. Did you say where that was, Joe?

1 MR. PAVLOVICH:

2 Pardon me? The hole that --- the number --- what was
3 originally proposed by Stickler ---

4 UNIDENTIFIED SPEAKER:

5 Right.

6 MR. PAVLOVICH:

7 --- as the number four hole would have been at Number One
8 entry, at 133.

9 UNIDENTIFIED SPEAKER:

10 Okay. I didn't hear him say that.

11 MR. PAVLOVICH:

12 But then four was subsequently moved to the number four
13 entry, at 142, and the number five hole was drilled there.

14 BY MR. PAVLOVICH:

15 Q. And that was --- was that then the reason for number five, Jeff, ---

16 A. Right. Right.

17 Q. --- as an emergency hole for the rescuers?

18 A. Uh-huh (yes).

19 Q. Okay.

20 A. It also determined, you know, if there was --- there was --- there really wasn't a
21 good way to determine how far the collapse had occurred, so they wanted ---.

22 Q. Sure.

23 A. This is a double-duty kind of a thing.

24 Q. Okay. Also to see if the entry had material or not?

25 A. Right.

1 Q. Once the information that John Urosek picked up from the helicopter, in the
2 helicopter, and took it down to the meeting with Mr. Stickler and Kevin, ---

3 A. Uh-huh (yes).

4 Q. --- I guess there was an impression that perhaps you'd found --- or your
5 system had found the tapping of a miner underground.

6 A. No, there was never anything that I can say ---.

7 Q. They never thought that?

8 A. No. But the only thing that --- they knew it was a repetitive signal.

9 Q. Okay.

10 A. And it could have been caused by ---.

11 Q. So John took it down there and he immediately told them this is not anything
12 to be ---?

13 A. That's what I told John. I don't know what he told them.

14 Q. Okay. Well, that's what I'm asking, I guess. Did you ever have a
15 conversation with Mr. Stickler, Kevin, about it?

16 A. No.

17 Q. You never did?

18 A. Uh-uh (no).

19 Q. No one ever asked you, Jeff, what do you think that that was?

20 A. Well, eventually --- I don't know what day afterwards, you know, we actually
21 looked at some of these readings with some of the people --- you know, like the
22 governor's office and all that. And I don't now if it was that particular day or another
23 day where we had another reading, but basically we were looking over several
24 different records. And I told them, you know, I really thought that was way too big and
25 too repetitive, because we were picking up signals at number four --- when they were

1 putting number four hole in, basically we were picking up signals similar to that, but
2 they had moved that array further away. And then it basically pretty much confirmed
3 my theory that there was this sympathetic oscillation.

4 Q. So you're not aware if they felt like --- when John took that information down,
5 that they felt like that this was something very positive, that you had found live people
6 tapping?

7 A. No.

8 Q. You're not aware or you think no?

9 A. I'm not aware of it. But I know what I told John. And basically, you know, I
10 told him that I really didn't think those signals were caused by trapped miners.

11 Q. Okay. All right.

12 MR. TEASTER:

13 John, when you say sympathetic oscillation, is that about the
14 same as an echo?

15 A. Yeah, pretty much, except for it sets up like a --- almost like a standing wave,
16 and basically as --- like drill steel --- you got 2,000 feet of drill steel going like this.
17 And then the geo-phones pick up, you know, that movement. And if it's a very strong
18 signal, because, you know, the geo-phones are pretty close to where the drilling
19 actually took place, it overpowers the amplifiers and basically it puts them into an
20 oscillation. And that's basically --- it's like an echo.

21 MR. TEASTER:

22 So you made this determination based on your own
23 knowledge and experience that that was sympathetic ---?

24 A. That's what I thought it was, yeah. But since it was repetitive, which, you
25 know, basically that's --- I think that's what they made their decision on that they

1 couldn't, you know, put it aside saying that we didn't get anything from anyplace, okay,
2 and that's the reason I think they went there.

3 BY MR. PAVLOVICH:

4 Q. But there was never anyone that called you or said, come down for a meeting,
5 Jeff, and said, clarify this for us, tell us ---?

6 A. No.

7 Q. Did you ever participate in any meetings with I'll say the decision makers for
8 MSHA, calling Mr. Stickler, Kevin, Al Davis, decision makers and company people as
9 far as decisions to do things here?

