IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLORADO

Criminal Action No. 10-CR-00567-MSK

UNITED STATES OF AMERICA,

Plaintiff,

vs.

SERGIO ABRAHAM BELTRAN,

Defendant.

REPORTER'S TRANSCRIPT
(Rule 702 Hearing)

Proceedings before the HONORABLE MARCIA S. KRIEGER, Judge, United States District Court for the District of Colorado, commencing at 9:10 a.m., on the 19th day of April, 2011, in Courtroom A901, United States Courthouse, Denver, Colorado.

Proceeding Recorded by Mechanical Stenography, Transcription Produced via Computer by Paul Zuckerman, 901 19th Street, Room A259, Denver, Colorado, 80294, (303) 629-9285

APPEARANCES

JAMES BOMA, Assistant U.S. Attorney, 1225 17th Street, Suite 700, Denver, Colorado, 80202, appearing for the plaintiff.

JEFFREY EDELMAN, Attorney at Law, 19201 East Mainstreet, Suite 203, Parker, Colorado, 80134, appearing for Defendant Beltran.

[BRUCE BROWN, Attorney at Law, 1630 Miner Street, Idaho Springs, Colorado, 80452, attended the hearing, appearing for Defendant Celaya, as noted in the transcript.]

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PROCEEDINGS

(In open court at 9:10 a.m.)

THE COURT: Please be seated.

The Court is convened today in Case No. 10-cr-567, which is encaptioned the United States of America vs. Sergio Abraham Beltran. The matter is set down for a 702 hearing.

Could I have entries of appearance, please.

MR. BOMA: Good morning, your Honor. Jim Boma, appearing on behalf of the United States. With membership at counsel table are Forensic Chemists Paul Eyerly and Anthea Chan, C-H-A-N. First name A-N-T-H-E-I -- E-A. Excuse me.

THE COURT: Good morning and welcome.

MR. EDELMAN: Good morning, your Honor. My name is Jeffrey Edelman. I appear on behalf of the defendant, who

appears in custody. And Ms. Janine Arvizu will be arriving shortly.

THE COURT: And I see that your client is aided by court interpreters. Could I have them enter their appearance, too, please.

INTERPRETER WARNER: Ruth Warner and Ellen Klaver, Spanish interpreters.

THE COURT: Good morning and welcome to you as well.

Does anyone object to the interpreters' qualifications to serve in this capacity?

MR. BOMA: No on behalf of the Government, your Honor.

MR. EDELMAN: No, your Honor.

THE COURT: Thank you.

Would you please administer the oath.

(Interpreters sworn.)

THE COURT: Thank you.

Counsel, are you familiar with the procedure we use in the 702 hearings?

MR. BOMA: Yes, your Honor.

MR. EDELMAN: I believe I am, your Honor. I've reviewed your Practice Standards.

THE COURT: Okay. And there actually is a separate sheet that tells about the procedure. Did you have an opportunity to look at that?

MR. EDELMAN: I think so, your Honor. I believe so.

THE COURT: Okay. I understand that it is the Government's opinion that is being challenged here; so Mr. Boma would, you please state the opinion that you plan on offering at trial.

MR. BOMA: Yes, your Honor. The ultimate opinion is that the controlled substances seized in this case were, in fact, 5,219 grams of methamphetamine hydrochloride. The certainty on that is plus or minus one gram.

As it net weight, the concentration of the purity of the methamphetamine, is 96.3 percent. And that's with a certainty of plus or minus 3.5 percent.

The amount of actual drug, which is a conversion of the mixture and substance to a hundred percent purity level, is 5,122 grams. And that's to a 95 percent degree of certainty plus or minus 184 grams, your Honor.

THE COURT: Thank you. And who will be offering this opinion?

MR. BOMA: Ms. Chan, Forensic Chemist Chan.

THE COURT: And what's the objection?

MR. EDELMAN: Well, with regards to the expert, Ms. Chan's, or chemist's qualifications, we have insufficient information to object or accept her qualifications.

