



**SARGENT'S
COURT
REPORTING**

Quality Work. Quality People.

Transcript of the Testimony of Dave Childress

Date: September 28, 2010

Case:

Printed On: October 18, 2010

Sargent's Court Reporting Services, Inc.

Phone: 814-536-8908

Fax: 814-536-4968

Email: schedule@sargents.com

Internet: www.sargents.com

STATEMENT UNDER OATH

OF

DAVE CHILDRESS

taken pursuant to Notice by Alison Salyards, a Court Reporter and Notary Public in and for the State of West Virginia, at The National Mine Health & Safety Academy, 1301 Airport Road, Room C-137, Beaver, West Virginia, on Tuesday, September 28, 2010, beginning at 8:35 a.m.

Any reproduction of this transcript is prohibited without authorization by the certifying agency.

1 A P P E A R A N C E S

2

3 DEREK J. BAXTER, ESQUIRE

4 U.S. Department of Labor

5 Office of the Regional Solicitor

6 1100 Wilson Boulevard

7 22nd Floor West

8 Arlington, VA 22209-2247

9

10 JOHN O'BRIEN

11 Safety Instructor

12 West Virginia Office of Miners' Health,

13 Safety and Training

14 Welch Regional Office

15 891 Stewart Street

16 Welch, WV 24801-2311

17

18 JOHN SCOTT

19 West Virginia Office of Miners' Health,

20 Safety and Training

21 Westover Regional Office

22 14 Commerce Drive

23 Suite 1

24 Westover, WV 26501

25

A P P E A R A N C E S (cont.)

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

JASEY MAGGARD

Miner Safety Health Administration

3837 South U.S. Highway 25E

Barbourville, KY 40906

BETH SPENCE

West Virginia Independent Investigation

(b) (7)(C)

(b) (7)(C)

I N D E X

1		
2		
3	OPENING STATEMENT	
4	By Attorney Baxter	6 - 10
5	WITNESS: DAVE CHILDRESS	
6	EXAMINATION	
7	By Mr. Maggard	10 - 48
8	EXAMINATION	
9	By Mr. Scott	48 - 52
10	EXAMINATION	
11	By Ms. Spence	52 - 54
12	RE-EXAMINATION	
13	By Mr. Maggard	54 - 62
14	RE-EXAMINATION	
15	By Mr. Scott	62 - 64
16	RE-EXAMINATION	
17	By Ms. Spence	64 - 65
18	RE-EXAMINATION	
19	By Mr. Maggard	66 - 67
20	CLOSING STATEMENT	
21	By Attorney Baxter	67 - 68
22	CERTIFICATE	69
23		
24		
25		

1	EXHIBIT PAGE		
2			PAGE
3	NUMBER	DESCRIPTION	IDENTIFIED
4	One	Large Map	21*
5	Two	Small Map	21*
6	Three	Tracking Map	37*
7	Four	CO Map	37*
8	Five	Belt Map	37*
9	Six	Tracking Map with	
10		Notations	37*

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25 * Exhibit not attached

P R O C E E D I N G S

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

ATTORNEY BAXTER:

My name is Derek Baxter. Today is
September 28th, 2010. I'm with the Office of the
Solicitor, U.S. Department of Labor. With me is Jasey
Maggard, an accident investigator with the Mine Safety
and Health Administration, MSHA, an agency of the
United States Department of Labor. Also present are
several people from the State of West Virginia. I ask
that they state their appearance for the record.

MR. SCOTT:

John Scott, with the Office of Miners'
Health, Safety and Training.

MR. O'BRIEN:

John O'Brien, with the West Virginia
Office of Miners' Health, Safety and Training.

MS. SPENCE:

Beth Spence, with the Governor's
independent investigation.

ATTORNEY BAXTER:

There are also several members of the
investigation team present in the room today. Mr.
Maggard, Mr. Scott and Ms. Spence will be conducting
the questioning today.

1 All members of the Mine Safety and Health
2 Accident Investigation Team and all members of the
3 State of West Virginia Accident Investigation Team
4 participating in the investigation of the Upper Big
5 Branch Mine explosion shall keep confidential all
6 information that is gathered from each witness who
7 voluntarily provides a statement until the witness
8 statements are officially released. MSHA and the
9 State of West Virginia shall keep this information
10 confidential so that other ongoing enforcement
11 activities are not prejudiced or jeopardized by a
12 premature release of information. This
13 confidentiality requirement shall not preclude
14 investigation team members from sharing information
15 with each other or with other law enforcement
16 officials. The team members' participation in this
17 interview constitutes their agreement to keep this
18 information confidential.

19 Government investigators and specialists
20 have been assigned to investigate the conditions,
21 events and circumstances surrounding the fatalities
22 that occurred at the Upper Big Branch Mine-South on
23 April 5th, 2010. The investigation is being conducted
24 by MSHA under Section 103(a) of the Federal Mine
25 Safety and Health Act and the West Virginia Office of

1 Miners' Health, Safety and Training. We appreciate
2 your assistance in this investigation.

3 You may have your personal attorney
4 present during the taking of this statement or another
5 personal representative, if MSHA has permitted it, and
6 may consult with your attorney or the representative
7 at any time. And for the record, do you have an
8 attorney or representative with you today?

9 MR. CHILDRESS:

10 No.

11 ATTORNEY BAXTER:

12 Okay. Your statement is completely
13 voluntary. You may refuse to answer any question and
14 you may terminate your interview at any time or
15 request a break at any time. Your identity and the
16 content of this conversation will be made public at
17 the conclusion of the interview process and may be
18 included in the public report of the accident unless
19 you request that your identity remain confidential or
20 your information would otherwise jeopardize a
21 potential criminal investigation. If you request us
22 to keep your identity confidential, we will do so to
23 the extent permitted by law. That means that if a
24 judge orders us to reveal your name or if another law
25 requires us to reveal your name or if we need to

1 reveal your name for other law enforcement purposes,
2 we may do so. Also, there may be a need to use the
3 information you provide to us or other information we
4 may ask you to provide in the future in other
5 investigations into and hearings about the explosion.

6 Do you understand?

7 MR. CHILDRESS:

8 Yes.

9 ATTORNEY BAXTER:

10 Do you have any questions?

11 MR. CHILDRESS:

12 No.

13 ATTORNEY BAXTER:

14 After the investigation is complete, MSHA
15 will issue a public report detailing the nature and
16 causes of the fatalities in the hope that greater
17 awareness about the causes of accidents can reduce
18 their occurrence in the future. Information obtained
19 through witness interviews is frequently included in
20 these reports. Since we will be interviewing other
21 individuals, we request that you not discuss your
22 testimony with any person aside from your personal
23 representative or Counsel.

24 A court reporter will record your
25 interview. Please speak loudly and clearly. If you

1 do not understand a question asked, please ask us to
2 rephrase it. Please answer each question as fully as
3 you can, including any information you've learned from
4 someone else.

5 I would like to thank you in advance for
6 your appearance here. We appreciate your assistance
7 in this investigation. Your cooperation is critical
8 in making the nation's mines safer. After we have
9 finished asking questions, you'll have an opportunity
10 to make a statement and to provide us with any other
11 information that you believe to be important. If at
12 any time after the interview you recall any additional
13 information that you believe might be useful, please
14 contact Norman Page of MSHA at the telephone number or
15 e-mail address provided to you. Will you please swear
16 the witness?

17 -----

18 DAVE CHILDRESS, HAVING FIRST BEEN DULY SWORN,
19 TESTIFIED AS FOLLOWS:

20 -----

21 EXAMINATION

22 BY MR. MAGGARD:

23 Q. David, thank you for coming today. Could you tell
24 me a little bit about yourself, your mining
25 background ---?

1 COURT REPORTER:

2 Do you want his name?

3 ATTORNEY MAGGARD:

4 Yeah. That would be a good idea.

5 A. My name is David Garland Childress. I live in

6 (b) (7)(C) I've worked around the mines

7 quite a lot in my lifetime, both when I was in college

8 and then after college. I have a degree in mining

9 engineering technology from Bluefield State. I've

10 worked in de-gasification of longwall panels in my

11 prior experience in Virginia, as well as in

12 communication --- telecommunications, by the way. I

13 was construction manager for a company that erected

14 telecommunications equipment. In addition to that, I

15 worked underground prior --- for a short period of

16 time prior to coming to work for Pyott-Boone. I was

17 employed and currently employed as a sales engineer

18 with Pyott-Boone, and I've been with the company for

19 approximately almost two years.

20 BY MR. MAGGARD:

21 Q. For the record, could you spell your last name,

22 please?

23 A. C-H-I-L-D-R-E-S-S.

24 Q. Thank you.

25 ATTORNEY BAXTER:

1 And can we have your address for the
2 record, too, please?

3 A. (b) (7)(C)

4 BY MR. MAGGARD:

5 Q. So altogether, what would you say your mining
6 experience is? How many years would you say?

7 A. As far as surface and underground?

8 Q. Sure.

9 A. Probably 12 years.

10 Q. Tell us a little bit about the communication and
11 tracking system, how it works, the system that was
12 installed at UBB.

13 A. The system actually was partially installed. And
14 I think it's important to note that first and
15 foremost. We were actually in the process of
16 installing the communication and tracking systems.
17 More so --- usually in the process we begin with the
18 installation --- substantial installation of a
19 communication system. Then we back up and we start to
20 additionally install the tracking components on the
21 communication system.

22 The communication system in the UBB Mine is a
23 leaky feeder communication system. In other words, it
24 is a voice system that uses a coaxial cable as a
25 distributed antenna system throughout the mine. The

1 miners can communicate with a regular handset. It is
2 much like the handsets that we're all familiar with
3 that you may have seen on fire and police personnel.
4 The tracking system is a zonal-based
5 tracking system that utilizes a tag that the miner
6 wears on their person. It's an active tag that emits
7 a radio signal that is actually picked up by what we
8 call our readers. A reader is a wireless device that
9 communicate their information wirelessly to the leaky
10 feeder, and the leaky feeder actually carries it back
11 to the computer system that at UBB was already in
12 place. The computer system --- we call it the mine
13 boss computer system, it has been used for a number of
14 years to operate the belt system as well as the CO
15 system at UBB. The tracking system is a software
16 component that we install up on the existing mine boss
17 computer platform.

18 Q. Okay. When did you guys start installing the
19 system? When was the first time that --- I assume you
20 had to go to UBB when this first started; is that
21 correct or ---?

22 A. Yes. I don't have exact dates, but we were in the
23 process of installing and had been in the process of
24 installing the communication and tracking system for
25 several months.

1 Q. Okay. And who all was involved with that as far
2 as your group?

3 A. A number of people were involved in the
4 installation of components. Myself probably more so
5 than anyone. I probably had more time at this mine
6 than anyone within Pyott-Boone. Wes Leffel, another
7 sales engineer, was involved. Shane Clamay, one of
8 our lead engineers, software engineers, he was
9 involved. Tom Horn, a person in our service
10 department, I recall was at the mine. I would say,
11 but I'm not sure, that Gary Thomas and others ---
12 other people in the service department were involved
13 in this installation.

14 Q. So give me a rough estimate. How many times did
15 you have to go underground at UBB?

16 A. This UBB was probably one of our largest
17 installations to date, so therefore I may have been
18 underground myself nearly 12 times.

19 Q. And when was the last time you were underground at
20 UBB, a rough estimate?

21 A. Well, actually, the last time that we were
22 underground, I'd have to look at the date, but it was
23 11 days prior to the incident.

24 Q. And what area was that at? Where was you at?
25 we've got a large map up here, and this one actually

1 shows --- the one on the table here shows the Headgate
2 22, Tailgate 22 sections and the longwall.

3 A. I entered the mine at the bathhouse side of the
4 old UBB side of the operation. And I guess they call
5 that the South Portal. We entered the mine at the
6 South Portal, if I'm correct. And then we traveled
7 down the mains, past the Ellis Switch. Ellis Switch
8 and then we went past Break 78. And we worked inby
9 Break 78 around the Mother Drive. And I think we
10 stopped our work the last day I was in there near the
11 Mother Drive itself.

12 Q. What was the purpose of that, your last trip?

13 A. We were continuing to install and assist the mine
14 with the continued installation of mostly the readers
15 upon the existing communication system.

16 Q. As far as the communication system goes, is it VHF
17 or UHF or ---?

18 A. It's a UHF communication system.

19 Q. What kind of problems were they having at the mine
20 or what kind of problems have you had with the
21 installation of the system?

22 A. We were having reliability issues in the voice
23 quality of the communication system. And it's not
24 uncommon to do that, but it was more pronounced in a
25 system of this size. This --- again, a smaller

1 system, you may not notice the quality issues in the
2 voice. We did here. So the last several days that we
3 worked on the mine we went through a process of what
4 we call tuning. And tuning is nothing more than
5 setting the power levels of the amplifiers in the mine
6 to the most efficient setting, which would improve
7 voice quality and, therefore, data upon the line. The
8 data is the tracking information that was transmitted
9 from the reader to the computer that's located
10 outside. So in essence, we were tuning this system
11 for maximum performance.

12 Q. And what kind of coverage were you getting as far
13 as distance away from the leaky feeder cable and ---?

14 A. I would have to just try to remember, and I would
15 say at this mines we were getting probably in excess
16 of a hundred feet from the leaky feeder cable with a
17 handheld radio in the areas that I visited 11 days
18 prior to the accident.

19 Q. And as far as the tag reader system that you had
20 partially installed, how much coverage was you getting
21 from it, the distance form the tag reader to the
22 active tags?

23 A. Again, I don't have any precise measurements, I
24 didn't take or anything, but I --- in this instance,
25 from what I remember, I would imagine that we were

1 getting 400 to 500 feet. And that would probably be
2 pretty conservative in both directions.

3 Q. Okay. And as far as the system goes, did you have
4 --- were they having any problems with any tag readers
5 that they had in place? Was some of them --- was they
6 having a hard time keeping some of them working or
7 ---? Just give us some information, anything you
8 know, if they was having any kind of power issues or
9 battery backup problems or anything.

10 A. No. This particular mine --- when we completed
11 our work 11 days prior to the incident, this system
12 was tuned. And we had done --- from a manufacturer's
13 standpoint, we had done everything that we needed to
14 to make it necessary for them to easily continue to
15 install readers as the --- as necessary to meet the
16 coverage objectives for both State and Federal.

17 Q. Okay. And as far as what the company had as far
18 as spare parts, was they having any kind of issues
19 with backlogs and orders or --- did they have all the
20 parts they needed to complete the system?

21 A. To my knowledge, that they did. I know that they
22 had a substantial number of readers outside that were
23 ready to go underground and be installed.

24 Q. And do you recall if they had the sufficient
25 amount of radios and tags, tracking tags?

1 A. I would have to say that they did.

2 Q. Who did you primarily work with at UBB when you
3 did the ---?

4 A. My contact was Derrick Kiblinger. Derrick was ---
5 from what I understood, it was his responsibility to
6 make sure that the mine was installed from a leaky
7 feeder and tracking standpoint. And he had some other
8 responsibilities as well, keeping up the lifeline and
9 that kind of thing. He had a gentleman that helped
10 him with installation as well. His first name is
11 Patrick and his last name escapes me right now.

12 Q. Would it be Lomas?

13 A. Patrick --- it may be.

14 Q. And so I would assume, and you can correct me if
15 I'm wrong, but they probably started on the system ---
16 was it sometime in January or February or was it
17 December? Just give me a guess of when you think.

18 A. I would say that that was around the first of the
19 year it probably would have been or probably ---
20 possibly earlier. I didn't verify these dates before
21 I came.

22 Q. Was they continually working on it every day or
23 was it maybe --- how often was they working on the
24 system, to install it?