10 A. I sat in on a couple. Like where they'd have like a brown bag meeting, you
11 know, lunch and basically talk about, you know, where they're going to put different
12 strategies to work, okay. There were one or two of those. And then I was at some of
13 the family meetings where, you know, ---.

14 Q. You went to some of the family meetings?

15 A. Right.

16 Q. Were you asked to come to those or did you just go?

17 A. Yeah.

18 Q. You were asked. Then for what purpose? What was your role there?

19 A. In case someone wanted to know something about the seismic system ---

20 Q. Okay.

21 A. --- I'd actually tell them about that.

22 Q. You could describe it. Did you ever describe to the families the seismic
23 system?

24 A. Basically described it to Mr. Stickler, and he described it to the family.

25 Q. So he described it and they never demanded any more technical expertise?

1 A. No. They sort of held me as an expert in the rear. Even for the news
2 briefings, you know, I was there in case they got stuck with any kind of particular
3 question. But basically he was the figurehead and ---.

4 Q. So you were there as a backup?

5 A. Right.

6 Q. Okay. And so were you also at news briefings, too?

7 A. Yeah, same capacity.

8 Q. Do you remember what days? Was that later on in the exercise or was that
9 pretty early on when you first brought your stuff out?

10 A. Well, after we had this mixup with the air readings, you know, they wanted
11 those --- actually, Kevin wanted me --- actually, Mr. Stickler wanted me to be there,
12 too, to basically go over the numbers with them. And that's when I gave him the
13 numbers from the air readings and the chromatograph on the number one hole. That
14 was the first meeting I attended. And basically, you know, he explained to them that it
15 was an early reading and we were looking for trends and basically ---.

16 Q. So you attended the family meeting and then went with him to the press
17 briefing?

18 A. Yeah.

19 Q. Was Murray there at those meetings?

20 A. Oh, yeah. Yeah.

21 Q. Had you ever met Murray before, Jeff?

22 A. Yes, I did.

23 Q. You had? Have you had much dealing with him or just met him somewhere?

24 A. No. Professional meetings.

25 Q. Professional meetings, okay. Did you have much dealing with him here at

1 Crandall Canyon?

2 A. Not personally, no.

3 Q. Did he ever come up to the boreholes and talk to you while things were going
4 on?

5 A. No.

6 Q. Did he talk to you while you were at that meeting?

7 A. No.

8 Q. No?

9 A. No.

10 Q. Kind of how did the meeting go? Did Murray take charge and talk for a while
11 and then Mr. Stickler talked a little bit or what?

12 A. Yeah. Mr. Murray didn't have any concepts at all on the seismic equipment.
13 And basically the first meeting he heavily criticized even us bringing out the seismic
14 system. And he also criticized the United Mine Workers, about everybody that moves,
15 the press, all sorts of ---.

16 Q. And he was critical of the seismic equipment?

17 A. Yeah.

18 Q. In what regard?

19 A. He didn't have any belief that it could do anything, and he told he families
20 that, specifically.

21 Q. Were you there when he told them that?

22 A. Yeah.

23 Q. Did anyone rebut that?

24 A. Mr. Stickler did.

25 Q. What did Mr. Stickler say?

1 A. He said that we've tested the equipment and, you know, it's proven that it can
2 locate miners. And this is definitely at the fringes --- and basically what I told him, is
3 the fringes of our capability, and we bring it as a way to actually add to the hole
4 information that was being collected.

5 Q. Did Murray say anything about that or ---?

6 A. At the meeting he said ---

7 Q. Yeah.

8 A. --- it was a lot of hogwash, not exactly in those words, but a little stronger than
9 that.

10 MR. TEASTER:

11 Tried to put it diplomatically.

12 A. Yeah.

13 BY MR. PAVLOVICH:

14 Q. A little stronger than that?

15 A. Yeah.

16 Q. Did you ever have any other occasion to be around Jeff when things like that
17 happened with the families or the media?

18 A. I think I attended two or three family meetings. And you know, there was one
19 that it was very evident that there was friction between Mr. Stickler and Mr. Murray.
20 And Mr. Murray many times tried to upstage Mr. Stickler by going first with the press
21 briefings or talking to the families. And then eventually I think Mr. Stickler figured out
22 what was happening there, and he decided he's going to go first.