We believe that the expert did not obtain sufficient facts or data and that the data that she may have received is not reliable and that the methods she used in applying whatever

data she received -- first of all the methods, were not proper and that the methodology was not proper with the facts that she claims she received.

THE COURT: So I understand you have three challenges: that the methodology was not reliable; that there were insufficient facts and data, and that she had inadequate qualifications. Fair?

MR. EDELMAN: Right now, that's correct.

THE COURT: Well, what do you mean "right now"?

MR. EDELMAN: She may testify to sufficient qualifications; but from what we have thus far in her resumé or CV -- would appear to be inadequate.

THE COURT: All right. Thank you.

The burden is on the Government. Please call your first witness.

MR. BOMA: Your Honor, we all DEA Forensic Chemist Anthea Chan.

(**Anthea Chan** was sworn.)

THE COURTROOM DEPUTY: Thank you. Please be seated.

Please state your full name for the record, spelling your first and last names.

THE WITNESS: Anthea Chan. A-N-T-H-E-A. Last name C-H-A-N.

THE COURT: You may proceed.

DIRECT EXAMINATION

BY MR. BOMA:

Q. Good morning, Ms. Chan.

A. Good morning.

Q. And by whom are you employed, ma'am?

A. I'm employed by the Drug Enforcement Administration in San Francisco, California.

Q. All right. And that's at the laboratory there?

A. That's correct.

Q. And how long have you been so employed?

A. I have been employed by the DEA since August, 2009.

Q. All right. And could you summarize for the Court your educational background and experience?

A. Yes.

MR. EDELMAN: Excuse me, your Honor. I didn't hear the year that she said.

THE COURT: 2009.

MR. EDELMAN: Thank you.

THE COURT: And, ma'am, you're going to need to speak loudly and clearly. You have a soft voice, and we need to hear everything you have to say.

THE WITNESS: Sorry.

I received my bachelor's in chemistry from Rutgers University in 2006, and I received my master's in forensic science from John Jay College in 2009.

I also underwent a six-month basic forensic chemist

training program at the Drug Enforcement Administration at their Western Laboratory in San Francisco, under a senior forensic chemist, which lasted until the end of February, 2010.

BY MR. BOMA:

Q. All right. Could you advise the Court, summarize what that training a program consists of and what you were doing and how you were monitored during that training.

A. Yes. The basic forensic chemist training program, like I said, is a six-month program that entails a lot of policies and procedures and exposing me to those policies and procedures that DEA follows, as well as exposing me to drug chemistry, the instrumentation and methods that we use, as well as competency tests.

So I had a total of approximately 40 samples that I performed analyses on my own, not including any standards, as well as 11 competency tests at the end of that training to make sure that I have passed all the requirements and have the knowledge to proceed to do case work.

Q. All right. And you said no samples. Could you elaborate a little bit on your training? What were you analyzing during this period?

A. I analyzed illicit drug substances.

Q. And those weren't actual exhibits; they were lab samples?

A. They were training samples.

Q. And then upon completion of that, then you graduated or

were certified by DEA; is that correct?
A. That's correct.
Q. And you left -- I believe it was in Quantico, Virginia, and went to the laboratory in San Francisco.
A. Our training was at the Western Laboratory, so I did not receive that training in Quantico.
Q. Okay. And you also have other training -- could you summarize that -- with DEA. I believe crime lab training.
A. Yes. I went through a week-long clan. laboratory training at Quantico, Virginia, under another senior forensic chemist and several other chemists as well that taught us about mostly clan. laboratory manufacturing of illicit drug substances.

And I also underwent approximately a 7-to-10-day course at our laboratory under a senior forensic chemist that went further into clandestine laboratory manufacturing.
Q. Okay. Thank you, for the record. "Clan. lab" is short for clandestine laboratory; is that correct?
A. Yes.
Q. Okay. And you achieved your certification with DEA when?
A. I completed the training at the end of February, 2009.
Q. All right. And since that time, could you approximate how many controlled substance exhibits you have examined?
A. I have examined 408 exhibits.
Q. And each exhibit involves more than one test. Is that accurate?