25 A. I can't really answer --- answer that. I can only

1 answer for the days that I was scheduled to be there
2 and worked with the people. So I'm not sure.

3 Q. Okay. As far as the tag readers, the tracking
4 devices go, could you point out on the map where you
5 thought the farthest points were that they had
6 installed? You said you was working this right here?

7 A. That'd be the ---

8 Q. Mother Drive area.

9 A. --- Mother Drive there.

10 Q. Yes.

11 A. To my knowledge, we had at least a reader at the
12 Mother Drive. And I was thinking that we had one inby
13 in this direction here, toward the Glory Hole, but I'm
14 not as certain about that. We had readers from the
15 South Portal all the way into at least the headgate or
16 the Mother Drive for the longwall.

17 Q. And that was the farthest point for the longwall
18 and Tailgate 22 section and the headgate as far as
19 tracking goes?

20 A. Yes, to my knowledge. There may have been one on
21 up toward Headgate 22, if memory serves me right, but
22 I can't verify that for sure.

23 Q. Okay. Now, as far as communications go, as far as
24 the leaky feeder was installed, where was the farthest
25 point that you recall that it was installed?

1 A. At least to this area. And I recall looking at
2 and tuning amplifiers toward the headgate, so I know
3 that we had voice --- we had cable that would provide
4 voice toward the longwall. And as I recall, we had it
5 up toward Headgate 22 as well.

6 Q. Did the company have a communication and tracking
7 map that you used during the installation?

8 A. Yes.

9 Q. Did it actually show, you know, locations and the
10 routing of the leaky feeder system?

11 A. Well, since we were in the process of installing,
12 it was a proposed map. Typically, you know, as you
13 complete an installation, you go back and do an
14 as-built and make changes with engineering that show
15 any --- you know, any changes to a proposed map that
16 you made. So the only map that we had was the
17 proposed map that showed where we should install
18 devices at this mine.

19 Q. Did they keep a copy of that map on site at the
20 mine near the computer system or ---?

21 A. Yeah. Yes, they did. It was located --- if
22 memory serves me correct, it was located downstairs,
23 where the dispatcher is located, on the wall, near our
24 communication room.

25 Q. I've brought a copy of the map that they have

1 given to us, to MSHA, and I'd like for you to look at
2 this map. There's actually two parts to it.

3 A. Okay.

4 A. One part shows pretty much inby Ellis Switch to
5 the longwall, the Headgate 22 and Tailgate 22
6 sections. And the other one is a map of the south
7 portions of the mine and where the North and South
8 Portals are. Now, as far ---.

9 MR. MAGGARD:

10 I'd like to put this in the record,
11 please.

12 ATTORNEY BAXTER:

13 Okay. The large one will be Exhibit One.

14 MR. MAGGARD:

15 Right.

16 (D. Childress Exhibit One marked for
17 identification.)

18 ATTORNEY BAXTER:

19 And the smaller one, Exhibit Two.

20 MR. MAGGARD:

21 And the smaller one Exhibit Two.

22 ATTORNEY BAXTER:

23 Okay.

24 (D. Childress Exhibit Two marked for
25 identification.)

1 BY MR. MAGGARD:

2 Q. Let me turn it around here where you can see it.

3 Now, right here, around the 100 Break range where the
4 Mother Drive is, if you can see it, there is three tag
5 readers shown in that area. Would you say that that's
6 possibly correct or do you recall?

7 A. Oh, you say that this shows the actual location or
8 proposed?

9 Q. This is supposedly the actual location.

10 A. Okay.

11 Q. Now, I don't know that for sure, but the green
12 circles on the map is where they're saying they were
13 at.

14 A. Yeah. That would look accurate in that --- you've
15 got two lines here. This mine was in the process of
16 installing to meet the coverage objectives. They
17 would probably need more there. Since this is the
18 main intersection, it would better show direction of
19 travel. But since --- I recall that this is about as
20 far as we were able to install. That would probably
21 be accurate for the work that we did prior.

22 Q. Okay. You can also see that they got some boxes
23 here showing the ends of the leaky feeder system,
24 which, you know, was several breaks back from the face
25 on the Headgate 22.

1 A. Okay.

2 Q. And it looks like they ended it down near the Head
3 Drive of Tailgate 22 section. It actually looks ---
4 appears that it went all the way to the longwall face,
5 close to the longwall face here. Did you ever travel
6 up to ---

7 A. I did.

8 Q. --- that area?

9 A. Uh-huh (yes).

10 Q. Where was the end of the cable at?

11 A. I don't recall what date it was that I traveled to
12 the longwall. It was three --- probably three to four
13 weeks prior to the incident, but at that time, the end
14 of the cable was at the mule train on the longwall.

15 Q. Okay. And was it functioning, working?

16 A. Yeah. Yeah, to my knowledge it was.

17 Q. And was they giving radios to the guys on the face
18 or do you know?

19 A. Radios down the line. See, we went through an
20 incident, remember, that because of some interference
21 between handheld radios and other remote control
22 devices at a period of time that we didn't have any
23 radios in the face. And I can't recall if this is
24 that period. I do know that it was customary for the
25 miners to at least travel, you know, to the tailpiece

1 with a radio and use a radio for calling the road and
2 just general traffic underground.

3 Q. Okay.

4 A. But I don't recall if they had a handheld radio
5 down the face at that time.

6 Q. Okay. Tell me a little bit about what was going
7 on as far as interference from handheld radios. What
8 all problems was going on? Why would they keep from
9 having coverage at the section faces and the longwall
10 face?

11 A. This is a period of time that it was noted that
12 --- by one of the Massey operations that when you
13 transmitted with a handheld radio, that it caused some
14 of the remote control miner devices --- remote control
15 continuous miner remotes to start and stop some of the
16 functions upon the continuous miner. If I recall
17 correctly, it was the JNA type remote control that was
18 noted as the type affected. But during the process of
19 determining what miners --- what remotes were
20 affected, it was allowed for a miner to not have to
21 carry a handheld radio in the face until there could
22 be some investigation of those affections. And
23 corrections made at that particular type remote before
24 they were allowed back in the face.

25 Q. And was this a UHF radio of the same type that was

1 used at UBB that was causing the problem?

2 A. Yes.

3 Q. What kind of incident occurred? Do you remember
4 what they said happened as far as the remote and the
5 JNA system? Was it a continuous miner?

6 A. Yeah, it was a continuous miner that was affected.
7 I was not there during that testing or the initial
8 occurrence, but it may do things like turn the lights
9 on and off when you key up on the miner itself. So
10 Massey safety actually issued an order that there
11 would be no radios in the face area, and it may have
12 been during this time that that order was in effect.

13 Q. Okay. Now, as far as this leaky feeder looks like
14 it probably got up to maybe the headgate stage loader,
15 in that area. Would you say that's correct, ---

16 A. Yeah.

17 Q. --- up in that area?

18 A. I would say that --- I wasn't there, obviously,
19 the day of the accident, so I can't confirm the exact
20 location, but of course, this was a retreating
21 operation, so you know, instead of having to add cable
22 for the mining operation, they would actually have to
23 eliminate cable on a periodic basis. So therefore, I
24 would say that they were pretty close to the face with
25 the cable.

1 Q. Do you remember installing a HEB on the leaky
2 feeder --- H-E-B, HEB, on this leaky feeder line going
3 up to the stage loader?

4 A. No, not that I'm aware of. I didn't install one
5 myself, no.

6 Q. Okay. So basically this probably looks like an
7 accurate map, you think, in your opinion? I know you
8 haven't looked at all of it, but in this area so far,
9 from 78 ---?

10 A. Yes, I agree.

11 Q. Okay. As far as any interference from the radios
12 to methane monitors, have you see any problems with
13 that?

14 A. Yes, I have. And it also became apparent that
15 when you keyed a radio up in close proximity to a
16 methane monitor --- and when I say close proximity, I
17 would say within possibly ten feet, that it could send
18 an erroneous alarm to the computer system as a result
19 of keying up a radio in close proximity.

20 Q. Is it a particular type that it affects worse than
21 another? Is it like a CSC versus a general, one of
22 them is worse or about every one you've seen done the
23 same thing?

24 A. To my knowledge, most, if not all, methane
25 monitors can be affected by the radio frequency

1 emissions.

2 Q. Okay. What about spotters, have you ever noticed
3 spotters having any kind of fluctuation?

4 A. No, I've never noticed a fluctuation in a
5 handheld spotter at all myself.

6 Q. And what about CO sensors?

7 A. The CO monitor?

8 Q. Right, like the type you say?

9 A. Yeah. That's the ones I was referring to, the CO
10 monitors underground. I have noticed on occasion if
11 you keyed them in close proximity, it can cause it to
12 send an erroneous alarm.

13 Q. So the COs do, but you know, I just --- I need to
14 get this clarified. As far as the methane monitor,
15 let's say, on a miner, have you noticed that it would
16 fluctuate or do anything?

17 A. I haven't noticed or it has never been reported to
18 me that a radio had any effect upon any methane
19 monitor at the mine.

20 Q. Thank you. Let's talk a little bit about the CO
21 system. Did you do any work on the CO system at UBB?

22 A. No. I was actually hired to assist with
23 communication and tracking. The only possible
24 crossover would be, you know, I was involved and
25 worked with the tracking software, which is a software

1 module that's actually installed upon the CO system.

2 It's a computer software.

3 Q. Okay. Let me ask you a little bit about the
4 sensors on the CO system. What is the maximum
5 concentration they can accurately or what's the
6 maximum concentration the sensor can stand? Is there
7 a certain limit that they'll fail at, or tell me a
8 little bit about the sensors, what kind of problems
9 can occur and ---.

10 A. Well, I'm going to be of little help to you with
11 the COs then. You know, I've been very busy during my
12 two years at Pyott-Boone with communication and
13 tracking, and it has not allowed me to be educated in
14 a lot of the other products that Pyott-Boone
15 manufactures, including COs.

16 Q. Okay. I've got an alarm history here from the CO
17 computer's event logger. And I've got from 12 o'clock
18 that day until about eight o'clock that night a list
19 of alarms. Now, I need to kind of ask your opinion on
20 this and see what you --- if you could help me. If
21 you notice on this second page there was some ---
22 there was a tag reader that was coming on and offline,
23 okay, at 1454 back to about 14449. Prior to that,
24 there was a smart remote at Ellis Five Head that was
25 giving a lot of --- it appears to be nuisance alarms,

1 okay. It was reading five, six parts per million, and
2 it ---. There's an analog scanner, and I'm assuming
3 that that's probably around the Mother Drive, but I'm
4 not sure. There's a couple of these things that the
5 CO computer is monitoring that I'm not sure what they
6 are.

7 A. Okay.

8 Q. Okay. Now, this smart remote, I don't know if
9 that --- there was some charging stations down by
10 Ellis Five Head. Do you know anything about that or
11 what that is?

12 A. I'll have to say I don't know enough about the
13 smart remote to be of any assistance with you.

14 Q. Okay. Fair deal. But you can see there was ---
15 that was basically what was going on. Okay?

16 A. Right.

17 Q. Prior to this time period, which was --- what's
18 shown on the CO computer is 1508:01, okay. And what
19 you'll see, you'll see a lot of alarms coming in this
20 communication's dead, okay. Now, this time is
21 approximately six minutes fast. But anyway, you see
22 this first alarm was Six North, 99 Break,
23 communication is dead, and then there were several
24 that just kept coming in right after that. Now, as
25 far as that time stamp right there, if I was to lose

1 communications on a system as large as UBB, how quick
2 after say a line was cut or a data line is broken, how
3 quick would you say that the first alarm would come
4 in?

5 A. It could be several minutes. And that's based
6 upon the limited knowledge that I have of the system.
7 But I do recall it was a 320-baud system, if I'm
8 correct, which is very dated.

9 Q. I think it was 320.

10 A. Yeah, a 320-baud system. In other words, it was
11 probably top of the line when it was originally
12 installed and fast for the day, but, as we know, times
13 change and speeds change, and some of our newer
14 systems, 4,800 baud, the difference in speed is pretty
15 tremendous. Therefore, in a system of this size, the
16 baud rate that this particular system operated with,
17 there could be a lapsed period of time that that
18 information would take to travel the distance
19 necessary to get back to the computer.

20 Q. Okay. Let's say you notice there's several
21 inputs, several addresses that come out at one time.
22 I don't know if we would have to count them to see how
23 many, but if you get a bunch that comes out like that,
24 I don't know how the system is, you know, scrolling
25 through the addresses, pinging addresses or whatever.

1 How does that work?

2 A. Again, I'll have to qualify my response. I didn't
3 write the software and I have just a little bit of
4 knowledge of how this worked as far as the COs and
5 reporting, but the timestamp of these devices are
6 issued by the computer. So if I had to answer, I
7 would say it's the computer's attempt at that time to
8 try to communicate with these devices, in which it was
9 unsuccessful, so it noted that.

10 Q. Do you think it would be a little bit faster about
11 detecting the first alarm since there were so many
12 addresses that failed all at once? Is that possible?

13 A. I can't respond to that. I'm not sure.

14 Q. From your company, who could answer that question?

15 A. I would ask that question to our engineering
16 manager, Adam Godsey. He would be the person most
17 experienced with our product line, as well as he would
18 have some knowledge of --- more knowledge than I of
19 the software and how it worked.

20 Q. Now, you said that it was 320 baud. That's what
21 I believe also. Now, the communications --- or the
22 tracking part of it shows it to be 4,800 baud. Okay.
23 Now, the first tag reader that came in was
24 approximately three minutes later than the first CO
25 alarm that came in as far as communication is dead,

1 which is kind of hard for me to understand since it's
2 a faster baud rate than the CO system, which you know,
3 I'm just getting that from the software.

4 A. Right.

5 Q. Could you explain what you think, why that
6 happened?

7 A. The CO system operates on the CO line. It's on
8 the individual CO line. The leaky feeder operates
9 separately on a coaxial cable. But they're both
10 joined in the computer system. And again, I didn't
11 write the software, so I don't know how the computer
12 system polls. I know it looks and has a process of
13 polling each of the electronic devices that are within
14 each of the two systems that we just talked about.
15 And you know, it may have an order that it must seek.

16 Q. What I'd like to know is, does the CO get a higher
17 priority than the tag read?

18 A. Again, you know, I'm not the one that can shed any
19 light on that for you.

20 Q. Okay. Very good. Now, I got a couple --- I got
21 some printouts of what was on the computer screen as
22 far as maps goes. Here is a tracking map, here's a
23 belt map, and here's a CO map just straight off the
24 screen. Okay?

25 A. Okay.

1 Q. Now, as far as the tracking map goes, it appears
2 that there were two readers around the longwall belt,
3 possibly the Mother Drive. This is just where they
4 put them in at?

5 A. Right.

6 Q. So that part kind of matches as far as that belt.
7 Now, it appears that they have some readers right here
8 that they hadn't made corrections on this map. It
9 doesn't really show the layout of the headgate and the
10 tailgate very well. If you look at this map, there's
11 quite a bit of --- you know, there's a little bit of
12 difference here because it shows the tailgate section
13 and then the headgate.

14 A. Right.

15 Q. This looks like that when they had an old section
16 in the crossover of the outby end of the longwall,
17 that they had left it and never fixed the map. Is
18 that what you would say about the map on the system?

19 A. It does appear that the CO map is more up to date
20 and accurate than the tracking map. However, I'm sure
21 that it can be explained that this is a work in
22 process. And since they were in the process of
23 installing and creating their maps, that they
24 installed components, that it could probably be
25 explained that way, that they --- you know, that they

1 just were in the process of installing the tracking
2 system and had not completed the map.