23 Q. Oh, really?

24 A. Yeah. That was later on in the game, though.

25 Q. Okay. And so usually when you went to these meetings, how many MSHA

1 people were there?

2 A. You'd basically have like Al Davis there. We'd have the family liaison, you
3 know, Bill Denning. I think Bill traded off with somebody else there. And sometimes
4 he'd bring in maybe one or two others.

5 Q. Was Kevin usually there?

6 A. Yeah.

7 Q. So you got Kevin, Al and Mr. Stickler, all three there?

8 A. Al didn't attend all those meetings. He tried to, but ---.

9 Q. For the most part would you say they were all there?

10 A. Yeah.

11 Q. And how many did you say you attended?

12 A. Two or three, I think.

13 Q. Oh, okay.

14 A. I was only brought in --- I didn't invite myself to them. I basically was brought
15 in when they wanted to explain something we were doing on the mountain, like when
16 we did the robot, things like that.

17 MR. TEASTER:

18 Jeff, had anybody sat down and briefed you about the
19 magnitude of the bounce underground?

20 A. Not initially. Eventually, you know, I sat in with a group of people from NIOSH
21 and MSHA. And basically, you know, they were basically going over what actually
22 occurred, and they were trying to make a determination of if it was safe to proceed
23 after the accident occurred.

24 BY MR. PAVLOVICH:

25 Q. Was this after the accident on the 16th?

1 A. Yeah.

2 Q. But that's really the first time you heard about the magnitude of the bounce?

3 A. Well, we knew pretty much where the area that actually had collapsed --- that
4 they thought had collapsed. But as far as, you know, the forced involved, things like
5 that ---.

6 Q. No.

7 A. That was another thing Mr. Murray did from number one was he --- he was
8 pretty well convinced or basically he basically told everybody there was an
9 earthquake versus being able to ---.

10 Q. What did you think about that?

11 A. I thought it was hogwash.

12 Q. Jeff, while you were on the mountain and working around this, and you were
13 there probably as much as anybody, did anyone from MSHA or anybody else express
14 concern about their safety of working up there in that area?

15 A. As far as safety --- as far --- on the surface or underground?

16 Q. No, on the surface.

17 A. On the surface?

18 Q. Yeah. I mean roads, the hazards that were encountered up on that mountain.
19 Was there ---?

20 A. Yeah. Well, I expressed it several times, you know, to people back in the
21 command center.

22 Q. You expressed it ---

23 A. Yeah.

24 Q. --- to people in the command center ---

25 A. Yeah.

1 Q. --- pertaining to what?

2 A. The condition of the road, you know, basically that one road that came over
3 the ridge was just basically on a cliff. You know, it was a very hazardous road,
4 especially when it rained up there, when -- it got real slippery from the rains.

5 Q. Okay. So when you say you expressed to people in the command center, can
6 you remember specifically who?

7 A. Well, Kevin and Mr. Stickler flew up with a helicopter up on top. And then I
8 picked them up from the helicopter and took them along the ridge, down to where the
9 drill site was. And I specifically gave them an earful, you know, for going down
10 through there, you know, saying this is some of the worst conditions I've ever worked
11 under.

12 Q. Did they do anything about it?

13 A. I don't know back at the command center. There's not much you can really do
14 if you're going to, you know, basically keep track of where things are. He had
15 inspectors up there looking for safety. So I think he --- they pretty much did as much
16 as they could as far as ---.

17 Q. Did they assign someone to come and rework the road and do anything ---?

18 A. All after that, there was dozers that appeared to help improve the roads. They
19 actually did improve that ridge road quite a bit.

20 Q. So there was an effort made to address your concerns?

21 A. Yeah, I think so.

22 Q. And you think it was done specifically because of your ---?

23 A. I don't have any idea, but I know it ---.

24 Q. Did they ever come back to you and say, Jeff, we've got people or instructed
25 them to work on that road. How is it now?