A. Yes.
Q. I think it depends upon what the suspected controlled substance is; is that correct?
A. That's correct.
Q. And how many tests would you perform on average?
A. Depending on the exhibit, anywhere from three to six tests.
Q. All right. And what about methamphetamine specifically? How many tests are required there or do you conduct?
A. Generally for methamphetamine, four to six tests.
Q. All right. And have you ever testified in court as an expert in your field of forensic chemist -- chemistry?
A. I have.
Q. All right. And how many occasions?
A. Twice.
Q. Did you test the suspected controlled substances in this case?
A. Yes, I did.
Q. And how many exhibits were there?
A. There was one exhibit.
Q. Okay. Were there exhibits within the exhibit?
A. Yes. We call those "units," and there were 12 units.
Q. All right. And what tests did you employ in conducting your analyses?
A. Okay. The first test that I employed is a Marquis color test on all 12 units.

The second test is a gas chromatography --

Q. Before we go away from the Marquis test, what were the results of that and what did that tell you?

A. The Marquis test indicated that I was dealing with phenethylamine.

MR. EDELMAN: I'm going to object. Lack of foundation as to what this test is, your Honor.

THE COURT: Well, the Rules of Evidence don't apply in a 702 hearing. I think that's something you can explore on cross-examination.

BY MR. BOMA:

Q. All right, ma'am. If you would, could you summarize what a Marquis test is and then what the results were in this instance?

A. Sure. The Marquis color test is just a chemical reaction that forms a color compound with what it is reacting with. And in this case the Marquis color test formed a compound with a phenethylamine, which is a category which methamphetamine is under. And it formed an orange to orange/brown color with the sample as well as with my standard.

Q. All right. And when you're referring to your standard, what are -- what does that mean?

A. We have verified and authenticated standards in our laboratory. And I used a methamphetamine hydrochloride standard to compare my color results with.

Q. Okay. And does that test help you narrow down the field, if you will, as to what type of substance you may be dealing with?

A. Yes. It helps me to categorize what type of substance is in these units that I am testing.

Q. All right. And there were 12 units in the drug exhibit in this case; is that correct?

A. That's correct.

Q. And what tests did you conduct on each unit?

A. First was the Marquis color test on each unit, which tested to an orange to orange/brown color, showing that it was some type of phenethylamine.

And then I next performed the gas chromatography/mass spectrometry screen on all 12 units as well.

Q. All right and did you extract a small sample to conduct those tests on the units?

A. I extracted a random sample from each of those units.

Q. All right. And what were the results of that testing?

A. I found methamphetamine to be in each of the units.

Q. All right. And what did you do next with respect to the units?

A. I formed a composite after I had identified -- identified methamphetamine in all the units. And that composite is a homogenous representative sample of what the exhibit is.

So what I did was I put together all the contents of

the units. I did what we call "cone and quartering," which is you pour out all the evidence on to what we have as bench paper or lab paper, which is similar to butcher paper. Basically, it's a clean, fresh sheet every time. And we put all the evidence on to the sheets and pour it so that it's in the shape of an upside down cone. And they we proceed to section it in quarter angles so that there are four quadrants. And we take opposite quarters of this cone and we separate it out. And then we continue to cone and quarter the sample until the sample is small enough for me to grind it down all the way and pass that composite portion to make -- well, I pass the composite portion through a 20-mesh sieve to make sure that the sample is completely homogenized.

Q. All right. And at some point, you weighed the drugs in question. When was that done?

A. I weighed that before I started any of my screen analyses.

Q. All right. And net weight on your report refers to the quantity of suspected drugs without packaging; is that correct?