3 Q. Okay. Here is another copy of the tracking map.
4 And I just penciled in dates, the last time that the
5 tag readers actually saw a tag, an active tag. Now,
6 this part here is, you know, the south side of the
7 mine. This is Three section. You can see there's a
8 lot of tag readers hadn't read anything since probably
9 about the time you was there, March 25th. Some of
10 them didn't read anybody since February 27th. I got
11 one tag reader up here on the longwall that hadn't
12 read anybody since March 17th. I have one down here
13 on the --- I guess that's probably Six North belt,
14 hadn't read anybody since 3/24. I've got a tag reader
15 out on Ellis punch-out that hadn't read anybody since
16 3/24. I know it's a work in progress, but I mean,
17 they've got a bunch of readers installed. Was they
18 having problems maintaining them or what do you know
19 about what they was doing? Was they --- I know they
20 possibly wasn't working on it every day. What do you
21 think? What's your opinion about that?

22 A. I am sort of surprised at some of these dates. I
23 don't recall ten days prior or 11 days prior, when I
24 was underground, that there were that many readers not
25 working or not picking up tags, but it has been quite

1 a while since I've been at this mine. But as far as
2 our work, I mean, it was necessary and, you know, we
3 were responsible for making sure that we had done
4 everything on --- in our ability to give them a system
5 that would function as necessary to make it easy ---
6 as easy as possible for these readers to work. It is
7 a large mine, and therefore the amount of labor
8 necessary to install and maintain a system of this
9 size is a great deal of effort. But I can't respond
10 to why or what they did between the --- you know, the
11 11 days --- or actually, I was reprogramming radios 10
12 days on the surface prior to the accident. I can't
13 respond to what happened the last day I was there and
14 the day of the accident because I wasn't there.

15 Q. Let me ask you a question about power to these
16 units. If you kill power to them --- the tag readers
17 I assume are battery backed up; right?

18 A. That's true.

19 Q. How long will that battery normally last?

20 A. It's predicted to last 96 hours.

21 Q. Let's say it goes --- does the device have
22 circuitry to disconnect it under low battery voltage
23 or --- how does the charging circuit, how does that
24 work on that battery?

25 A. No, they don't have a --- you know, they're

1 created to operate post accident. So therefore, you
2 know, they do not have a circuit that stops their
3 operation. The thought process was to design them to
4 operate as long as possible with --- originally the
5 design was predicted for 96 hours. If you could get
6 106 hours, that would just be a benefit. So they
7 continue to operate until they just cease until the
8 voltage in the battery is such that it does not
9 provide enough voltage to operate the circuitry.

10 Q. When that happens, do you have to go back and
11 replace the battery?

12 A. It depends. On some units it may. On some units
13 it may continue. If you re-energize the system, then
14 they may begin to operate after a period of recharge.

15 Q. Okay. But in your experience, if they've been
16 completely depleted, have you seen a lot of batteries
17 have to be replaced?

18 A. In the readers there's a high percentage of the
19 units that will continue after they're depleted. In
20 the amplifiers that have a 1955 battery pack, there's
21 a lower percentage of those that will recharge.

22 Q. Thank you.

23 MR. MAGGARD:

24 I'd like to maybe put these screen
25 shots ---

1 ATTORNEY BAXTER:

2 Sure.

3 MR. MAGGARD:

4 --- just in the record.

5 ATTORNEY BAXTER:

6 Sure. We'll mark the tracking map as

7 Childress Exhibit Three and the CO map as Childress

8 Exhibit Four and the belt map as Childress Five and

9 the tracking map with notations as Childress Six.

10 (D. Childress Exhibits Three through Six

11 marked for identification.)

12 BY MR. MAGGARD:

13 Q. As far as the refuge alternatives go, what was the
14 company going to do for communication to the refuge
15 chambers?

16 A. It was advised to have a reader in close proximity
17 to the refuge area. State law requires a ten-foot
18 radius, if I'm not incorrect on that. We recommended
19 to the mine that in the more permanent refuge areas
20 that they install readers and that the ones that moves
21 with the section, that they maintain and also move a
22 reader with that refuge chamber as well.

23 The radio signals, you know, the leaky feeder will
24 propagate in excess of a hundred feet. In most cases,
25 easily and should reach inside the refuge chamber as

1 well as long as they locate the leaky feeder in
2 proximity to the refuge chamber.

3 Q. Okay. As far as --- you know, I've been noticing,
4 you know, the ends of the cables of the coax. And I
5 know you guys set on a terminator for those.

6 A. Right.

7 Q. I haven't been seeing the terminator installed.
8 Were they installing the terminator or --- do you
9 know? And tell us what that does, if it affects the
10 way it works for the record, please.

11 A. Not being an electrical engineer with an RF
12 background, you know, I can't get into any high-level
13 discussion about the internal operations of the
14 terminator. But it's advised by the manufacturer of
15 this particular leaky feeder system, and to my
16 knowledge, every system, to terminate the end of the
17 line with a designed termination unit for several
18 reasons, one of which, it does install a 75 load on
19 the end of the line. And again, that's just necessary
20 for proper operation of the system. But it also
21 protects the cable, that kind of thing. And it's
22 advised to always at the end of a piece of cable,
23 regardless, to have a terminator on that system, on
24 that cable. Our MSHA submittal and approval for this
25 system design requires that to be so.

1 Q. Okay. Can you tell me about your manufacturer's
2 recommendations for maintenance of this system? Tell
3 me, is it a weekly recommendation? What's required
4 for that?

5 A. It's a weekly recommendation --- excuse me, a
6 weekly maintenance effort on the part of the mines.
7 The system is relatively low maintenance, but it is
8 recommended that they inspect it weekly for
9 operations. At a minimum, they should disengage AC
10 power to the power supplies and ensure that the
11 battery back-ups are operating properly, that there's
12 no failure in those units, so that in the event of an
13 accident, that you do, in fact, have loss of AC power,
14 that the system would operate as designed and provide
15 the emergency communications.

16 Q. I assume that you were present on April 5th, after
17 the accident; is that correct?

18 A. That is correct.

19 Q. Who contacted you to come to UBB?

20 A. Approximately --- I've got some notes here, if you
21 don't mind me to refer to them. But approximately ---
22 that day I actually worked until about 4:45 in the
23 office at Pyott-Boone, and I went home for the evening
24 about 5:20. Wes Leffel, who is a fellow sales
25 engineer at Pyott-Boone, he called me by telephone.

1 He mentioned that --- Wes was actually working in the
2 area. He was working at an Elk Run mine doing just
3 basic installation assistance. And so he happened to
4 be on Massey property and he had heard rumors. I'm
5 sure that the news had traveled fast within the mines
6 in the immediate area, but he was in close proximity
7 to the mine. He had called me and said that he had
8 heard that there had been an accident at UBB and that
9 he had heard at that time that there was six people
10 dead and that there was 30 people missing at that
11 time. And he had asked what he thought --- or what I
12 thought that we should do to help if that was, in
13 facts, true. Knowing that we had a tremendous amount
14 of Pyott-Boone product in the mine and that they may
15 need some assistance, I told him to go ahead and
16 travel that direction and that I would call the mine
17 and see what I could find out. So we volunteered to
18 assist in any way that we could.

19 So I called the mine and I just said, this is
20 Pyott-Boone. Do you need us? I didn't ask them what
21 happened. I didn't think that they would tell me
22 anyway. I just wanted them to know that it was us and
23 that we were offering any assistance necessary to the
24 effort. I'm not exactly sure who answered the phone,
25 but I think it may have been Greg Clay. He's a

1 purchasing agent, I suppose, over there at UBB. And
2 it seems as though that he just took the phone from
3 his ear and he said, it's Pyott-Boone on the phone.
4 Do we need them? And a few moments passed --- or
5 seconds passed, actually, and Derrick Kiblinger came
6 to the phone. And I asked him, I said, Derrick, I
7 said, what do you need? What do you need from us?
8 What product do you need? Can we bring you anything
9 to help you. And I informed him that Wes Leffel was
10 on the way and asked him if he could --- if he needed
11 Wes up there. And he said he did, in fact, need Wes
12 to come up and offer any assistance that he could.
13 And I asked him if --- I told him I was in Tazewell,
14 and I asked him if there was product that we could
15 bring to assist in the effort. And I think he did
16 give us a few items that he wanted us to bring, but he
17 asked me to come as well. He called down to the guard
18 shack and cleared Wes and myself to enter the
19 property.

20 Q. So did you and Wes arrive at the same time,
21 together or separate?

22 A. No. Wes was closer than I was. He was just right
23 outside the gate, so ---. And I think he was delayed,
24 obviously, by the confusion and whatnot, and he
25 actually had to sit at the guard shack for a period of

1 time, but eventually he was cleared to enter.

2 Q. About what time did you all make it to the mine
3 office at UBB?

4 A. If I was guessing at Wes' time, it may have been
5 around --- he was probably at the mine gate at 5:30,
6 5:35, and he was delayed. He may not have started
7 assisting until about 6:00. And then I arrived about
8 7:50.

9 Q. And when you arrived, where was Wes? Was he still
10 at the guard shack, I'm not real clear, or was he
11 already up at the mine site?

12 A. He was on the mine site. And he was, at that
13 time, working under the direction of actually several
14 people, Derrick Kiblinger. You know, representatives
15 from the State and Federal had request of him and as
16 well as other Massey personnel.

17 Q. Okay. Where did you guys first start working to
18 --- on the computer? I guess you was doing computer
19 type of stuff, printouts. Tell me what all you was
20 doing up there.

21 A. When I arrived, Wes was actively answering
22 requests from multiple people, printouts of mine
23 personnel based upon the information that the readers
24 would give us. Again, it was not a complete ---
25 completely installed system, but we did have readers

1 from the UBB Portal to the Mother Drive that was of
2 some benefit. So he was providing, to the best of his
3 ability, information that would assist in rescue
4 efforts.

5 Q. Okay. Where was he first working at? Was it at
6 the master computer or the slave computer?

7 A. That brings up a good point. There are two
8 computer systems at UBB. There was a master unit
9 located upstairs. It was the older and original
10 computer used to operate the existing CO system. It
11 did have an existing printer on it. Recently, I would
12 say several weeks prior, a newer computer was
13 installed downstairs for the purposes of dispatch, and
14 they were connected in a networking arrangement
15 sometimes referred to as a master and slave. The
16 controlling computer, the master computer, was
17 upstairs. And Wes was --- when I arrived on the
18 property, I went upstairs and Wes was working on the
19 master computer, attempting to run reports.

20 Q. And I assume you assisted him to run the reports;
21 is that correct?

22 A. That's correct.

23 Q. Okay. What type of reports was you printing off?
24 Was it just strictly tag database or was you looking
25 at COs too, or what all was you looking at?

1 A. No. At that time, if I had to classify the
2 efforts, it would be rescue only. There was no --- I
3 was never asked nor was Wes, to my knowledge, asked to
4 look at any particular COs. We were just asked to
5 look at a reader. And we would actually be given a
6 list of people, a list of names, and we would use the
7 software to help determine the last known location.

8 Q. Okay. Now, who was requesting the information?
9 Who all do you remember was requesting the information
10 to be pulled off the computer?

11 A. I did not write anyone's names down, but it was
12 MSHA inspectors.

13 Q. Okay. Was there any files clipped, filtered or
14 anything that was done that night that could have
15 hidden any kind of data as far as the event log files
16 go after the accident?

17 A. No. I can say with confidence that that did not
18 happen. Wes and I knew to make sure that --- you
19 know, we were there to protect the integrity of the
20 data, and that was done both by monitoring the master
21 computer upstairs as well as downstairs. I mean,
22 there was no one that was not authorized to use the
23 computer that did.

24 Q. Okay. So as far as logging in and using
25 supervisory privileges or administrative privileges,

1 were you guys the only ones that had logged in on that
2 night, on April 5th, or was there additional guys like
3 some of the mine --- the company officials that logged
4 in there?

5 A. Wes logged in. He was currently using the
6 computer when I got there. So the access was there
7 when I got there. So I'm assuming and I'm pretty
8 confident in saying that he used his --- any
9 privileges that he had for maximum access to the
10 computer to do so. Okay. And I never saw even people
11 that you would consider authorized by Massey for
12 normal computer operations to touch the computer.
13 They more or less relinquished that task because Wes
14 was there first because of his experience and
15 efficiency in providing information. They
16 relinquished that task to Wes and then myself. I
17 assisted Wes in that process.

18 Q. Now, as far as the system goes, as far as CO, I
19 guess it was still powered up underground after the
20 accident when you arrived; is that correct? It was
21 still reading CO concentrations, alarms activating?
22 Do you recall ---?

23 A. Yeah. I talked to Wes ---.

24 Q. On the portions that were working.

25 A. Yeah, I think the courses --- we know the

1 magnitude of the explosion was such that a large
2 percentage of both the leaky feeder tracking CO system
3 was not functional. And the CO system, the way it
4 operates, when it sends an alarm it requires an
5 acknowledgment. In doing so, it requires that you
6 have the infrastructure necessary to acknowledge that
7 alarm. Apparently, the system --- if an alarm is not
8 acknowledged, the system will just continue to
9 re-alarm. And apparently, for --- in talking to Wes
10 for a long period of time, that the system was just
11 --- would just re-alarm. It was trying ---.

12 Q. Is that an alarm that re-launches every five
13 minutes?

14 A. Yes.

15 Q. Let me ask you about that alarm. When it comes
16 out with a certain concentration attached to the text
17 of the event, what does that concentration mean?

18 Because, you know, I've looked at the data. It looks
19 like the same concentration is appearing most of the
20 time. Maybe on one or two occurrences it was
21 different, but it constantly re-launches the same
22 concentration. What do you know about that?

23 A. Well, I would have to venture to guess that that
24 is just re-launching the reading that it received at
25 that time. The data is not going to change because

1 it's re-launching an alarm, requesting assistance from
2 the operator, which it did not get. So the data is
3 going to continue to re-launch that same data.

4 Q. Okay.

5 A. The system was severed at some point underground
6 and could not --- the system could not retrieve any
7 new data, from what I understand.

8 Q. Let me ask you about tags. Did you notice any
9 non-identified tags in the system when you all were
10 retrieving the data from the tag readers in the mine?
11 Did you see unidentified tags that had a number but no
12 name associated with them?

13 A. I don't recall seeing anything out of the ordinary
14 As far as the database, we had worked with the mine to
15 take a tag, to issue it to a man, to identify that
16 tag, identify the man's name and associate it with the
17 tag and enter it in the database. All that I recall
18 are names associated with tags. I didn't see anything
19 unusual, although I will say that there is a process
20 involved that if a newly-installed reader is not
21 associated to a database, there's a possibility it
22 will cause --- and that's just the configuration
23 process, the process of a new install. There's a
24 possibility, because the reader is not associated with
25 the tag database, that that particular reader may show

1 a number. Now, that number, though, should be
2 referenced --- can be referenced back to the database.
3 And should all of the names be assigned to tags
4 underground, then you would, therefore, be able to
5 identify that name to that tag.

6 Q. Okay.

7 MR. MAGGARD:

8 John, do you want to ---?

9 MR. SCOTT:

10 Yeah.

11 MR. MAGGARD:

12 I'm going to let John take over for a
13 little bit. Thank you.

14 ATTORNEY BAXTER:

15 Do you need a break?

16 MR. MAGGARD:

17 Do you need a break, David?

18 A. No.

19 EXAMINATION

20 BY MR. SCOTT:

21 Q. To your knowledge, were all the tags and the
22 readers and radios --- did Pyott-Boone furnish all
23 those to the company? Did they purchase them from
24 Pyott-Boone or ---?

25 A. Yes, to my knowledge.

1 Q. You didn't see anything that was coming from some
2 other manufacturer or --- it was all ---?

3 A. No. To my knowledge, I didn't see anything there
4 from a communication and tracking standpoint that was
5 not provided by Pyott-Boone.