1 A. No.

2 Q. Nobody ever asked you again?

3 A. No. They were pretty much in a hurry because they had to go back down to a
4 family meeting. So it was a very hurried type of trip. When I took them all the way
5 down to --- I think that was number three hole. It was down below where number two
6 had come through. So it was another, you know, cut-through back there. So at that
7 point, that road itself was very hard to travel because it had just been fresh cut from
8 the dozer and it was down a very steep grade.

9 Q. And so you say they told you to hurry up because we got a family meeting?

10 A. They took pictures, things like that.

11 Q. How about the other people that were working up there, did they come and
12 express concerns to you?

13 A. Basically they had observations. But as far as --- you know, people that we
14 worked with pretty much, you know, know that they've got to be careful. You know,
15 there's times when we really couldn't get off the top of the mountain, like after a big
16 rain. I slept in the car about two or three nights up there because it was either real late
17 at night or because of the condition itself. After one rain itself, it got so slippery that,
18 you know, we parked the vehicle up on top and it was actually moving by itself
19 because it was like on ice, but it was mud, you know.

20 Q. Did they almost lose one of the trailers over the side of a hill?

21 A. Well, Virgil and the guy who had been --- we, I guess, contracted the fellow to
22 bring an office trailer up, and it was a bad-conditioned day. I heard that Virgil had
23 been traveling with them and that that office trailer actually fell off the truck and it
24 almost ended up down the hill, and he had to bring it back up again. And this was a
25 real --- after a big rain and all this, but they got it back up there. I wasn't there when it

1 happened, though.

2 MR. TEASTER:

3 Did they have a dozer to get ---?

4 A. I think so. It was pretty bad, from what I heard. But as far as almost losing
5 the office trailer down the side of the mountain, all I heard was, yeah, they were able
6 to get it and they eventually installed it up there. It didn't look like it was beat up or
7 anything, so ---. Sometimes people exaggerate.

8 BY ATTORNEY PAVLOVICH:

9 Q. Did they ever ask you to speak to the families or the media, Jeff?

10 A. No.

11 Q. You were present at the meeting, but you never ---

12 A. No.

13 Q. --- had any dealings other than being at the meeting?

14 A. Right.

15 Q. Was there some discussion regarding the escape --- borehole for escape
16 capsule?

17 A. Family members wanted a big borehole to be put in so they could put the
18 rescue capsule down in there. There was a rescue capsule in Price, and we actually
19 brought our rescue capsule out from Beckley.

20 Q. So you had it on site, but the issue was to drill a hole that size at that depth, in
21 that kind of strata, was just not feasible at that time, unless you found some signs of
22 life?

23 A. Even then, with the mountain continuing to move from --- you know, we call
24 them additional bumps ---

25 Q. Sure.

1 A. --- or aftershocks, it would be extremely hazardous to put anybody down ---
2 any type of rescue down there?

3 Q. Did you actually feel those on the surface?

4 A. I didn't --- I actually could see them on --- well, we think we saw them on the
5 seismographs, but John Gibson actually felt one. He was sitting there when we were
6 doing a seismic test, and he was sitting on one of the equipment from the rig, and he
7 said the whole thing moved, and you could actually feel the earth move.

8 Q. Do you know, Jeff, they brought some cameras out and lowered down the
9 hole, and I guess one of them is permanently residing in that hole. Is that true?