A. That's correct.

Q. All right. And your report states that that's plus or minus one gram?

A. That's correct.

Q. And why would it be plus or minus one gram?

A. There is always an associated uncertainty with weighings. There is an uncertainty of the balance as well as the weighing

process itself and depending on how many times I weigh the exhibit. In this case, I weighed it several times; but with the weighings that I did, the calculation came out to plus or minus 1.

Q. And it was 5,319 grams? Is that the net weight you arrived at?

A. That's the net weight that I reported. That's correct. That's correct.

Q. Now, back to -- You were coning and quartering a homogenous sample. After you did that, how did you withdraw samples, if you will, from the composite exhibit?

A. The composite was placed into a laboratory Ziploc plastic bag. And from that bag, I would randomly sample for the next analysis.

Q. All right. And how did you randomly sample?

A. I would just mix it up with my clean spatula and sample what I needed for the next test.

Q. All right. And how many samples did you extract from the homogenous exhibit?

A. Four.

Q. All right. And what tests did you conduct at that point?

A. The first one on the composite is the gas chromatography infrared detection.

Q. All right. And what were the results?

A. I found there to be methamphetamine.

Q. All right. And did you do additional tests?
A. Yes. The next test after that was the gas chromatography flame ionization detector, which is our isomer technique in which we find which isomer the methamphetamine is; and I found that it was a mixture of D and L non-racemic methamphetamine.
Q. Could you put that in lay person's terms, what that means?
A. Yes. There are two different forms of methamphetamine, and they're isomers of one another. So there is -- their molecular layout is slightly different from one another, but both are controlled. And there is also the racemic mixture, which is equal amounts of D and L methamphetamine; but all isomers of methamphetamine are controlled.
Q. All right. And did you conduct any further tests?
A. Yes. The next test I conducted was the infrared spectroscopy attenuated total reflectance, ATR. It's a solid-phase infrared technique, where I place a random sample of that composite onto the instrument and an infrared light is shone on to the sample.
Q. And what were the results of that test?
A. I found that there is methamphetamine hydrochloride in the sample.
Q. All right. And what did you do next?
A. The last test that I performed on the composite is a quantitation method. And it was performed on the high performance liquid chromatography instrument, also called HPLC.

Q. All right. And how is that test conducted and what were your results?

A. The test is conducted per our laboratory procedures on at least 100 milligrams of sample. In this case, I took more than a hundred milligrams of my composite, and I used that portion to find that there was 96.3 percent purity of methamphetamine.

Q. All right. And then with that result you can convert a net weight of the drugs to a hundred percent purity. That's a mathematical computation, is it not?

A. That's correct.

Q. All right. And the 96.3 percent purity that you found: There is a possible error of plus or minus 3.5 percent?

A. Yes.

Q. All right. And what causes that?

A. It actually follows a guideline, includes all sorts of uncertainties that are possible with the instrument, with the weighing, with the method that we use to quantitate; and that is the number once you use the formula that comes up.

Q. All right. In your opinion as an expert in the field of forensic chemistry, did you have sufficient facts to conduct the tests that you performed?

A. Yes.

Q. All right. Are you familiar with ASCLD/LAB?

A. I am.

Q. What is that, ma'am?

A. ASCLD/LAB is an accrediting body made up of laboratory -- crime laboratory directors as well as forensic science managers that are committed to promoting forensic science innovations and standards.

Q. All right. And ASCLD is the acronym that this organization is referred to as?

A. That's correct.

Q. ASCLD?

A. Yes.

Q. And the LAB portion: That is a separate or a subset of ASCLD certification?

A. That is their accrediting body subset.

Q. What is involved in ASCLD/LAB accreditation? Summarize that.

A. Sure. They -- Basically, they will make sure that you are following the appropriate guidelines and that we are implementing those guidelines in our course of work.

Q. And were the methodologies that you testified to -- were those consistent with ASCLD/LAB, specifically ISO 17025?

A. Yes.

Q. All right. And I believe in several instances you went above and beyond what's required by the ASCLD/LAB 17025?

A. Yes. I went above and beyond what our procedures call for.

Q. Okay. And in which instances did you go above and beyond, if you will?

A. In our sampling procedure, I am required to sample at least nine of the 12 units; but in my case, I screened all 12 units.