6 Q. Okay. Did this system have a back-up power supply
7 outside for the communication and tracking?

8 A. Yes, it did.

9 Q. A generator or ---?

10 A. It had a --- well, it had just a standard UPS
11 power conditioner on the computer itself that would
12 maintain operations for a short period of time usually
13 20 to 30 minutes, and then it --- you know, we
14 recommended that the mine --- typically they do have a
15 means of providing additional power by generator, as
16 you mentioned. So to my knowledge, I saw --- I did
17 see a UPS attached to the computer, but I don't know
18 what their plans were for a generator or what to
19 provide power.

20 Q. And you may have already answered this, but to
21 your knowledge, did every employee have their own tag?
22 I mean, everybody was furnished with a tag attached to
23 their belt or cap or ever how that ---?

24 A. Yeah. From what I remember of the orders, they
25 had enough tags and enough radios for all of the

1 miners and they actually should have had a good number
2 of spares as well. They were good about making ---
3 this mine was good about making sure that they had
4 enough radios and tags to meet the requirements for
5 West Virginia.

6 Q. So were they pretty much in compliance with the
7 state requirements, to your knowledge, or close to
8 being?

9 A. We were in the middle of an install and it was
10 their efforts, and they were working very hard, I'll
11 say, to make sure that they purchased and installed
12 everything to make them compliant.

13 Q. Basically, the tracking system in the --- kind of
14 piggybacked off of the old CO system or mine boss
15 system or belt boss system were kind of tied together
16 on computers, and you were talking about the baud rate
17 of the CO system being at 320, 300s, something like
18 that. The systems that you've worked with maybe at
19 other mines or specifically at UBB, the more stuff you
20 add to that system, does it typically slow them down a
21 little bit as far as --- or did you notice anything?
22 Like if you start adding more components to a system,
23 does that typically slow the system down as far
24 as ---?

25 A. Yeah. I would say that that's a true statement

1 for any statement from a CO standpoint. If you
2 continue to add COS, regardless of the speed, it will
3 --- you know, it's more work for the system to do.
4 Therefore, it may --- or will impact its operational
5 speed. And it's probably more pronounced on the 320
6 system than a 4,800.

7 Q. And naturally you said you were more familiar with
8 the communication and tracking part. Do you know
9 about how fast or how the scan for the readers, as far
10 as a time, was it pretty quick as far as how often it
11 scanned each particular reader for data?

12 A. The law requires that it scans at least, at a
13 minimum, every 60 seconds. To my knowledge, I didn't
14 see anything that would indicate that the readers were
15 outside that time frame. You know, it was never
16 brought up to me, nor did I have any concern it
17 wasn't. The readers scanned and communicated very
18 efficiently back to the computer system.

19 Q. You probably wouldn't --- well, you said you have
20 only been with Pyott-Boone for two years, so you
21 really wouldn't have any idea of when the initial
22 system was installed at UBB. It was probably prior to
23 your employment?

24 A. The initial CO system?

25 Q. Yes.

1 A. No, it's prior to my employment.

2 Q. And as far as the communication and tracking, when
3 did they first --- when did you first start dealing
4 with UBB on that system?

5 A. It was several months prior to the incident.
6 Again, we typically do the installations in two part,
7 and we delivered the communications probably in the
8 previous year for them to start to install. I don't
9 have those exact dates in front of me. And then the
10 tracking, I would say that prior to the first of the
11 year was the original tracking delivery.

12 Q. Yes.

13 A. So they were spending then several months trying
14 to get the system installed in a mine --- this is the
15 largest mine that we've installed for Massey. So it's
16 going to take a lot longer to install versus a small
17 mine.

18 MS. SPENCE:

19 I have a couple here.

20 EXAMINATION

21 BY MS. SPENCE:

22 Q. Can you explain to me how the tracking device
23 works, the device itself, when a miner carries it?
24 What does he or she have to do to make it operate?

25 A. In normal operation, they don't have to do

1 anything. They wear a pouch. The pouch is --- the
2 reader itself is a very hardback, potted device. It's
3 resilient. It's pretty resilient, and it resists
4 water and impact to a certain degree. It has a
5 battery inside of it that's expected to last under
6 warranty for two years, so it's not anything that they
7 have to charge or maintain. We have a pouch that they
8 put the tag into and wear it where it's most
9 comfortable. We recommend either the belt or the
10 suspenders of the belt that they have. It emits a
11 signal in the 900 megahertz range, which the readers
12 listen for, pick up. So wherever they travel, it
13 automatically sends location information to the
14 reader, which processes that information and actually
15 wirelessly transmits that data to the leaky feeder
16 line, which is transmitted outside to the mine boss.

17 Q. They don't have to turn it on or anything?

18 A. It's always on.

19 Q. Okay. Did your company or did Massey determine
20 where these tracking readers would be placed in the
21 mine or did you all work on that together? How was it
22 determined?

23 A. Actually, I think it's a combination of State and
24 Federal guidelines, first of all, and then the
25 engineering departments at our customer's location, in

1 this instance Massey, provide us an AutoCAD map. And
2 based upon the coverage guidelines of, you know, MSHA
3 and the State, we look at the mine and we --- and
4 based upon the operational parameters of the
5 equipment, we configure or we provide assistance in
6 determining proper locations to meet the objectives.

7 Q. Okay. Thank you.

8 RE-EXAMINATION

9 BY MR. MAGGARD:

10 Q. Did you all have to provide some training up there
11 at UBB to the miners or what --- tell me what you
12 recall, what all you did. How many people attended?
13 What kind of training did you do up there on the
14 system?

15 Q. It was mostly training during the installation of
16 both the leaky feeder and tracking. We provided on-
17 site and underground technical assistance with the
18 installation. Again, the communication aspect of it
19 started several months prior to the event, in the
20 previous year. So during the installation, we
21 provided them a map and then we --- a qualified
22 service technician or salesperson will accompany the
23 delivery and instruct the mine personnel on the proper
24 installation techniques for the installment of the
25 system. That could be --- it is true as well for

1 tracking.

2 Q. How many employees would you say was qualified to
3 install the system that had worked with you enough
4 that they were --- they could kind of do things on
5 their own?

6 A. I would have to say that there's probably three or
7 four people.

8 Q. With three or four people, with all of the
9 components they need installed, how long would you
10 think it would have took to finished what was left at
11 UBB as far as getting section coverage and finishing
12 the communication system and having all the tag
13 readers work and everything put in the database? Just
14 an estimate. I know you've worked a lot out in the
15 field and you kind of --- you're probably going to be
16 a little bit quicker than them, but ---.

17 A. Well, the tag database, to my knowledge, was
18 complete. So they had completed certain components of
19 the system. It was mostly just the installation ---
20 the continued installation to the sections of the
21 leaky feeder, which if you looked at the leaky feeder
22 system completion percentage, I mean, they were mostly
23 complete. Probably into the 95th or 96 percent
24 complete range. They did lack section coverage, it
25 was very important, but they were substantial and

1 complete on leaky feeder. Tracking not so much.
2 There was a lot of work to do yet on tracking,
3 possibly --- I'm guessing maybe they were just only 50
4 to 60 percent complete. I can't answer how much
5 resources that they would be able to apply on a daily
6 basis to the continued installation, but assuming that
7 they would apply the necessary resources, they still
8 were a month out, I would say, to complete both
9 systems as necessary.

10 Q. Okay. Thank you. As far as that database goes,
11 is there a maximum amount of tags that can be put in?

12 A. There is. I think that we can use somewhere in
13 the neighborhood of 1,027, if I'm not mistaken.

14 Q. As far as, you know, around April 5th, let's say,
15 mid-April time frame, you didn't have to add any tags
16 --- you didn't add any tags to the database, didn't
17 modify the database in any way; is that correct?

18 A. It was not our responsibility any longer to work
19 with the database. We've instructed Derrick Kiblinger
20 and other representatives at the mine as to how to
21 maintain their database, and they were very efficient
22 in adding people, deleting people and maintaining the
23 database as necessary at the time of the accident.

24 Q. Okay. On the leaky feeder system approach, okay,
25 there's a part in there about AC power must be

1 interlinked to a fan down alarm. Do you know what
2 that's talking about?

3 A. Interlinked to a fan down alarm?

4 Q. Yeah.

5 A. Not specifically, but I do know generally that
6 when there's a fan down and/or power down sequence,
7 their system automatically reverts to battery power at
8 that time.

9 Q. Okay.

10 A. We recommend that obviously all devices --- all
11 power supplies are powered from underground power so
12 that in the event of an emergency and it's a power
13 down situation or fan down, that they revert to
14 battery power.

15 Q. Okay. But as far as you know, they didn't have
16 the fan at UBB interlinked with your system; is that
17 true? They had everything fed from underground power
18 but not linked to the --- to know when a fan stopped
19 basically?

20 A. I'm not aware if it did or did not. I didn't see
21 such a configuration and was not involved in setting
22 one up.

23 Q. As far as --- I mean, you've traveled a lot on the
24 beltline, okay, I assume; right?

25 A. At UBB?

1 Q. Yeah. A lot in the intakes; right? What would
2 you --- on the last few weeks that you were there or
3 few visits, did you see anything unusual at this mine,
4 any hazards that might have come to mind that ---?

5 A. No. I felt very safe at this mine, to be quite
6 honest with you. I've worked the degas longwall mines
7 and I've worked actually in a longwall mine. If I had
8 to choose, I'd probably work at this one over the
9 previous two.

10 Q. As far as along the belts, did you see any belts
11 that needed rock dusted or were starting --- weren't
12 very clean or anything like that from time to time
13 when you was in the mine?

14 A. Well, had I been responsible for other --- you
15 know, for noting that, I probably --- I possibly would
16 have noticed more. But usually when we were there our
17 objective, obviously, was to be as safe as possible.
18 We had work to do outside of that. I didn't notice
19 anything out of the way at this mine. I never felt
20 unsafe.

21 Q. Do you carry a methane spotter with you when you
22 go underground?

23 A. If I'm by myself. I'm usually with someone that
24 has one.

25 Q. So at any point at UBB did you carry a methane

1 spotter?

2 A. No.

3 Q. Okay.

4 MR. MAGGARD:

5 I need to take a quick break, okay, and

6 go off the record.

7 SHORT BREAK TAKEN

8 ATTORNEY BAXTER:

9 Back on the record.

10 BY MR. MAGGARD:

11 Q. Dave, a couple more questions. Have you put --- I
12 know you helped put some tags, IDs into the computer
13 in the past. Did you put any in there for any mine
14 rescue personnel?

15 A. I didn't enter those tags myself. But prior to
16 the accident, Massey had ordered specific tags that
17 were in a sequence that would not be used at any other
18 mine. It may have been from 75 through 100, if I'm
19 not mistaken. But those tags were to be issued to the
20 Massey mine rescue teams and those --- the mine rescue
21 teams were in the process during their normal safety
22 appearances or audits to the mines to enter themselves
23 in each of the computer databases so that, you know,
24 in the event they had normal work to do at the mine,
25 they wouldn't have to go through the process each

1 time. I'm not sure that they did that --- had the
2 opportunity to do that at UBB, so what the software
3 would do is just show a tag number without a name on
4 it at that time.

5 Q. Did any of the mine management, higher-level mine
6 management, order specific tags for themselves?

7 A. I can't recall if they ordered it, but I think we
8 did save another sequence as well. But I'm not sure
9 if --- I can't recall if they had actually ordered it
10 and received those tags.

11 Q. So as far as --- I mean, can you remember the
12 range of tag numbers that was bought at --- just for
13 UBB, what numbers?

14 A. No, I don't recall.

15 Q. Okay. Did they have any capabilities of
16 connecting to the company? Did they have any
17 capabilities of connecting to the CO computer through
18 the internet, I mean, any kind of internet connections
19 or ---

20 A. No, not that I'm aware of.

21 Q. --- would they just stand alone?

22 A. The mine boss computer had a master/slave. There
23 were two computers connected, but they were on the
24 property, and there was --- to my knowledge, there was
25 no outside computer network or ability of any other

1 outside computers to communicate with it.

2 Q. Thank you. Did you all have a tag reader on the
3 surface that was specifically set as a
4 check-in/check-out tag or tag reader?

5 A. No. That ability does exist for mine boss, but at
6 this mine we had a reader outside that was called the
7 portal reader, and it did pick up tags in the parking
8 lot. Because it is outside, the way radio systems
9 operate, it has a large range, and will pick up tags a
10 good distance away. But its purpose is to pick up
11 people in the staging area, you know, getting ready to
12 get on the ride. And they may either go in on the
13 track, it will pick them up, or if they go in the fan
14 house and start up the intake, it will pick them up.

15 Q. If they had a tag that wasn't working, did they
16 have --- they didn't have a tag reader set up just to
17 test to see if they could see it on the screen as they
18 come up to the computer or anything?

19 A. No, there was no reader with that function.

20 Q. Okay. I forgot what I was going to ask you, but I
21 know you brought a set of notes here today. I would
22 like to request that maybe you can give those to us
23 for the record, but that would be your choice. There
24 may be some information in there that would be
25 beneficial that was left out, I don't know, but ---.

1 A. I don't have a problem with it. There's nothing
2 in here that --- these were for my own benefit, just
3 so that I would not forget times and dates, but
4 there's nothing in here that --- I'm not opposed to
5 providing it to assist you.

6 Q. Okay. Thank you.

7 MR. MAGGARD:

8 I think John's got some more questions.

9 MR. SCOTT:

10 Yeah, I've got just a couple.

11 RE-EXAMINATION

12 BY MR. SCOTT:

13 Q. To your knowledge, did they have any problems with
14 the readers in cold weather? Had they been having any
15 problems with those, with the ones that you installed?
16 Did it affect them any or ---?

17 A. Pyott-Boone has noted sometimes that in extreme
18 cold conditions, and I say extreme cold condition,
19 that's --- usually the atmospheric temperature is
20 below freezing and high wind chill, such as sometimes
21 the first reader in the intake --- sometimes we have
22 noted ourselves, not necessarily at this mine, nor did
23 I note it at this mine, we've noticed that there's
24 sometimes some reliability issues in extreme cold.

25 Q. Since April 5th, they have got some of the

1 tracking and communications working probably outby
2 Ellis Switch back to the North Portal. Have you been
3 involved in any of that?

4 A. Yes.

5 Q. Basically what was some of the major issues with
6 some of that? Basically battery back-ups or was there
7 anything that was noticeable as far as damage or
8 anything?

9 A. No. I was requested by Derrick Kiblinger to ---
10 and also Wayne Persinger, I think he's the mine
11 manager, to assist them with the --- with getting the
12 system back operational. So I was there on two
13 occasions, one of which I went underground. We
14 started the process of looking at the leaky feeder
15 first and seeing what devices could be used again and
16 what could not. And most of the amplifiers were okay
17 and there was no physical damage noted at all, and I
18 could not even tell that that portion of the mine that
19 I visited had had an explosion. But the 1955s, as I
20 mentioned earlier, and how they operate, they were
21 left on battery obviously since the time of the
22 accident. So therefore, they had discharged
23 themselves to the point because they do have a battery
24 in them that would need service. So it was my
25 recommendation that they start the process of

1 switching out the non-functioning 1955s with new
2 units, and then we could service and check out the old
3 units and return them back to them and get them up and
4 running.

5 They were also in the process of evaluating the
6 condition of the readers as well. However, they did
7 have a lot of inventory of readers that they could use
8 in the event that they --- that the readers were not
9 functional, so I'm not aware of how many, if any, of
10 the readers they needed to change out. But I did what
11 I needed to to assist them in getting the system back
12 up and running. And Derrick Kiblinger has taken that
13 task on, and I haven't had to help him any longer.