10 A. No.

11 Q. Did they get them all out?

12 A. Oh, yeah, the cameras all came out, except for the robot. The robot ---.

13 Q. Oh, the robot.

14 A. The robot got ---.

15 Q. He is permanently residing in the hole?

16 A. He's residing in the hole or in the mine or whatever.

17 Q. Who brought the cameras out?

18 A. The mining company contracted with the company from Tennessee,
19 Substrata.

20 Q. The guy from Knoxville?

21 A. Right. And then they also ---.

22 Q. Do you remember his name, by any chance?

23 A. Al Smith or something like that.

24 Q. Was he out there?

25 A. Yeah.

- 1 Q. He brought his equipment out?
- 2 A. He stayed out there for the month basically.
- 3 Q. A month?
- 4 A. Yeah.
- 5 Q. And did you get much chance to talk to him?
- 6 A. Yeah, quite a bit.
- 7 Q. What was his opinion of what was going on there?
- 8 A. He was just there to do service. He'd stay there as long as they contracted
- 9 with him.
- 10 Q. Okay.
- 11 A. Any time that the mine wanted him to put the camera down, he did.
- 12 Q. There was any controversy or anything with any of that as far as those
- 13 cameras or with ---?
- 14 A. As far as his camera went, I don't think so.
- 15 Q. Or just personality-wise?
- 16 A. Well, yeah, he had sort of a rough --- he and Dave Canning didn't see eye to
- 17 eye a couple times, but ---.
- 18 Q. Dave who?
- 19 A. Dave Canning.
- 20 Q. Oh, he was the engineer you were talking about?
- 21 A. Yeah. Yeah. He and Dave sometimes got into it a little bit as far as Dave
- 22 thought his camera could do more. You know, it didn't see things ---. But we've used
- 23 this camera many times at mine emergencies. It's about the best there is right now.
- 24 Q. Okay. So you knew this guy and you knew his camera capabilities?
- 25 A. Yeah.

1 Q. And they are some of the best?

2 A. Right. Now, there's another guy there and I could look up his name for you,
3 but he had a little pickup truck with a winch on it, and then he had another camera
4 system there, too. His name was Raymond --- I don't know what his last name was off
5 hand. But he was a geophysicist, and basically he had another little camera, and he
6 put down --- sometimes they'd put it down the same hole. Sometimes, you know, they
7 used one versus another for different reasons, things like that.

8 Q. Did any of them show much of anything at all?

9 A. No. The most we saw was some belt structure in number two. That was
10 probably the best. And then back in number three we could see some of the posts
11 over there, you know, from the retreat mining.

12 Q. Was there one that showed a bag or something hanging, a tool bag hanging
13 on a post or something?

14 A. Yeah, that's number two hole.

15 Q. That was number two, okay.

16 A. We looked at that several times. It was like a tool bag or a rock dust bag or
17 something that was hanging there.

18 Q. Was there much rubble in that hole?

19 A. That's what had --- number two had the least amount of rubble. And you can
20 see pretty much down the length of the belt you could see where there was some roof
21 fall activity.

22 Q. Some rib ---?

23 A. Roof or rib.

24 Q. Okay. There was some rubble out in the entry?

25 A. Rubble, yeah.

1 Q. But the other holes showed quite a bit more?

2 A. The other ones --- I was there when some of the holes went through where the
3 driller could actually tell how much of a void was there. And some of them didn't ---
4 one hole, I think it was number seven, didn't have any void at all. I think it was
5 number six had like a one-foot or two-foot void. That was all phoned down to the
6 command center, and that should be in part of the log.

7 Q. Was there requirements for reporting the depth of the holes like on a periodic
8 basis?

9 A. Yeah.

10 Q. And how often was that, Jeff?

11 A. It was set up with the inspectors in the command center.

12 Q. So you weren't involved in that at all?

13 A. No. But sometimes when I was going up the mountain, they said, make sure
14 --- they were having trouble reaching the inspector because he'd be --- have to go
15 down --- all the way down and come back up, you know, with his Jeep in order to get a
16 good line of site with the satellite radio. But they did it very regularly. I think they did
17 a good job.

18 Q. What was your understanding of the reason for reporting that footage every
19 hour?

20 A. Basically to keep track of where things are. The command center should
21 know exactly what's happening, and that should be reported back to the command
22 center.

23 Q. Okay. How were they measuring that, just by the drill steel?

24 A. The drill steels. And then when we get down to the --- almost breakthrough,
25 they'd actually, you know, bring a measure there, and the driller would put marks on

1 the drill itself.

2 Q. When the first hole went through, do you know, did they pull people out of the
3 mine that were working?

4 A. As far as I know, they didn't.

5 Q. They didn't, okay.

6 A. I don't know for sure.

7 Q. You said you were there when the --- the time you got briefed about the bump,
8 you were there with the roof control specialist, experts, that were brought in after the
9 second bump?

10 A. Uh-huh (yes).

11 Q. And what was your role in that, Jeff?

12 A. Basically explained what we had from the seismic. And so I brought in ---
13 whatever records we had at the time, I went over it with him.

14 Q. Okay.

15 A. And where I thought that there was activity that showed on all the arrays, we
16 pretty much theorized that, you know, this was a large activity, either from drilling or
17 from additional, you know, ground activity.