Q. All right. And I believe the sample you took -- You're required to take a hundred milligrams, and you used more than that?

A. Yes.

Q. And do you recall how much was in that sample roughly?

A. Roughly 115 milligrams.

Q. All right. And why would you take an larger sample? Does that improve competence level?

A. It could.

Q. All right. Is your DEA laboratory in San Francisco accredited by ASCLD/LAB in accordance with ISO 17025?

A. Yes, it is.

Q. When was the last accreditation?

A. Accreditation was issued February of 2010; and we officially received the final accreditation in August, 2010.

Q. All right. And I believe that all the DEA laboratories in the country were examined at or about the same time during that time frame?

A. That's correct.

Q. And the certificates or accreditation certificates issued at the same time?

A. That's correct.

Q. And how long is that accreditation -- how long did it last,

once you're accredited?
A. We are accredited for five years.
Q. And is there an annual update, if you will, or inspection?
A. Yes, they do an annual surveillance visit to our laboratory.
Q. All right. And when did you conduct the testing of the controlled substances in this case?
A. I opened the exhibit on November 8, 2010; and I completed the analyses on November 10, 2010.
Q. All right. So the laboratory was ASCLD certified, LAB certified at that point?
A. Yes.
Q. Could you describe how drugs are received in the lab and what your procedures are in handling suspected drug exhibits?
A. Yes. Exhibits are normally either sent to our laboratory via trackable mail systems or by hand through an agent; and only a supervisor or evidence technician may receive the evidence, as well as our laboratory director and our associate laboratory director. Then after we receive the evidence, the evidence is evidence is stored in our main vault, which only our supervisors and evidence technicians, upper management, has access to.

When I want an exhibit, I will check it out from an evidence technician, in which case it's in my possession.
Q. All right. And that's what occurred in this instance?

A. Yes.
Q. And when you received the exhibit from your vault, is it sealed as -- by someone?
A. Yes.
Q. All right. And I assume that's normally an agent or task force officer who submitted it; is that correct?
A. Generally.
Q. All right. And what procedure do you employ once you check out -- You've already described the testing; but in terms of the drugs themselves, what do you do in terms of the packaging and then when you're done?
A. Well, I remove a strip from the bottom of each of the heat seals that I receive, and I keep those heat strips with the evidence seals. I remove all the contents of each of the evidence envelopes, or we call them "heat seals"; and then I proceed to do my analyses on all of the contents of the units.

And then in this case, I separated all the contents from its original packaging.

I then at the end of my analyses -- I package the original evidence, the contents of what was remaining after my analyses, into laboratory Ziploc plastic bags, and then I also packaged all of the original packaging into Ziploc plastic bags and put them back into the original heat seals that I received them in.
Q. All right. And the agent's initials are on the package

when it arrives. Are your initials on it and a date once you reseal it?

A. Once I reseal it, my initials are, yes.

MR. BOMA: Your Honor, if I might have a moment.

THE COURT: You may.

MR. BOMA: No further questions. Thank you, ma'am.

THE COURT: Cross-examination?

MR. EDELMAN: Yes.

CROSS-EXAMINATION

BY MR. EDELMAN:

Q. Ms. Chan, you indicated that, I believe, you were qualified to perform these tests; is that correct?

A. That's correct.

Q. And that you were trained by other individuals?

A. That's correct.

Q. Can you tell me who those individuals were and what their accreditation was to train you?

A. For the six-month chemist program training, you're referring to?

Q. Whoever trained you.

A. As far as the Drug Enforcement Administration, I was trained by a senior forensic chemist at our laboratory; so he also works at our accredited laboratory.