14 Q. As far as you know, there wasn't --- haven't been
15 any modifications or anything that was altered or
16 anything on the system that you dealt with since or
17 then in putting everything back?

18 A. No. The parts of the system that I was able to
19 inspect had not been altered, no.

20 MR. SCOTT:

21 That's all I have.

22 MS. SPENCE:

23 Can I ask one more, please?

24 RE-EXAMINATION

25 BY MS. SPENCE:

1 Q. You talked about using the tracking system after
2 the explosion. Was it of any value in locating
3 miners?

4 A. Yeah, it was. It gave a snapshot in time of where
5 people were with the percentage of the installation
6 that was complete, and it was very beneficial in
7 helping with the rescue efforts in determining who was
8 still underground and who was actually outside at the
9 time of the accident. It would have been better had
10 more of the system been complete, but it was of great
11 assistance, I think, to the effort.

12 Q. Could you tell us what --- how many people you
13 were able to identify locations for, approximately?

14 A. As far as to what percent of accuracy, there's ---
15 we used some of the readers at the headgate to
16 determine basically who went in that morning. Since
17 there was no readers on the active section installed
18 and operational, you did not receive a lot of
19 information of the movement of the miners during the
20 day, but you could use the readers to see what
21 personnel entered and passed that point and did not
22 return. So therefore, it could be assumed that they
23 were still in by that point.

24 MS. SPENCE:

25 Thank you.

1 RE-EXAMINATION

2 BY MR. MAGGARD:

3 Q. When you got there April 5th, how late did you
4 guys stay there? Did you stay up through April 6th or
5 --- how much time did you have to spend there?

6 A. Yeah, we stayed there all night. Let me see. We
7 continued to work with MSHA, State and mine management
8 throughout the night. The amount of tasks that we
9 were asked to do diminished somewhere around 3:00
10 a.m., so at that point in time we were just on standby
11 until approximately 6:00 a.m. in the morning. But on
12 my way to the mine we put together a list of people on
13 call, and we had a fresh person from Pyott-Boone meet
14 us at the mine early in the a.m. on 4/6 to offer
15 assistance. That began a 24/7 staffing of Pyott-Boone
16 personnel to the effort, and we continued that for
17 about over a week.

18 Q. I know I've asked you probably three or four
19 questions about the company installing the system and
20 it being behind and stuff, and you had --- you
21 mentioned there was three or four guys that knew
22 pretty much how to work on the system. Do you think
23 they were aggressive in their efforts to complete the
24 system or did they work on it when they had time to
25 work on it, when they wasn't doing other tasks and,

1 you know, getting pulled off from it? Did they ---
2 were they aggressive?

3 A. I can only respond to that question as far as what
4 I was able to witness when I was there. And I know
5 that when we were scheduled to work with mine
6 personnel and we had their full attention, and they
7 would actually volunteer and work with us, if
8 necessary, through --- and this is quite often the
9 case, through first shift, into second and on up into
10 the night, if necessary. So they seemed very intent
11 on getting this done.

12 Q. Okay. Thank you, Dave.

13 A. You're welcome.

14 ATTORNEY BAXTER:

15 On behalf of MSHA and the Office of
16 Miners' Health, Safety and Training, I want to thank
17 you for appearing and answering questions today. Your
18 cooperation is very important to the investigation as
19 we work to determine the cause of the accident. We
20 request that you not discuss your testimony with any
21 person aside from your personal representative. After
22 questioning other witnesses, we may call you if we
23 have any follow-up questions. If at any time you have
24 additional information regarding the information that
25 --- regarding the accident that you would like to

1 provide to us, please contact us at the contact
2 information that was previously provided to you.
3 If you wish, you may now go back over any
4 answer you've given during this interview and you may
5 also make any statement that you'd like to make at
6 this time. Again, I want to thank you for your
7 cooperation in this matter.

8 A. You're welcome.

9 * * * * *

10 STATEMENT UNDER OATH CONCLUDED AT 10:25 A.M.

11 * * * * *

12
13
14
15
16
17
18
19
20
21
22
23
24
25

1 STATE OF WEST VIRGINIA)

2

3

4

CERTIFICATE

5

I, Alison Salyards, a Notary Public in and

6

for the State of West Virginia, do hereby certify:

7

That the witness whose testimony appears in

8

the foregoing deposition, was duly sworn by me on said

9

date and that the transcribed deposition of said

10

witness is a true record of the testimony given by

11

said witness;

12

That the proceeding is herein recorded fully

13

and accurately;

14

That I am neither attorney nor counsel for,

15

nor related to any of the parties to the action in

16

which these depositions were taken, and further that I

17

am not a relative of any attorney or counsel employed

18

by the parties hereto, or financially interested in

19

this action.

20



21

22

Alison Salyards

23

24

25

A	65:17	28:16	anyway 29:21	arrived 42:7
ability 35:4	actively	29:22 30:3	40:22	42:9,21
43:3 60:25	42:21	31:11,25	apparent	43:17
61:5	activities	46:4,7,7	26:14	45:20
able 22:20	7:11	46:12,15	apparently	aside 9:22
48:4 56:5	actual 22:7	47:1 57:1	46:7,9	67:21
64:18	22:9	57:3	appear 33:19	asked 10:1
65:13 67:4	Adam 31:16	alarms 28:19	appearance	40:11 41:6
AC 39:9,13	add 25:21	28:25	6:11 10:6	41:10,13
56:25	50:20 51:2	29:19	appearances	41:14,17
Academy 1:9	56:15,16	45:21	59:22	44:3,3,4
access 45:6	adding 50:22	Alison 1:6	appearing	66:9,18
45:9	56:22	69:5	46:19	asking 10:9
accident 6:7	addition	allowed	67:17	aspect 54:18
7:2,3 8:18	11:14	24:20,24	appears 23:4	assigned
16:18	additional	28:13	28:25 33:1	7:20 48:3
25:19	10:12 45:2	altered	33:7 69:7	assist 15:13
35:12,14	49:15	64:15,19	apply 56:5,7	27:22
36:1 39:13	67:24	alternat...	appreciate	40:18
39:17 40:8	addition...	37:13	8:1 10:6	41:15 43:3
44:16	12:20	altogether	approach	62:5 63:11
45:20	address	12:5	56:24	64:11
56:23	10:15 12:1	Alum 3:11	approval	assistance
59:16	addresses	amount 17:25	38:24	8:2 10:6
63:22 65:9	30:21,25	35:7 40:13	approxim...	29:13 40:3
67:19,25	30:25	56:11 66:8	11:19	40:15,23
accidents	31:12	amplifiers	29:21	41:12 47:1
9:17	Administ...	16:5 20:2	31:24	54:5,17
accompany	3:4 6:8	36:20	39:20,21	65:11
54:22	administ...	63:16	65:13	66:15
accuracy	44:25	analog 29:2	66:11	assisted
65:14	advance 10:5	and/or 57:6	April 7:23	43:20
accurate	advised	answer 8:13	39:16 45:2	45:17
22:14,21	37:16	10:2 18:25	56:14	assisting
26:7 33:20	38:14,22	18:25 19:1	62:25 66:3	42:7
accurately	affect 62:16	31:6,14	66:4	associate
28:5 69:13	affections	56:4 68:4	area 14:24	47:16
acknowledge	24:22	answered	19:8 20:1	associated
46:6	agency 1:26	40:24	22:5 23:8	47:12,18
acknowle...	6:8	49:20	25:11,15	47:21,24
46:8	agent 41:1	answering	25:17 26:8	assume 13:19
acknowle...	aggressive	42:21	37:17 40:2	18:14
46:5	66:23 67:2	67:17	40:6 61:11	35:17
Act 7:25	agree 26:10	antenna	areas 16:17	39:16
action 69:15	agreement	12:25	37:19	43:20
69:19	7:17	anybody	Arlington	57:24
activating	ahead 40:15	34:10,12	2:8	assumed
45:21	Airport 1:9	34:14,15	arrangement	65:22
active 13:6	alarm 26:18	anyone's	43:14	assuming
16:22 34:5	27:12	44:11	arrive 41:20	29:2 45:7

56:6	24:24	9:13 11:25	bought 60:12	52:23
as-built	28:23	21:12,18	Boulevard	carry 24:21
20:14	30:19	21:22 37:1	2:6	58:21,25
atmospheric	36:10 48:2	37:5 48:14	boxes 22:22	case 67:9
62:19	51:18 59:9	59:8 67:14	Branch 7:5	cases 37:24
attached	63:2,12	Beaver 1:10	7:22	cause 27:11
5:25 46:16	64:3,11,17	began 66:15	break 8:15	47:22
49:17,22	68:3	beginning	15:8,9	67:19
attempt 31:7	backed 35:17	1:11	22:3 29:22	caused 24:13
attempting	background	behalf 67:15	48:15,17	causes 9:16
43:19	10:25	believe	59:5,7	9:17
attended	38:12	10:11,13	breaks 22:24	causing 25:1
54:12	backlogs	31:21	bring 41:8	cease 36:7
attention	17:19	belt 5:8	41:15,16	certain
67:6	backup 17:9	13:14	brings 43:7	19:14 28:7
attorney 4:4	back-up 49:6	32:23 33:2	broken 30:2	46:16 53:4
4:21 6:3	back-ups	33:6 34:13	brought	55:18
6:21 8:3,6	39:11 63:6	37:8 49:23	20:25	CERTIFICATE
8:8,11 9:9	Barbourv...	50:15 53:9	51:16	4:22 69:4
9:13 11:3	3:6	53:10	61:21	certify 69:6
11:25	based 30:5	beltline	bunch 30:23	certifying
21:12,18	42:23 54:2	57:24	34:17	1:26
21:22 37:1	54:4	belts 58:10	busy 28:11	chamber
37:5 48:14	basic 40:3	58:10	<hr/>	37:22,25
59:8 67:14	basically	beneficial	C	38:2
69:14,17	26:6 29:15	61:25 65:6	C 2:1 3:1	chambers
audits 59:22	50:13	benefit 36:6	6:1	37:15
authoriz...	57:19 63:5	43:2 62:2	cable 12:24	change 30:13
1:25	63:6 65:16	best 43:2	16:13,16	30:13
authorized	basis 25:23	Beth 3:8	20:3 23:10	46:25
44:22	56:6	6:19	23:14	64:10
45:11	bathhouse	better 22:18	25:21,23	changes
AutoCAD 54:1	15:3	65:9	25:25 32:9	20:14,15
automati...	batteries	Big 7:4,22	38:21,22	charge 53:7
53:13 57:7	36:16	bit 10:24	38:24	charging
aware 26:4	battery 17:9	12:10 24:6	cables 38:4	29:9 35:23
57:20	35:17,19	27:20 28:3	call 13:8,12	check 64:2
60:20 64:9	35:22,24	28:8 31:3	15:4 16:4	check-in...
awareness	36:8,11,20	31:10	40:16	61:4
9:17	39:11 53:5	33:11,11	66:13	Childress
a.m 1:11	57:7,14	48:13	67:22	1:3 4:5
66:10,11	63:6,21,23	50:21	called 39:25	8:9 9:7,11
66:14	baud 30:14	55:16	40:7,19	10:18 11:5
68:10	30:16	Bluefield	41:17 61:6	21:16,24
<hr/>	31:20,22	11:9	calling 24:1	37:7,7,8,9
B	32:2 50:16	boss 13:13	cap 49:23	37:10
back 12:19	Baxter 2:3	13:16	capabili...	chill 62:20
13:10	4:4,21 6:3	50:14,15	60:15,17	choice 61:23
20:13	6:4,21	53:16	carries	choose 58:8
22:24	8:11 9:9	60:22 61:5	13:10	circles

22:12	29:19,24	66:23	28:5,6	constantly
circuit	49:1	completed	46:16,17	46:21
35:23 36:2	Commerce	17:10 34:2	46:19,22	constitutes
circuitry	2:22	55:18	concentr...	7:17
35:22 36:9	communicate	completely	45:21	construc...
circumst...	13:1,9	8:12 36:16	concern	11:13
7:21	31:8 61:1	42:25	51:16	consult 8:6
Clamay 14:7	communic...	completion	CONCLUDED	cont 3:1
clarified	51:17	55:22	68:10	contact
27:14	communic...	compliance	conclusion	10:14 18:4
classify	11:12	50:6	8:17	68:1,1
44:1	12:10,16	compliant	condition	contacted
Clay 40:25	12:19,21	50:12	62:18 64:6	39:19
clean 58:12	12:22,23	component	conditioner	content 8:16
clear 42:10	13:24	13:16	49:11	continually
cleared	15:15,16	components	conditions	18:22
41:18 42:1	15:18,23	12:20 14:4	7:20 62:18	continue
clearly 9:25	20:6,24	33:24	conducted	17:14 36:7
clipped	27:23	50:22 55:9	7:23	36:13,19
44:13	28:12	55:18	conducting	46:8 47:3
close 23:5	29:23	computer	6:24	51:2
25:24	31:25	13:11,12	confidence	continued
26:15,16	37:14 49:4	13:13,17	44:17	15:14
26:19	49:7 51:8	16:9 20:20	confident	55:20 56:6
27:11	52:2 54:18	26:18 28:2	45:8	66:7,16
37:16 40:6	55:12	29:5,18	confiden...	continuing
50:7	communic...	30:19 31:6	7:5,10,18	15:13
closer 41:22	19:23 30:1	32:10,11	8:19,22	continuous
CLOSING 4:20	31:21	32:21	confiden...	24:15,16
coax 38:4	39:15 52:7	42:18,18	7:13	25:5,6
coaxial	63:1	43:6,6,8	configur...	control
12:24 32:9	communic...	43:10,12	47:22	23:21
cold 62:14	29:20	43:16,16	57:21	24:14,14
62:18,18	company	43:19	configure	24:17
62:24	11:13,18	44:10,21	54:5	controlling
college 11:7	17:17 20:6	44:23 45:6	confirm	43:16
11:8	31:14	45:10,12	25:19	conversa...
combination	37:14 45:3	45:12	confusion	8:16
53:23	48:23	49:11,17	41:24	cooperation
come 30:3,21	53:19	51:18	connected	10:7 67:18
39:19	60:16	59:12,23	43:14	68:7
41:12,17	66:19	60:17,22	60:23	copy 20:19
58:4 61:18	complete	60:25	connecting	20:25 34:3
comes 30:23	9:14 17:20	61:18	60:16,17	correct
46:15	20:13	computers	connections	13:21 15:6
comfortable	42:24	50:16	60:18	18:14
53:9	55:18,23	60:23 61:1	conserva...	20:22 22:6
coming 10:23	55:24 56:1	computer's	17:2	25:15 30:8
11:16	56:4,8	28:17 31:7	consider	39:17,18
28:22	65:6,10	concentr...	45:11	43:21,22