18 Q. Okay.

19 MR. PAVLOVICH:

20 Ernie?

21 MR. TEASTER:

22 Just a couple.

23 BY MR. TEASTER:

24 Q. Jeff, one thing that seems to stand out that most of the senior people, such as
25 Bob Murray and Stickler and some other senior people, when they went up on the

1 mountain, they rode up in the helicopter. Does it have anything to do with the
2 condition of the road or was that a time factor?

3 A. I think it's more of a time type of thing that --- as far as the condition of the
4 road goes, they knew what the condition was from --- well, I know Mr. Stickler and
5 Kevin knew what the condition was from me. And I know that Dave Canning and the
6 other engineer didn't hold back at all as far as, you know, what they thought about, you
7 know, different conditions at different times.

8 Q. Jeff, when these cameras were going down the holes, are you aware of any
9 big void that was observed as this camera was being lowered down? I'm talking about
10 maybe a 20 to 40 feet void.

11 A. There's several times when the cameras went down there was a thing called
12 washouts, okay, where there would be water activity that would wash out, you know, a
13 big portion. The only hole that was cased was number two. So when the other ones
14 went down, there was an uncased hole. Basically as the drill went down, it actually
15 washed out a lot of loose material. So you might get a 20-foot section where, you
16 know --- on the camera it might seem like it's a big boy, where it's really not all that
17 big. It's just washed out maybe several feet. You got to put it in perspective when
18 you're looking at the camera. It's not a gigantic area that we could tell. But some of
19 those videos did show areas where there's big washouts.

20 Q. Well, that would explain it, because we had had some people that said they
21 observed large voids. And it didn't sound --- I mean, that sounds like too big a void
22 just to ---?

23 A. Yeah, because you have to do --- your drilling fluid, you know, you're drilling
24 with and how that loose material is being just sucked out as the drill is going down.

25 Q. Did you have any discussions with Joe Zelanko on the possible use of seismic

1 equipment to try to determine what activity might be going on?

2 A. Joe said, is it possible that we could use that for that purpose? And I told him,
3 well, we'd have to be --- basically move it from where we're listening for the trapped
4 miners to a different mission, then --- if you wanted to put it over the area where the
5 continuous miner was working, we'd have to move everything to get over to there.

6 Q. But you could do that to some extent. It's just that you wouldn't be able to
7 look for miners over there, ---

8 A. Yeah.

9 Q. --- but you could do some ---?

10 A. Plus all the activity underground would have to stop if you wanted to
11 determine if things were happening within the ground itself. And you know, so you
12 couldn't tell what was continuous miner activity and mining activity versus ground
13 movement activity. So it would be, you know, pretty fruitless. You know, you'd be
14 able to say after the fact something happened, but as far as, you know, an early
15 warning system, you know, you'd have to have a lot of quiet time in order to actually
16 make good determinations. And we told them, you know, if you could give us the
17 quiet time we could do that, but you couldn't do that if they didn't really want to stop
18 the mining activity.

19 Q. When number one and number two boreholes went through and got a good
20 analysis, oxygen content was somewhere around seven to eight percent. Then when
21 they drilled number three borehole they got like 15-and-a-half to 16-and-a-half percent
22 oxygen. And I think that, coupled with the fact that they got this pounding that you
23 determined later to be some sympathetic oscillation, this gave a lot of hope to some of
24 the rescue people. Were you aware of that?

25 A. Well, after coming down off the mountain like at three o'clock in the morning

1 and they had this big TV set up at the Holiday Inn and you could see that Murray was
2 up there talking about fresh air. Like after number one hole he says, we got fresh air
3 here. And all I could do was just shake my head. You know, I had already phoned in
4 just to Kevin that --- you know, that we had about seven percent here, and Murray was
5 on TV saying, no, we had fresh air and everything. He was raising all these hopes,
6 you know. And I was totally beat by that time. I had been up for about three or four
7 days.

8 Q. But when you had phoned down earlier on the 20-percent oxygen, you had
9 called Kevin, you don't know what happened with that information?