Q. And who is that?

A. That is Senior Forensic Chemist John Chappell.

Q. Is that J-O-H-N?
A. That's correct.
Q. And who accredited him to teach you?
A. Laboratories are accredited. People are not.
Q. Okay. So the laboratory that he worked for was accredited?
A. That's correct.
Q. There is no evidence of any kind that you have that he was even qualified to train you; is that correct?
A. I have seen his resumé before.
Q. Okay. And nobody from -- I think you said it was AS LAB?
A. ASCLD.
Q. I'm sorry?
A. ASCLD/LAB.
Q. -- ASCLD/LAB certified him?
A. Not that I'm aware of.
Q. Did he ever have any proficiency, any evidence of proficiency -- proficiency testing that he could perform the methods and procedures that he trained you on?
A. All chemists at DEA are proficiency-tested.
Q. Okay. But the question was do you have any evidence that he was?
A. We have evidence that goes out to the entire lab when somebody completes a proficiency testing.
Q. Okay. You have that procedure, but you do not know -- you do not know if it was followed with regards to Mr. Chappell; is

that correct?
A. Not specifically.
Q. Okay. Who else trained you?
A. He did the bulk of the training.
Q. Okay. And on what equipment did he train you to use?
A. All of the instrumentation that is in our laboratory.
Q. Well, ma'am, unfortunately I haven't had an opportunity to visit your lab; so could you please identify that equipment?
A. Sure. It is the -- I'm going to use acronyms. Is that okay? The GC mass spec, GCMS.
Q. Could you please identify the equipment by its full name, and then I think you can use the abbreviations.
A. The gas chromatography mass spectrometer, GCMS.
Q. Let me stop you if I can with each one.

How many of those do you have at the DEA laboratory currently?
A. Approximately 10.
Q. Okay. And that's called a GCS?
A. GCMS.
Q. MS. Okay. And are they identified in any way?
A. Yes. They all have unique lab numbers.
Q. And do they have names?
A. Yes.
Q. Do you want to tell me what those names are?
A. I could try to recall.

Q. Okay. Well, I'll tell you what: Let me make it easy for you. Which ones did you use in this case?
A. I used Fido.
Q. Okay. Any others?
A. Not GC mass specs.
Q. Can you tell me what other units equipment that you used in this -- in the tests for this case?
A. Right. A gas chromatographer flame ionization detector.
Q. Do you have an abbreviation for that?
A. GCFID.
Q. GCFID?
A. That's correct.
Q. How many do you have at your lab?
A. I would say approximately 10, for those.
Q. 10. And which ones did you use in the performance of this -- in this case, the suspected drugs?
A. I believe I used Franklin.
Q. Franklin. Okay. Any other equipment?
A. Yes. The infrared spectrometer.
Q. Is that IRS?
A. That's IR.
Q. IR. Okay. And how many do you have in your lab?
A. I would say nine to 10.
Q. Okay. And which one did you use in this?
A. Perseus.