56:17	D	days 14:23	36:5 38:25	discussion
corrections	D 4:1 6:1	16:2,17	designed	38:13
24:23 33:8	21:16,24	17:11 19:1	38:17	disengage
correctly	37:10	34:23,23	39:14	39:9
24:17	daily 56:5	35:11,12	detailing	dispatch
COs 27:13	damage 63:7	dead 29:20	9:15	43:13
28:11,15	63:17	29:23	detecting	dispatcher
31:4 43:25	data 16:7,8	31:25	31:11	20:23
44:4 51:2	30:2 44:15	40:10	determine	distance
counsel 9:23	44:20	deal 29:14	44:7 53:19	16:13,21
69:14,17	46:18,25	35:9	65:16	30:18
count 30:22	47:2,3,7	dealing 52:3	67:19	61:10
couple 29:4	47:10	dealt 64:16	determined	distributed
32:20	51:11	December	53:22	12:25
52:19	53:15	18:17	determining	doing 34:19
59:11	database	degas 58:6	24:19 54:6	40:2 42:18
62:10	43:24	degree 11:8	65:7	42:20 46:5
course 25:20	47:14,17	53:4	device 13:8	66:25
courses	47:21,25	delayed	35:21	downstairs
45:25	48:2 55:13	41:23 42:6	52:22,23	20:22
court 1:7	55:17	deleting	53:2	43:13
9:24 11:1	56:10,16	56:22	devices 19:4	44:21
coverage	56:17,19	delivered	20:18	Drive 2:22
16:12,20	56:21,23	52:7	23:22	15:9,11
17:16	databases	delivery	24:14 31:5	19:8,9,12
22:16 24:9	59:23	52:11	31:8 32:13	19:16 22:4
54:2 55:11	date 14:17	54:23	57:10	23:3 29:3
55:24	14:22	department	63:15	33:3 43:1
created 36:1	23:11	2:4 6:6,9	de-gasif...	duly 10:18
creating	33:19 69:9	14:10,12	11:10	69:8
33:23	dated 30:8	departments	difference	dusted 58:11
Creek 3:11	dates 13:22	53:25	30:14	
criminal	18:20 34:4	depends	33:12	E
8:21	34:22 52:9	36:12	different	E 2:1,1 3:1
critical	62:3	depleted	46:21	3:1 4:1
10:7	Dave 1:3 4:5	36:16,19	diminished	6:1,1
crossover	10:18	deposition	66:9	ear 41:3
27:24	59:11	69:8,9	direction	earlier
33:16	67:12	depositions	19:13	18:20
CSC 26:21	David 10:23	69:16	22:18	63:20
currently	11:5 48:17	Derek 2:3	40:16	early 66:14
11:17 45:5	day 15:10	6:4	42:13	easily 17:14
customary	18:22	Derrick 18:4	directions	37:25
23:24	25:19	18:4 41:5	17:2	easy 35:5,6
customer's	28:18	41:6 42:14	discharged	educated
53:25	30:12	56:19 63:9	63:22	28:13
cut 30:2	34:20	64:12	disconnect	effect 25:12
C-H-I-L-...	35:13,14	DESCRIPTION	35:22	27:18
11:23	39:22	5:3	discuss 9:21	efficiency
C-137 1:10	65:20	design 36:3	67:20	45:15

efficient	38:11	4:6,8,10	41:11	18:16
16:6 56:21	39:25	10:21	facts 40:13	34:10
efficiently	engineering	48:19	fail 28:7	fed 57:17
51:18	11:9 20:14	52:20	failed 31:12	Federal 7:24
effort 35:9	31:15	excess 16:15	failure	17:16
39:6 40:24	53:25	37:24	39:12	42:15
41:15	engineers	excuse 39:5	Fair 29:14	53:24
65:11	14:8,8	Exhibit 5:1	familiar	feeder 12:23
66:16	ensure 39:10	5:25 21:13	13:2 51:7	13:10,10
efforts 43:4	enter 41:18	21:16,19	fan 57:1,3,6	16:13,16
44:2 50:10	42:1 47:17	21:21,24	57:13,16	18:7 19:24
65:7 66:23	59:15,22	37:7,8	57:18	20:10
eight 28:18	entered 15:3	Exhibits	61:13	22:23
either 53:9	15:5 65:21	37:10	far 12:7	25:13 26:2
61:12	equipment	exist 61:5	14:1 15:16	26:2 32:8
electrical	11:14 54:5	existing	16:12,19	37:23 38:1
38:11	erected	13:16	17:3,17,17	38:15 46:2
electronic	11:13	15:15	19:3,18,23	53:15
32:13	erroneous	43:10,11	19:23 21:8	54:16
eliminate	26:18	expected	22:20 24:7	55:21,21
25:23	27:12	53:5	25:4,13	56:1,24
Elk 40:2	escapes	experience	26:8,11	63:14
Ellis 15:7,7	18:11	11:11 12:6	27:14	feet 16:16
21:4 28:24	ESQUIRE 2:3	36:15	29:25 31:4	17:1 26:17
29:10	essence	45:14	31:25	37:24
34:15 63:2	16:10	experienced	32:22 33:1	fellow 39:24
emergency	estimate	31:17	33:6 35:1	felt 58:5,19
39:15	14:14,20	explain 32:5	37:13 38:3	field 55:15
57:12	55:14	52:22	44:15,24	files 44:13
emissions	evaluating	explained	45:18,18	44:15
27:1	64:5	33:21,25	47:14	filtered
emits 13:6	evening	explosion	50:21,23	44:13
53:10	39:23	7:5 9:5	51:9,10	financially
employed	event 28:17	46:1 63:19	52:2 55:11	69:18
11:17,17	39:12	65:2	56:10,14	find 40:17
69:17	44:15	extent 8:23	57:15,23	finished
employee	46:17	extreme	58:10	10:9 55:10
49:21	54:19	62:17,18	60:11 63:7	finishing
employees	57:12	62:24	64:14	55:11
55:2	59:24 64:8	e-mail 10:15	65:14 67:3	fire 13:3
employment	events 7:21		farthest	first 10:18
51:23 52:1	eventually	F	19:5,17,24	12:14
ended 23:2	42:1	face 22:24	fast 29:21	13:19,20
ends 22:23	everybody	23:4,5,17	30:12 40:5	18:10,18
38:4	49:22	23:23 24:5	51:9	29:22 30:3
enforcement	exact 13:22	24:10,21	faster 31:10	31:11,23
7:10,15	25:19 52:9	24:24	32:2	31:24
9:1	exactly	25:11,24	fatalities	42:17 43:5
engineer	40:24	faces 24:9	7:21 9:16	45:14 52:3
11:17 14:7	EXAMINATION	fact 39:13	February	52:3,10

53:24	24:16	37:13	guys 13:18	40:12 41:9
62:21	furnish	40:15	23:17 38:5	44:7 64:13
63:15 67:9	48:22	44:16	42:17 45:1	helped 18:9
five 5:8	furnished	58:22 59:6	45:2 66:4	59:12
28:24 29:1	49:22	59:25	66:21	helping 65:7
29:10 37:8	further	61:12,13		hereto 69:18
46:12	69:16	68:3	H	hidden 44:15
fixed 33:17	future 9:4	Godsey 31:16	handheld	high 36:18
Floor 2:7	9:18	goes 15:16	16:17	62:20
fluctuate		17:3 19:19	23:21 24:4	higher 32:16
27:16	G	32:22 33:1	24:7,13,21	higher-l...
fluctuation	G 6:1	35:21	27:5	60:5
27:3,4	Garland 11:5	45:18	handset 13:1	Highway 3:5
FOLLOWS	Gary 14:11	56:10	handsets	high-level
10:19	gate 41:23	going 24:6,8	13:2	38:12
follow-up	42:5	26:2 28:10	happen 44:18	hired 27:22
67:23	gathered 7:6	29:15	happened	history
foregoing	general 24:2	37:14	25:4 32:6	28:16
69:8	26:21	46:25 47:3	35:13 40:3	Hole 19:13
foremost	generally	48:12	40:21	home 39:23
12:15	57:5	52:16	happens	honest 58:6
forget 62:3	generator	55:15	36:10	hope 9:16
forgot 61:20	49:9,15,18	61:20	hard 17:6	Horn 14:9
form 16:21	gentleman	good 11:4	32:1 50:10	hours 35:20
four 5:7	18:9	32:20 43:7	hardback	36:5,6
23:12 37:8	getting	50:1,2,3	53:2	house 61:14
55:7,8	16:12,15	61:10	hazards 58:4	hundred
66:18,21	16:20 17:1	Government	Head 23:2	16:16
frame 51:15	32:3 55:11	7:19	28:24	37:24
56:15	61:11	Governor's	29:10	H-E-B 26:2
freezing	63:11	6:19	headgate	I
62:20	64:11 67:1	great 35:9	15:1 19:15	idea 11:4
frequency	67:11	65:10	19:18,21	51:21
26:25	give 14:14	greater 9:16	20:2,5	identifi...
frequently	17:7 18:17	green 22:11	21:5 22:25	21:17,25
9:19	35:4 41:16	Greg 40:25	25:14 33:9	37:11
fresh 66:13	42:24	group 14:2	33:13	IDENTIFIED
front 52:9	61:22	guard 41:17	65:15	5:3
Frontier	given 21:1	41:25	Health 1:9	identify
3:10	44:5 68:4	42:10	2:12,19	47:15,16
full 67:6	69:10	guess 15:4	3:4 6:8,14	48:5 65:13
fully 10:2	giving 23:17	18:17	6:17 7:1	identity
69:12	28:25	34:13	7:25 8:1	8:15,19,22
function	Glory 19:13	42:18	67:16	IDs 59:12
35:5 61:19	go 13:20	45:19	heard 40:4,8	imagine
functional	14:15	46:23	40:9	16:25
46:3 64:9	17:23 19:4	guessing	hearings 9:5	immediate
functioning	19:23	42:4 56:3	HEB 26:1,2	40:6
23:15	20:13	guidelines	help 28:10	impact 51:4
functions	36:10	53:24 54:2	28:20	

53:4	51:21,24	13:18,23	7:4,14,23	keeping 17:6
important	inputs 30:21	13:24	8:2,21	18:8
10:11	inside 37:25	20:11	9:14 10:7	kept 29:24
12:14	53:5	22:16 26:1	24:22	key 25:9
55:25	inspect 39:8	33:23 34:1	67:18	keyed 26:15
67:18	64:19	38:8 66:19	investig...	27:11
improve 16:6	inspectors	installment	9:5	keying 26:19
inby 15:8	44:12	54:24	investig...	Kiblinger
19:12 21:4	install	instance	6:7	18:4 41:5
65:23	12:20	16:24 54:1	investig...	42:14
incident	13:16	instruct	7:19	56:19 63:9
14:23	15:13	54:23	involved	64:12
17:11	17:15	instructed	14:1,3,7,9	kill 35:16
23:13,20	18:24	56:19	14:12	kind 15:19
25:3 52:5	20:17	Instructor	27:24	15:20
included	22:20 26:4	2:11	47:20	16:12 17:8
8:18 9:19	35:8 37:20	intake 61:14	57:21 63:3	17:18 18:9
including	38:18	62:21	issue 9:15	25:3 27:3
10:3 28:15	47:23 50:9	intakes 58:1	47:15	28:8,19
incorrect	52:8,16	integrity	issued 25:10	32:1 33:6
37:18	55:3	44:19	31:6 59:19	38:21
independent	installa...	intent 67:10	issues 15:22	44:15
3:9 6:20	12:18,18	interested	16:1 17:8	50:13,15
indicate	14:4,13	69:18	17:18	54:13 55:4
51:14	15:14,21	interfer...	62:24 63:5	55:15
individual	18:10 20:7	23:20 24:7	items 41:16	60:18
32:8	20:13 40:3	26:11		knew 44:18
individuals	54:15,18	interlinked	J	66:21
9:21	54:20,24	57:1,3,16	J 2:3	know 17:8,21
information	55:19,20	internal	January	20:2,9,12
7:6,9,12	56:6 65:5	38:13	18:16	20:15
7:14,18	installa...	internet	Jasey 3:3	22:11,24
8:20 9:3,3	14:17 52:6	60:18,18	6:6	23:18,24
9:18 10:3	installed	intersec...	jeopardize	23:25
10:11,13	12:12,13	22:18	8:20	25:21 26:7
13:9 16:8	16:20	interview	jeopardized	27:13,24
17:7 30:18	17:23 18:6	7:17 8:14	7:11	28:11 29:8
42:23 43:3	19:6,24,25	8:17 9:25	JNA 24:17	29:10,12
44:8,9	28:1 30:12	10:12 68:4	25:5	30:12,22
45:15	33:24	intervie...	John 2:10,18	30:24,24
53:13,14	34:17 38:7	9:20	6:13,16	32:2,11,12
61:24	42:25	interviews	48:8,12	32:15,16
65:19	43:13	9:19	John's 62:8	32:18
67:24,24	50:11	inventory	joined 32:10	33:11,25
68:2	51:22	64:7	judge 8:24	34:6,16,18
informed	52:14,15	investigate		34:19 35:2
41:9	55:9 62:15	7:20	K	35:10,25
infrastr...	65:17	investig...	keep 7:5,9	36:2 37:23
46:6	installing	3:9 6:20	7:17 8:22	38:3,4,5,9
initial 25:7	12:16	6:23 7:2,3	20:19 24:8	38:12

40:22	8:23,24	list 28:18	34:11 58:6	maintain
42:14	9:1 37:17	44:6,6	58:7	35:8 37:21
44:19	51:12	66:12	look 14:22	49:12 53:7
45:25	layout 33:9	listen 53:12	21:1 22:14	56:21
46:18,22	lead 14:8	little 10:24	33:10 44:4	maintaining
49:13,17	leaky 12:23	12:10 24:6	44:5 54:3	34:18
51:3,8,15	13:9,10	27:20 28:3	looked 26:8	56:22
54:2 55:14	16:13,16	28:8,10	46:18	maintenance
56:14 57:1	18:6 19:24	31:3,10	55:21	39:2,6,7
57:5,15,18	20:10	33:11	looking 20:1	major 63:5
58:15	22:23	48:13	43:24,25	making 10:8
59:12,23	25:13 26:1	50:21	63:14	35:3 50:2
61:11,21	26:2 32:8	55:16	looks 23:2,3	50:3
61:25	37:23 38:1	live 11:5	25:13 26:6	man 47:15
64:14	38:15 46:2	load 38:18	32:12	management
66:18 67:1	53:15	loader 25:14	33:15	60:5,6
67:4	54:16	26:3	46:18	66:7
Knowing	55:21,21	locate 38:1	lose 29:25	manager
40:13	56:1,24	located 16:9	loss 39:13	11:13
knowledge	63:14	20:21,22	lot 11:7	31:16
17:21	learned 10:3	20:23 43:9	28:14,25	63:11
19:11,20	Leffel 14:6	locating	29:19 34:8	manufact...
23:16	39:24 41:9	65:2	36:16	38:14 49:2
26:24 30:6	left 33:17	location	52:16	manufact...
31:4,18,18	55:10	22:7,9	55:14 56:2	17:12 39:1
38:16 44:3	61:25	25:20 44:7	57:23 58:1	manufact...
48:21,25	63:21	53:13,25	61:8 64:7	28:15
49:3,16,21	let's 27:15	locations	65:18	man's 47:16
50:7 51:13	27:20	20:9 54:6	loudly 9:25	map 5:4,5,6
55:17	30:20	65:13	low 35:22	5:7,8,9
60:24	35:21	log 44:15	39:7	14:25 19:4
62:13	56:14	logged 45:1	lower 36:21	20:7,12,15
known 44:7	levels 16:5	45:3,5		20:16,17
KY 3:6	lifeline	logger 28:17	M	20:19,25
	18:8	logging	Maggard 3:3	21:2,6
L	lifetime	44:24	4:7,13,19	22:12 26:7
labor 2:4	11:7	Lomas 18:12	6:7,24	32:22,23
6:6,9 35:7	light 32:19	long 35:19	10:22 11:3	32:23 33:1
lack 55:24	lights 25:8	36:4 38:1	11:20 12:4	33:8,10,17
lapsed 30:17	limit 28:7	46:10 55:9	21:9,14,20	33:18,19
large 5:4	limited 30:6	longer 52:16	22:1 36:23	33:20 34:2
14:25	line 16:7	56:18	37:3,12	34:3 37:6
21:13 30:1	23:19 26:2	64:13	48:7,11,16	37:7,8,9
35:7 46:1	30:2,2,11	longwall	54:9 59:4	54:1,21
61:9	31:17 32:7	11:10 15:2	59:10 62:7	maps 32:22
largest	32:8 38:17	19:16,17	66:2	33:23
14:16	38:19	20:4 21:5	magnitude	March 34:9
52:15	53:16	23:4,5,12	46:1	34:12
late 66:3	lines 22:15	23:14 24:9	main 22:18	mark 37:6
law 7:15	linked 57:18	33:2,16	mains 15:7	marked 21:16