10 A. He was at a family meeting with Mr. Stickler. And that reading must have
11 been the one that he passed on to Mr. Murray. But I don't know if it was from me or
12 from, you know, the mining people themselves because at the same time we were
13 getting information, the mining people were getting the same information. So you
14 know, I don't know if Kevin gave it to Mr. Murray or Murray got it from his own people,
15 but the only thing I know is when I went to the Holiday Inn, I saw him on TV saying,
16 you know, hopes are high.

17 MR. PAVLOVICH:

18 Well, I thought the mine people, though --- didn't you gather
19 up their cell phones or something that people couldn't call?

20 A. That was from the drillers. Now, Dave Canning was the guy that
21 communicated with Mr. Murray, and he was the guy that --- we couldn't actually stop
22 him.

23 MR. PAVLOVICH:

24 Couldn't take his? You couldn't take his phone?

25 A. No, no, no.

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MR. PAVLOVICH:

So in essence, what they sent you up there to prevent against kind of somewhat happened?

A. Unauthorized cellphone ---.

MR. PAVLOVICH:

Or some misinformation released?

A. Right. Like if someone was pounding back after they were pounding on the drill steel. You know, they didn't want somebody to get a cellphone back saying, we hear somebody, before the families actually --- to avoid another Sago type of situation.

MR. PAVLOVICH:

Right.

MR. TEASTER:

That's all I got.

MR. PAVLOVICH:

Ex. (b)(6) and Ex. (b)(7)(C) you guys have ---?

UNIDENTIFIED SPEAKER:

Not really.

MR. PAVLOVICH:

Does that mean yes or no?

UNIDENTIFIED SPEAKER:

Not at this time.

MR. PAVLOVICH:

Ex. (b)(6) and Ex. (b)(7)(C)

UNIDENTIFIED SPEAKER:

1 A. Right. Now, Dave Canning --- since we had these holes loaded pretty --- there
2 was drills loaded early in the operation, he expressed to his people a lot of frustration
3 that, you know, why not take time out and set off the charges and do that and I agreed
4 with him. I said, Dave, you know, it's the command center's decision. They know
5 what we've got, and it's up to them. And you know, the command center, the
6 company, MSHA and ---.

7 UNIDENTIFIED SPEAKER:

8 Did you ever discuss this with Mr. Stickler or Kevin, anything,
9 I mean, what you would have preferred to have done?

10 A. Well, they discussed that several times with John Urosek, and he was talking
11 to --- once he got on site, he became, you know, the person that was in charge of that,
12 the communications with Mr. Stickler and Kevin.

13 MR. PAVLOVICH:

14 Of course, John never got there until when?

15 A. Let's see. He got there ---.

16 MR. PAVLOVICH:

17 It was the 14th or something maybe?

18 A. The thirteenth (13th).

19 MR. PAVLOVICH:

20 The 13th?

21 A. Yeah.

22 UNIDENTIFIED SPEAKER:

23 Going back to the limitations again, does the depth depend on
24 strata at all?

25 A. Yeah. It depends on --- I mean, as far as the ability to detect, it is not only the

1 depth but also the strata you're working with from other noise sources in the area, a lot
2 of different variables.

3 UNIDENTIFIED SPEAKER:

4 I guess my question being that they had so much sandstone out there. Does
5 that improve the capability in theory at least or ---?

6 A. A little bit. A little bit.

7 UNIDENTIFIED SPEAKER:

8 But not anything significant?

9 A. Not appreciably, no.

10 UNIDENTIFIED SPEAKER:

11 And then one last one. I mean, this is a depth to detect
12 something, but is there a lesser depth yet to actually triangulate the location if you
13 were to hear something?

14 A. Yeah. You detect at 2,000. But as far as triangulation, you could do that to
15 1,500 feet. You know, through our testing we found that out.

16 UNIDENTIFIED SPEAKER:

17 I have just a couple maybe clarifications. You said that they
18 had to call --- I don't know if you said they had to call down to say we're so far down on
19 our hose. Do you know if there was any time that Dave Canning would leave and
20 drive along the road to find the signal where they could call it down or ---?

21 A. Many times.

22 UNIDENTIFIED SPEAKER:

23 Many times?

24 A. Yeah.

25 UNIDENTIFIED SPEAKER

1 convey in all these types of things here. Until much later on in the game, where you
2 know, eventually you have to bite the bullet and say, you know, it's been three weeks
3 here and, you know, there's a very slim chance that anyone could survive unless they
4 had, you know, a lot of supplies or water supplies, something like that.