Q. Is that the flying horse?

A. Yes, I think.

Q. All right. And what other equipment did you?

A. I'm sorry? What was that?

Q. What other equipment did you use?

A. In this exhibit?

Q. In this case, yes, for this exhibit that you're opining is methamphetamine, I think you said, HCl.

A. Well, another one is gas chromatography infrared detection, GCIRD.

Q. And how many of those do you have in your laboratory?

A. Two.

Q. And you used which one in this --

A. Shemp.

Q. Shemp. Okay. S-H-E-M-P?

A. That's correct.

Q. The other one: Is it Moe or Curly?

A. It's Curly.

Q. Okay. Anything else?

A. I also used the HMLC, high performance liquid chromatography.

Q. How many do you have in your lab?

A. I would say approximately 10 to 12.

Q. And what was this one's name?

A. Adi.

Q. A-D-D-I?
A. A-D-I.
Q. Okay. Anything else?
A. As far as instruments? I believe that was it for this exhibits.
Q. Okay. Any other types of scientific tests or procedures that you used? And I think you said the Marquis test.
A. That's correct.
Q. And the Marquis test is a presumptive test, is it not?
A. Yes, it is.
Q. And it's a presumptive test where you take some liquid and you drop it on the suspected drugs; right?
A. That's correct.
Q. And it turns, you said, orange/brown?
A. For a phenethylamine, yes.
Q. Okay. And what color were the substances that you tested, the 12 different units?
A. They ranged from a white to a yellowish/white color.
Q. Okay. So each bag had different colors to it?
A. Not all of them were different in appearance. Some were and some were not.
Q. All right. Can you tell me how many were not white?
A. Not off the top of my head, no.
Q. Do you have any records that might help you?
A. Yes.

MR. EDELMAN: Your Honor, I have some exhibits that I've prepared. May I -- they're marked. May I have your courtroom deputy show them to the witness?

THE COURT: Sure.

BY MR. EDELMAN:

Q. I've handed you a book with some exhibits marked 1 through 5. No. 2, Exhibit 2, is the Government's 702 submission, and they're numbered.

Now, can you -- beginning on page 5 -- excuse me -- 6 appears to be something from a laboratory report. Can you take a look at those pages?

Well, first tell me what pages 6 through 98 appear to be?

A. Through 98?

Q. They're numbered -- well, let me just make that clear. There are three numbers on this paper. There is one -- on this exhibit. One going across the top that says page 1 through 93 on the handwritten marker No. 6, which is Bates stamped 35. Do you see that?

A. Yes.

Q. So I think it would be best if we -- we could identify each of these by the Bates stamp numbers 000035 and just use the last two or three digits or actually -- well, the last two digits until we get over a hundred.

A. Okay.

Q. So we start at Bates Stamp 35?
A. Okay.
Q. Can you take a look at those documents and tell me what you think they are, what they are?
A. Well, the one Bates stamped 35 is my laboratory report cover.
Q. Okay. And did you prepare Bates Stamp 35 -- well, did you prepare it?
A. Yes.
Q. Tell me which ones, which of these documents, you either prepared or had prepared?
MR. BOMA: I'm going to object to the form. There are 98 pages. If Counsel could identify what pages he's referring to.
THE COURT: The objection is to the form of the question that it's vague and ambiguous. Response?
MR. EDELMAN: I'm just asking her -- I think I asked to identify the documents that are in the exhibit to see if she prepared them.
THE COURT: All right. You've got 98 pages here, it looks like, somewhere between Bates stamp 35 and 127. Do you want her to go page by page and say whether she prepared that?
MR. EDELMAN: Not necessarily on the record. If she'd like to take some time to go through them . . . .
THE COURT: Why don't we take a recess so she can look

through them.

MR. BOMA: Your Honor, if I might, I'd like to object on the grounds of relevance. I don't see any relevance. She identified the report she prepared, but some of these are not authored by her.

THE COURT: Response?

MR. EDELMAN: I'm just asking her to identify the ones she prepared.

THE COURT: I know what you're asking. The objection is to relevance. Why does it matter which ones she prepared?

MR. EDELMAN: Because I think she wanted to refresh her memory on one of my last questions. I can't remember the question, your Honor.

I can go forward, if you'd like.

THE COURT: No, it's not a question of going forward. The objection here is relevance. What I understand that objection to be is it doesn't matter whether she prepared all these pages or which pages she prepared. Why does it matter?

MR. EDELMAN: It may not if it's admissible as a 702 submission from the lab.

THE COURT: Well, it's up to you as to whether or not you think her individual preparation matters. Just tell me why you think that matters.

MR. EDELMAN: It goes to qualifications and methodology, your Honor.

THE COURT: All right. Then we'll proceed with a recess so that she can identify which pages she prepared and which pages someone else prepared. We'll stand in recess.

MR. BOMA: Your Honor, she's under cross; but I'd like to have the opportunity to just show her the documents in question.

THE COURT: You may not. She may sit at the witness stand and go over these documents. She doesn't need any coaching here. She just needs to be able to go through the document and figure out what she prepared.