21:24	58:21,25	52:23	66:11	40:23 46:6
37:11	middle 50:9	miners 2:12	Mother 15:9	56:7,9,23
Massey 24:12	mid-April	2:19 6:13	15:11 19:8	67:8,10
25:10 40:4	56:15	6:17 8:1	19:9,12,16	need 8:25
42:16	million 29:1	13:1 23:25	22:4 29:3	9:2 22:17
45:11	mind 39:21	24:19 50:1	33:3 43:1	27:13
52:15	58:4	54:11 65:3	move 37:21	28:19
53:19 54:1	mine 1:8 6:7	65:19	movement	40:15,20
59:16,20	7:1,5,24	67:16	65:19	41:4,7,7,8
master 43:6	12:22,25	mines 10:8	moves 37:20	41:11
43:8,15,16	13:12,16	11:6 16:15	MSHA 6:8 7:8	48:15,17
43:19	14:5,10	39:6 40:5	7:24 8:5	55:9 59:5
44:20	15:3,5,13	50:19 58:6	9:14 10:14	63:24
master/s...	15:19 16:3	59:22	21:1 38:24	needed 17:13
60:22	16:5 17:10	Mine-South	44:12 54:2	17:20
matches 33:6	18:6 20:18	7:22	66:7 67:15	41:10
matter 68:7	20:20 21:7	minimum 39:9	mule 23:14	58:11
maximum	22:15	51:13	multiple	64:10,11
16:11 28:4	27:19 34:7	mining 10:24	42:22	neighbor...
28:6 45:9	35:1,7	11:8 12:5		56:13
56:11	37:19 40:2	25:22	N	neither
mean 34:16	40:7,14,16	minutes	N 2:1 3:1	69:14
35:2 44:21	40:19 42:2	29:21 30:5	4:1 6:1	network
46:17	42:5,11,12	31:24	name 6:4	60:25
49:22	42:22 45:3	46:13	8:24,25	networking
55:22	47:10,14	49:13	9:1 11:2,5	43:14
57:23	49:14 50:3	missing	11:21	never 27:4
60:11,18	50:14	40:10	18:10,11	27:17
means 8:23	52:14,15	mistaken	47:12,16	33:17 44:3
49:15	52:17	56:13	48:5 60:3	45:10
measur...	53:16,21	59:19	names 44:6	51:15
16:23	54:3,23	modifica...	44:11	58:19
meet 17:15	56:20 58:3	64:15	47:18 48:3	new 47:7,23
22:16 50:4	58:5,7,13	modify 56:17	National 1:8	64:1
54:6 66:13	58:19	module 28:1	nation's	newer 30:13
megahertz	59:13,18	moments 41:4	10:8	43:12
53:11	59:20,20	monitor	naturally	newly-in...
members 6:22	59:24 60:5	26:16 27:7	51:7	47:20
7:1,2,14	60:5,22	27:14,19	nature 9:15	news 40:5
7:16	61:5,6	monitoring	near 15:10	night 28:18
memory 19:21	62:22,23	29:5 44:20	20:20,23	44:14 45:2
20:22	63:10,18	monitors	23:2	66:6,8
mentioned	66:7,12,14	26:12,25	nearly 14:18	67:10
40:1 49:16	67:5	27:10	necessarily	non-func...
63:20	miner 3:4	month 56:8	62:22	64:1
66:21	13:5 24:14	months 13:25	necessary	non-iden...
methane	24:15,16	52:5,13	17:14,15	47:9
26:12,16	24:20 25:5	54:19	30:19 35:2	normal 45:12
26:24	25:6,9	morning	35:5,8	52:25
27:14,18	27:15	65:16	38:19	59:21,24

normally 35:19	58:17	28:3,16,23	25:22 36:3	28:17,18
Norman 10:14	objectives 17:16	29:1,7,8	38:20	
North 21:7	22:16 54:6	29:14,15	52:25	P
29:22	obtained 9:18	29:18,20	operational 51:4 54:4	P 2:1,1 3:1 3:1 6:1
34:13 63:2	obviously 25:18	30:20	63:12	pack 36:20
Notary 1:7	41:24	31:22	65:18	page 5:1,2 10:14
69:5	57:10	32:20,24	operations 24:12	28:21
notations 5:10 37:9	58:17	32:25 34:3	38:13 39:9	panels 11:10
note 12:14	63:21	36:15 38:3	45:12	parameters 54:4
62:23	occasion 27:10	39:1 42:17	49:12	parking 61:7
noted 24:11	63:13	43:5,23	operator 47:2	part 21:4 31:22 33:6
24:18 31:9	occasions 28:9	44:8,13,24	28:19	34:6 39:6
62:17,22	occurred 7:22 25:3	45:10 47:4	34:21	51:8 52:6
63:17	occurrence 9:18 25:8	48:6 49:6	opportunity 10:9 60:2	56:25
notes 39:20	occurrences 46:20	53:19 54:7	opposed 62:4	partially 12:13
61:21	offer 41:12	56:24 57:9	order 25:10 25:12	16:20
notice 1:6	66:14	57:15,24	32:15 60:6	particip... 7:4
16:1 28:21	offering 40:23	59:3,5	ordered 59:16 60:7	particip... 7:16
30:20 47:8	office 2:5	60:15	60:9	particular 17:10
50:21	2:12,14,19	61:20 62:6	orders 8:24 17:19	24:23
58:18	2:21 6:5	63:16	49:24	26:20
noticeable 63:7	6:13,17	67:12	ordinary 47:13	30:16
noticed 27:2	7:25 39:23	old 15:4 33:15	original 43:9 52:11	38:15 44:4
27:4,10,15	42:3 67:15	50:14 64:2	originally 30:11 36:4	47:25
27:17	officially 7:8	older 43:9	outby 33:16 63:1	51:11
58:16	officials 7:16 45:3	once 31:12	outside 16:10	parties 69:15,18
62:23	offline 28:22	ones 27:9 37:20 45:1	17:22	parts 17:18 17:20 21:2
noticing 38:3	Oh 22:7	62:15	41:23 49:7	29:1 64:18
noting 58:15	okay 8:12	ongoing 7:10	51:15	passed 41:4 41:5 65:21
nuisance 28:25	13:18 14:1	OPENING 4:3	53:16	Patrick 18:11,13
number 5:3	17:3,17	operate 13:14 36:1	58:18	penciled 34:4
10:14	19:3,23	36:4,7,9	60:25 61:1	people 6:10 14:3,12
13:13 14:3	21:3,13,23	36:14	61:6,8	19:2 40:9
17:22	22:10,22	39:14	65:8	40:10
47:11 48:1	23:1,15	43:10	O'Brien 2:10 6:15,16	42:14,22
48:1 50:1	24:3,6	52:24 61:9	o'clock	44:6 45:10
60:3	25:13 26:6	63:20		
numbers 60:12,13	26:11 27:2	operated 30:16		
		operates 32:7,8		
O		46:4		
O 6:1		operating 39:11		
OATH 1:1		operation 15:4 25:21		
68:10				
objective				

54:12 55:7	63:17	31:12 35:6	primarily	15:19,20
55:8 56:22	pick 53:12	36:4 58:17	18:2	17:4,9
56:22	61:7,9,10	possibly	printer	24:8 26:12
61:11 65:5	61:13,14	18:20 22:6	43:11	28:8 34:18
65:12	picked 13:7	26:17 33:3	printing	62:13,15
66:12	picking	34:20 56:3	43:23	proceeding
percent	34:25	58:15	printouts	69:12
55:23 56:4	piece 38:22	post 36:1	32:21	process 8:17
65:14	piggybacked	potential	42:19,22	12:15,17
percentage	50:14	8:21	prior 11:11	13:23,23
36:18,21	pinging	potted 53:2	11:15,16	16:3 20:11
46:2 55:22	30:25	pouch 53:1,1	14:23	22:15
65:5	place 13:12	53:7	16:18	24:18
performance	17:5	power 16:5	17:11	32:12
16:11	placed 53:20	17:8 35:15	22:21	33:22,22
period 11:15	plans 49:18	35:16	23:13	34:1 36:3
23:22,24	platform	39:10,10	28:23	45:17
24:11	13:17	39:13 49:6	29:17	47:19,23
29:17	please 9:25	49:11,15	34:23,23	47:23
30:17	10:1,2,13	49:19	35:12	59:21,25
36:14	10:15	56:25 57:6	43:12	63:14,25
41:25	11:22 12:2	57:7,11,11	51:22 52:1	64:5
46:10	21:11	57:12,14	52:5,10	processes
49:12	38:10	57:17	54:19	53:14
periodic	64:23 68:1	powered	59:15	product
25:23	point 19:4	45:19	priority	31:17
permanent	19:17,25	57:11	32:17	40:14 41:8
37:19	43:7 47:5	precise	privileges	41:14
permitted	58:25	16:23	44:25,25	products
8:5,23	63:23	preclude	45:9	28:14
Persinger	65:21,23	7:13	probably	progress
63:10	66:10	predicted	12:9 14:4	34:16
person 9:22	points 19:5	35:20 36:5	14:5,16	prohibited
13:6 14:9	police 13:3	prejudiced	16:15 17:1	1:25
31:16	polling	7:11	18:15,19	pronounced
66:13	32:13	premature	18:19	15:24 51:5
67:21	polls 32:12	7:12	22:17,20	propagate
personal 8:3	portal 15:5	present 6:9	23:12	37:24
8:5 9:22	15:6 19:15	6:23 8:4	25:14 26:6	proper 38:20
67:21	43:1 61:7	39:16	29:3 30:11	54:6,23
personnel	63:2	pretty 17:2	33:24 34:8	properly
13:3 42:16	Portals 21:8	21:4 25:24	34:13 42:5	39:11
42:23	portion	30:14 45:7	51:5,19,22	property
54:23	63:18	50:6 51:10	52:7 55:6	40:4 41:19
59:14	portions	53:3 66:22	55:15,23	43:18
65:21	21:7 45:24	previous	58:8,15	60:24
66:16 67:6	possibility	52:8 54:20	63:1 66:18	proposed
phone 40:24	47:21,24	58:9	problem 25:1	20:12,15
41:2,3,6	possible	previously	62:1	20:17 22:8
physical	27:23	68:2	problems	protect

44:19	putting	26:25	53:11,20	38:10 59:6
protects	64:17	27:18	55:13	59:9 61:23
38:21	Pyott-Boone	37:23 61:8	62:14 64:6	69:10
provide 9:3	11:16,18	radios 17:25	64:7,8,10	recorded
9:4 10:10	14:6 28:12	23:17,19	65:15,17	69:12
20:3 36:9	28:14	23:21,23	65:20	reduce 9:17
39:14	39:23,25	24:7 25:11	reading 29:1	refer 39:21
49:19 54:1	40:14,20	26:11	45:21	referenced
54:5,10	41:3 48:22	35:11	46:24	48:2,2
68:1	48:24 49:5	48:22	ready 17:23	referred
provided	51:20	49:25 50:4	61:11	43:15
10:15 49:5	62:17	radius 37:18	real 42:10	referring
54:16,21	66:13,15	range 22:3	really 18:25	27:9
68:2		53:11	33:9 51:21	refuge 37:13
provides 7:7	Q	55:24	reasons	37:14,17
providing	qualified	60:12 61:9	38:18	37:19,22
43:2 45:15	54:21 55:2	rate 30:16	recall 10:12	37:25 38:2
49:15 62:5	qualify 31:2	32:2 50:16	14:10	refuse 8:13
proximity	quality	reach 37:25	17:24	regarding
26:15,16	15:23 16:1	read 32:17	19:25 20:1	67:24,25
26:19	16:7	34:8,10,12	20:4 22:6	regardless
27:11	question	34:14,15	22:19	38:23 51:2
37:16 38:2	8:13 10:1	reader 13:8	23:11,23	Regional 2:5
40:6	10:2 31:14	16:9,19,21	24:4,16	2:14,21
public 1:7	31:15	19:11	30:7 34:23	regular 13:1
8:16,18	35:15 67:3	28:22	45:22	related
9:15 69:5	questioning	31:23	47:13,17	69:15
pulled 44:10	6:25 67:22	34:11,14	54:12 60:7	relative
67:1	questions	37:16,22	60:9,14	69:17
punch-out	9:10 10:9	44:5 47:20	receive	relatively
34:15	59:11 62:8	47:24,25	65:18	39:7
purchase	66:19	51:11 53:2	received	release 7:12
48:23	67:17,23	53:14 61:2	46:24	released 7:8
purchased	quick 30:1,3	61:4,6,7	60:10	reliability
50:11	51:10 59:5	61:16,19	recharge	15:22
purchasing	quicker	62:21	36:14,21	62:24
41:1	55:16	readers 13:8	recommend	relinqui...
purpose	quite 11:7	15:14 17:4	53:9 57:10	45:13,16
15:12	33:11	17:15,22	recommen...	remain 8:19
61:10	34:25 58:5	19:3,14	39:3,5	remember
purposes 9:1	67:8	22:5 33:2	63:25	16:14,25
43:13		33:7 34:5	recommen...	23:20 25:3
pursuant 1:6	R	34:8,17,24	39:2	26:1 44:9
put 21:10	R 2:1 3:1	35:6,16	recommended	49:24
33:4 36:24	6:1	36:18	37:18 39:8	60:11
53:8 55:13	radio 13:7	37:20	49:14	remote 23:21
56:11	16:17 24:1	42:23,25	record 6:11	24:14,14
59:11,12	24:1,4,13	47:10	8:7 9:24	24:17,23
59:13	24:21,25	48:22 51:9	11:21 12:2	25:4 28:24
66:12	26:15,19	51:14,17	21:10 37:4	29:8,13