5 UNIDENTIFIED SPEAKER:

6 I don't have anything.

7 UNIDENTIFIED SPEAKER:

8 Jeff, you said on 8/7, at 10:30 p.m. you had the seven
9 stations set up, seismic stations. They all showed up at the track and you didn't set off
10 a charge until 8:18.

11 A. Right.

12 UNIDENTIFIED SPEAKER:

13 When did you have the charge ready to set off?

14 A. The mine company had set it up about two days later, I think.

15 UNIDENTIFIED SPEAKER:

16 On 8/9?

17 A. Something like that.

18 UNIDENTIFIED SPEAKER:

19 So somebody would come to drill ---?

20 A. Right.

21 UNIDENTIFIED SPEAKER:

22 How deep a hole did they drill?

23 A. About 40 feet. And then you have to put the explosive in, stem it and then
24 you have to get a blaster to do all that work.

25 UNIDENTIFIED SPEAKER:

1 using it really as a last resort. It's up to the command center how they want to use it.

2 UNIDENTIFIED SPEAKER:

3 How long does it take to set up the satellite phone?

4 A. Satellite phone did you say?

5 UNIDENTIFIED SPEAKER:

6 Satellite telephone?

7 A. Satellite telephone? Well, you just open it up and set up the generator and
8 there you go.

9 UNIDENTIFIED SPEAKER:

10 How many of them do you have?

11 A. We have at least seven of them. We just bought some more during the
12 operation. We bought maybe nine more of them, you know, the portables.

13 UNIDENTIFIED SPEAKER:

14 So I mean, the satellite phones were up there --- I understand
15 it took a couple days to get phone communication?

16 A. No. By the time number two was going down, we already had --- we had our
17 seismic equipment. We carried a portable one with us. We had --- I think we had two
18 of them available right there. We had one from Denver and then there was the one
19 we brought out with us, with the seismic system itself. So within a couple of days of
20 actually having it there we actually had the satellite system itself. Plus we had a
21 satellite telephone set up in the command room, but that was down in the valley. So
22 eventually we --- we brought it in at the same time we activated everybody and
23 NIOSH brought out the remainder of the --- it's the wide beam satellite that we
24 brought. That was set up out there, too, within two or three days.

25 UNIDENTIFIED SPEAKER:

1 four. And they got it in the mine, brought it all the way up to about 50 feet, and then
2 the hole collapsed.

3 Q. Really?

4 A. Yeah.

5 Q. So it was actually in the mine?

6 A. Yeah.

7 Q. Did it see anything in the mine?

8 A. You had a lot of mud at the bottom. The drill that we had broke through
9 actually had the wire mesh all the way down to the floor. So when the robot came
10 through, it actually went through a little hole in the mesh and then it got stuck in the
11 mud. But it was a track-driven thing. It just wouldn't move any further then from
12 there. So we kept it in the mine for overnight and the next day we brought it up out.
13 And that's when it got stuck about 50 feet there. And it took me two days to try --- I
14 went through several iterations trying to retrieve it, but eventually we had to let it go.

15 MR. TEASTER:

16 Was that a million-dollar robot?

17 A. No, \$100,000.

18 MR. PAVLOVICH:

19 Oh, that's peanuts. Okay, Jeff. Well, we appreciate that and
20 we appreciate your efforts out there and what you tried to do and setting up your
21 equipment, getting on site in a timely manner and doing, you know, the best you
22 could. Certainly, it wasn't a good situation, but ---

23 A. No.

24 MR. PAVLOVICH:

25 --- I think you did the best you could responding with what you

1 found.

2 A. Sure.

3 MR. PAVLOVICH:

4 I wish you good luck with your new endeavor here ---

5 A. Thank you.

6 MR. PAVLOVICH:

7 --- and the ability to get as good and updated equipment as
8 you possibly can. I think you'll work hard to try and do that. We appreciate you
9 coming over to talk to us. We would ask you again not to discuss the interview with
10 anyone else so that we can obtain unbiased information. And we thank you and
11 thanks for your time and your efforts.

12 A. Thank you.

13