24:15,19	rescue 43:3	right 18:11	45:8	seeing 38:7
rephrase	44:2 59:14	19:6,21	scan 51:9	47:13
10:2	59:20,20	21:15 22:3	scanned	63:15
replace	65:7	27:8 29:16	51:11,17	seek 32:15
36:11	resilient	29:24,25	scanner 29:2	seen 13:3
replaced	53:3,3	32:4 33:5	scans 51:12	26:22
36:17	resists 53:3	33:7,14	scheduled	36:16
report 8:18	resources	35:17 38:6	19:1 67:5	send 26:17
9:15	56:5,7	41:22	Scott 2:18	27:12
reported	respond	57:24 58:1	4:9,15	sends 46:4
27:17	31:13 35:9	road 1:9	6:12,13,24	53:13
reporter 1:7	35:13 67:3	3:10 12:3	48:9,20	sensor 28:6
9:24 11:1	response	24:1	62:9,12	sensors 27:6
reporting	31:2	rock 58:11	64:20	28:4,8
31:5	responsi...	room 1:10	screen 32:21	separate
reports 9:20	18:8	6:23 20:24	32:24	41:21
43:19,20	responsi...	rough 14:14	36:24	separately
43:23	18:5 56:18	14:20	61:17	32:9
represen...	responsible	routing	scrolling	September
8:5,6,8	35:3 58:14	20:10	30:24	1:11 6:5
9:23 67:21	result 26:18	rumors 40:4	second 28:21	sequence
represen...	retreating	run 40:2	67:9	57:6 59:17
42:14	25:20	43:19,20	seconds 41:5	60:8
56:20	retrieve	running 64:4	51:13	serves 19:21
reproduc...	47:6	64:12	section 7:24	20:22
1:24	retrieving		19:18 23:3	service 14:9
reprogra...	47:10	S	24:9 33:12	14:12
35:11	return 64:3	S 2:1 3:1	33:15 34:7	54:22
request 8:15	65:22	6:1	37:21	63:24 64:2
8:19,21	reveal 8:24	safe 58:5,17	55:11,24	set 38:5
9:21 42:15	8:25 9:1	safer 10:8	65:17	61:3,16,21
61:22	revert 57:13	safety 1:9	sections	setting 16:5
67:20	reverts 57:7	2:11,13,20	15:2 21:6	16:6 57:21
requested	re-alarm	3:4 6:7,14	55:20	severed 47:5
63:9	46:9,11	6:17 7:1	see 22:2,4	shack 41:18
requesting	re-energize	7:25 8:1	22:22	41:25
44:8,9	36:13	25:10	23:19	42:10
47:1	RE-EXAMI...	59:21	26:12	Shane 14:7
requests	4:12,14,16	67:16	28:20	sharing 7:14
42:22	4:18 54:8	sales 11:17	29:14,19	shed 32:18
required	62:11	14:7 39:24	29:19,21	shift 67:9
39:3	64:24 66:1	salesperson	30:22 34:7	short 11:15
requirement	re-launch	54:22	40:17	49:12 59:7
7:13	47:3	Salyards 1:6	47:11,18	shots 36:25
requirem...	re-launches	69:5	49:1,3,17	show 20:9,14
50:4,7	46:12,21	save 60:8	51:14	22:18 33:9
requires	re-launc...	saw 34:5	57:20 58:3	47:25 60:3
8:25 37:17	46:24 47:1	45:10	58:10	showed 20:17
38:25 46:4	RF 38:11	49:16	61:17,17	showing
46:5 51:12	ride 61:12	saying 22:12	65:20 66:6	22:23

29:18	spare 17:18	started	17:24	15:23,25
shows 15:1,1	spares 50:2	13:20	Suite 2:23	16:1,10,19
21:4 22:7	speak 9:25	18:15 42:6	supervisory	17:3,11,20
31:22	specialists	54:19	44:25	18:15,24
33:12	7:19	63:14	supplies	20:10,20
side 15:3,4	specific	starting	39:10	22:23 25:5
34:6	59:16 60:6	58:11	57:11	26:18
signal 13:7	specific...	state 1:8	supply 49:6	27:21,21
53:11	50:19 57:5	6:10,11	suppose 41:1	28:1,4
signals	61:3	7:3,9 11:9	supposedly	30:1,6,7
37:23	speed 30:14	17:16	22:9	30:10,15
sit 41:25	51:2,5	37:17	sure 12:8	30:16,24
site 20:19	speeds 30:13	42:15 50:7	14:11 18:6	32:2,7,10
42:11,12	spell 11:21	53:23 54:3	19:2,22	32:12
54:17	Spence 3:8	66:7 69:1	22:11 29:4	33:18 34:2
situation	4:11,17	69:6	29:5 31:13	35:4,8
57:13	6:18,19,24	statement	33:20 35:3	36:13
six 5:9 29:1	52:18,21	1:1 4:3,20	37:2,6	38:15,16
29:21,22	64:22,25	7:7 8:4,12	40:5,24	38:20,23
34:13 37:9	65:24	10:10	44:18 50:3	38:25 39:2
37:10 40:9	spend 66:5	50:25 51:1	50:11 60:1	39:7,14
size 15:25	spending	68:5,10	60:8	42:25
30:15 35:9	52:13	statements	surface 12:7	43:10
slave 43:6	spotter 27:5	7:8	35:12 61:3	45:18 46:2
43:15	58:21 59:1	States 6:9	surprised	46:3,7,8
slow 50:20	spotters	stations	34:22	46:10 47:5
50:23	27:2,3	29:9	surrounding	47:6,9
small 5:5	staffing	stay 66:4,4	7:21	49:6 50:13
52:16	66:15	stayed 66:6	suspenders	50:14,15
smaller	stage 25:14	Stewart 2:15	53:10	50:15,17
15:25	26:3	stop 24:15	swear 10:15	50:20,22
21:19,21	staging	stopped	Switch 15:7	50:23 51:3
smart 28:24	61:11	15:10	15:7 21:4	51:6,18,22
29:8,13	stamp 29:25	57:18	63:2	51:24 52:4
snapshot	stand 28:6	stops 36:2	switching	52:14
65:4	60:21	straight	64:1	54:14,25
software	standard	32:23	sworn 10:18	55:3,12,19
13:15 14:8	49:10	Street 2:15	69:8	55:22
27:25,25	standby	strictly	system 12:11	56:24 57:7
28:2 31:3	66:10	43:24	12:11,13	57:16
31:19 32:3	standpoint	stuff 42:19	12:19,21	63:12
32:11 44:7	17:13 18:7	50:19	12:22,23	64:11,16
60:2	49:4 51:1	66:20	12:24,25	64:18 65:1
Solicitor	start 12:19	submittal	13:4,5,11	65:10
2:5 6:6	13:18	38:24	13:12,13	66:19,22
sort 34:22	24:15	substantial	13:14,15	66:24
south 3:5	42:17	12:18	13:15,19	systems
15:5,6	50:22 52:3	17:22	13:24	12:16
19:15 21:6	52:8 61:14	55:25	15:15,16	30:14
21:7 34:6	63:25	sufficient	15:18,21	32:14 43:8

50:18 56:9 61:8	69:16	38:17	23:12	tracking 5:6
<hr/> T <hr/>	talk 27:20	terminator	31:24 34:7	5:9 12:11
table 15:1	talked 32:14	38:5,7,8	37:7,10	12:16,20
Tacoma 12:3	45:23 65:1	38:14,23	55:6,8	13:4,5,15
tag 13:5,6	talking 46:9	test 61:17	66:18,21	13:24 16:8
16:19,21	50:16 57:2	TESTIFIED	tied 50:15	17:25 18:7
17:4 19:3	task 45:13	10:19	time 8:7,14	19:3,19
22:4 28:22	45:16	testimony	8:15 10:12	20:6 27:23
31:23	64:13	9:22 67:20	11:16	27:25
32:17 34:5	tasks 66:8	69:7,10	13:19 14:5	28:13
34:5,5,8	66:25	testing 25:7	14:19,21	31:22
34:11,14	Tazewell	text 46:16	17:6 23:13	32:22 33:1
35:16	11:6 12:3	thank 10:5	23:22 24:5	33:20 34:1
43:24	41:13	10:23	24:11	34:3 37:6
47:10,15	team 6:23	11:24	25:12	37:9 46:2
47:16,17	7:2,3,14	27:20	29:17,20	49:4,7
47:25 48:5	7:16	36:22	29:25	50:13 51:8
49:21,22	teams 59:20	48:13 54:7	30:17,21	52:2,10,11
53:8 55:12	59:21	56:10 61:2	31:7 34:4	52:22
55:17 60:3	technical	62:6 65:25	34:9 40:9	53:20
60:12 61:2	54:17	67:12,16	40:11	54:16 55:1
61:4,4,15	technician	68:6	41:20 42:1	56:1,2
61:16	54:22	That'd 19:7	42:2,4,13	63:1 65:1
tags 16:22	techniques	thing 18:9	44:1 46:10	traffic 24:2
17:25,25	54:24	26:23	46:20,25	train 23:14
34:25 47:8	technology	38:21	49:12	training
47:9,11,18	11:9	things 25:8	51:10,15	2:13,20
48:3,21	telecomm...	29:4 55:4	56:15,23	6:14,17
49:25 50:4	11:12,14	think 12:14	57:8 58:12	8:1 54:10
56:11,15	telephone	15:9 18:17	58:12 60:1	54:13,15
56:16	10:14	26:7 30:9	60:4 63:21	67:16
59:12,15	39:25	31:10 32:5	65:4,9	transcribed
59:16,19	tell 10:23	34:21	66:5,10,24	69:9
60:6,10	12:10 24:6	40:21,25	67:23 68:6	transcript
61:7,9	28:7 38:9	41:15,23	times 14:14	1:24
tailgate	39:1,2	45:25	14:18	transmits
15:2 19:18	40:21	53:23	30:12 62:3	53:15
21:5 23:3	42:19	55:10	timestamp	transmitted
33:10,12	54:11	56:12 60:7	31:5	16:8 24:13
tailpiece	63:18	62:8 63:10	today 6:4,23	53:16
23:25	65:12	65:11	6:25 8:8	travel 22:19
take 16:24	temperature	66:22	10:23	23:5,25
30:18	62:19	thinking	61:21	30:18
47:15	ten 26:17	19:12	67:17	40:16
48:12	34:23	Thomas 14:11	told 40:15	53:12
52:16 59:5	ten-foot	thought 19:5	41:13	traveled
taken 1:6	37:17	36:3 40:11	Tom 14:9	15:6 23:11
59:7 64:12	terminate	40:12	top 30:11	40:5 57:23
	8:14 38:16	three 5:6	touch 45:12	tremendous
	termination	22:4 23:12	track 61:13	30:15

40:13	27:21 30:1	upstairs	voluntary	39:23
trip 15:12	39:19 40:8	43:9,17,18	8:13	43:18
true 35:18	41:1 42:3	44:21	volunteer	63:13
40:13	43:1,8	use 9:2 24:1	67:7	65:16
50:25	50:19	44:6,22	volunteered	weren't
54:25	51:22 52:4	56:12 64:7	40:17	58:11
57:17	54:11	65:20	<hr/>	Wes 14:6
69:10	55:11	useful 10:13	W	39:24 40:1
try 16:14	57:16,25	uses 12:24	wall 20:23	41:9,11,11
31:8	58:25 60:2	usually	want 11:2	41:18,20
trying 46:11	60:13	12:17	48:8 67:16	41:22 42:4
52:13	UHF 15:17,18	49:12	68:6	42:9,21
Tuesday 1:10	24:25	58:16,23	wanted 40:22	43:17,18
tuned 17:12	Uh-huh 23:9	62:19	41:16	44:3,18
tuning 16:4	uncommon	utilizes	warranty	45:5,13,16
16:4,10	15:24	13:5	53:6	45:17,23
20:2	underground	U.S 2:4 3:5	wasn't 25:18	46:9
turn 22:2	11:15 12:7	6:6	34:20	West 1:8,10
25:8 53:17	14:15,18	<hr/>	35:14	2:7,12,19
two 5:5	14:19,22	V	51:17	3:9 6:10
11:19 21:2	17:23 24:2	VA 2:8	61:15	6:16 7:3,9
21:19,21	27:10	value 65:2	64:14	7:25 50:5
21:24	34:24	venture	66:25	69:1,6
22:15	45:19 47:5	46:23	water 53:4	Westover
28:12	48:4 54:17	verify 18:20	way 11:12	2:21,24
32:14 33:2	57:11,17	19:22	19:15 23:4	We'll 37:6
43:7 46:20	58:22	versus 26:21	33:25	we're 13:2
51:20 52:6	63:13 65:8	52:16	38:10	we've 14:25
53:6 58:9	understand	VHF 15:16	40:18	52:15
60:23	9:6 10:1	Virginia 1:8	41:10 46:3	56:19
63:12	32:1 47:7	1:10 2:12	56:17	62:23
type 24:17	understood	2:19 3:9	58:19 61:8	whatnot
24:18,23	18:5	6:10,16	66:12	41:24
24:25	unidenti...	7:3,9,25	Wayne 63:10	Wilson 2:6
26:20 27:8	47:11	11:6,11	wear 53:1,8	wind 62:20
42:19	unit 38:17	12:3 50:5	wears 13:6	wireless
43:23	43:8	69:1,6	weather	13:8
typically	United 6:9	visited	62:14	wirelessly
20:12	units 35:16	16:17	week 66:17	13:9 53:15
49:14	36:12,12	63:19	weekly 39:3	wish 68:3
50:20,23	36:19	visits 58:3	39:5,6,8	witness 4:5
52:6	39:12 64:2	voice 12:24	weeks 23:13	7:6,7 9:19
<hr/>	64:3	15:22 16:2	43:12 58:2	10:16 67:4
U	unsafe 58:20	16:7 20:3	Welch 2:14	69:7,10,11
UBB 12:12,22	unsucces...	20:4	2:16	witnesses
13:11,15	31:9	voltage	welcome	67:22
13:20	unusual	35:22 36:8	67:13 68:8	words 12:23
14:15,16	47:19 58:3	36:9	went 15:8	30:10
14:20 15:4	Upper 7:4,22	voluntarily	16:3 23:4	work 11:16
18:2 25:1	UPS 49:10,17	7:7	23:19	15:10

17:11 18:2	X 4:1	1454 28:23	31:22 51:6	95th 55:23
22:21		1508:01	4/6 66:14	96 35:20
27:21 31:1	Y	29:18	4:45 39:22	36:5 55:23
33:21	Yeah 11:4	17th 34:12	400 17:1	99 29:22
34:16 35:2	20:21	1955 36:20	40906 3:6	
35:6,24	22:14	1955s 63:19	48 4:7,9	
51:3 53:21	23:16,16	64:1		
55:13 56:2	25:6,16		5	
56:18 58:8	27:9 30:10	2	5th 7:23	
58:18	45:23,25	20 49:13	39:16 45:2	
59:24 66:7	48:10	2010 1:11	56:14	
66:22,24	49:24	6:5 7:23	62:25 66:3	
66:25 67:5	50:25 57:4	21 5:4,5	5:20 39:24	
67:7,19	58:1 62:10	22 15:2,2	5:30 42:5	
worked 11:6	65:4 66:6	19:18,21	5:35 42:6	
11:10,15	year 18:19	20:5 21:5	50 56:3	
15:8 16:3	52:8,11	21:5 22:25	500 17:1	
19:2 27:25	54:20	23:3	52 4:9,11	
31:4,19	years 11:19	22nd 2:7	54 4:11,13	
39:22	12:6,9	22209-2247	58 3:10	
47:14	13:14	2:8		
50:18 55:3	28:12	24/7 66:15	6	
55:14 58:6	51:20 53:6	24801-2311	6 4:4	
58:7		2:16	6th 66:4	
working 17:6	Z	25E 3:5	6:00 42:7	
18:22,23	zonal-based	25th 34:9	66:11	
19:6 23:15	13:4	25003 3:11	60 51:13	
34:20,25		26501 2:24	56:4	
40:1,2	1	27th 34:10	62 4:13,15	
42:13,17	1 2:23	28 1:11	64 4:15,17	
43:5,18	1,027 56:13	28th 6:5	65 4:17	
45:24	10 4:4,7		66 4:19	
50:10	35:11	3	67 4:19,21	
61:15 63:1	10:25 68:10	3/24 34:14	68 4:21	
works 12:11	100 22:3	34:16	69 4:22	
38:10	59:18	3:00 66:9	696 12:3	
52:23	103(a) 7:24	30 40:10		
worse 26:20	106 36:6	49:13	7	
26:22	11 14:23	300s 50:17	7:50 42:8	
wouldn't	16:17	320 30:9	75 38:18	
51:19,21	17:11	31:20	59:18	
59:25	34:23	50:17 51:5	78 15:8,9	
write 31:3	35:11	320-baud	26:9	
32:11	1100 2:6	30:7,10		
44:11	12 12:9	37 5:6,7,8	8	
wrong 18:15	14:18	5:10	8:35 1:11	
WV 2:16,24	28:17	3837 3:5	891 2:15	
3:11	1301 1:9			
	14 2:22	4	9	
X	14449 28:23	4,800 30:14	900 53:11	