MR. BOMA: Yes, your Honor. I just want to hand her the notebook or have the courtroom deputy.

THE COURT: She has the notebook in front of her, sir.

MR. BOMA: Yes, ma'am.

(Recess at 9:50 a.m.)

(Reconvened at 10:04 a.m.)

THE COURT: Please be seated.

Mr. Edelman, you may proceed.

MR. BROWN: Your Honor, may I address the Court?

THE COURT: Yes.

MR. BROWN: I just wanted, if possible, to enter my appearance on behalf of Mr. Celaya. Bruce Brown.

THE COURT: Thank you.

MR. EDELMAN: May I proceed?

THE COURT: You may.

MR. EDELMAN: Thank you.

BY MR. EDELMAN:

Q. Ms. Chan, before we recessed, I asked you to look over Exhibit 2, beginning on Bates stamped -- I think it was 35. Did you have a chance to do that?

A. Yes.

Q. Can you tell me which of these documents you had some -- well, that you prepared?

A. Stamp 35 through 38, then stamp 43 through 103.

Q. Okay. And I think when I -- before I gave you this document, this exhibit, I asked if Chappell was some -- you didn't know if Chappell was accredited and by whom?

THE COURT: Are you talking about Mr. Chappell?

MR. EDELMAN: Yes. Yes. Mr. Chappell.

MR. BOMA: Objection. Asked and answered.

THE COURT: Overruled.

BY MR. EDELMAN:

Q. Is that correct, ma'am?

A. Again, chemists themselves are not accredited.

Q. Okay. Then maybe I asked you. If not, do you have any evidence that he had some sort of proficiency testing or accreditation so that he can -- so that we would know if he was qualified to teach you?

A. All chemists are proficiency-tested, and our laboratory would have that evidence.

Q. Okay. But you don't?
A. I don't.
Q. Okay. And have you been proficiency-tested?
A. Yes, I have.
Q. And did you bring any documentation to substantiate that?
A. No, I did not.
Q. Okay. Now, when you're doing all these tests that you testified to on direct, is it wise and standard to keep notes?
A. Yes.
Q. And you kept notes, did you not?
A. Yes, I did.
Q. And you wrote them down?
A. Yes.
Q. And why do you do that?
A. So that there is a record of what I did and so that, if necessary, somebody else could replicate my work.
Q. Okay. Is that ever done to do random proficiency testing or checking your work?
A. Yes.
Q. Okay. Excuse me. I'm not a chemist, so I may not be familiar with all of your technical terms.

Did you prepare, as I think you said -- are those notes -- excuse me -- set forth in Exhibit 2 Bates stamped 43, 44, and 45?
A. Yes.

Q. Are those -- is that the actual size of your notes, or have they been reduced down?
A. They've been reduced down slightly.
Q. Okay. So this is not a duplicate necessarily of your notes? This is a smaller font, for lack of a better term?
A. Yes.
Q. Okay. Did you bring the original size notes?
A. No, I did not.
Q. Okay. Can you tell me --
MR. EDELMAN: Madam clerk, would you mind giving that to the witness.
Judge, I have one for you, too, if you'd like to see the larger one.
THE COURT: Thank you. I think I can read what's been given to me.
MR. EDELMAN: Okay. May I approach the witness and point to some things and ask her questions about it?
THE COURT: No, you may not. You may direct her.
MR. EDELMAN: I beg your pardon? Okay.
BY MR. EDELMAN:
Q. Please take a look at Bates stamp 44. Do you see that? I think it's page 2 of that.
A. Yes.
Q. Okay. Do you have a marker with you, by any chance?
A. No.

MR. EDELMAN: May I provide the witness with a marker?

THE COURT: I'm sure Ms. Bush can do that, if you'd like.

MR. EDELMAN: Thank you.

BY MR. EDELMAN:

Q. See that bottom group of numbers on the right-hand side? Starts of a with "VIALI"?

A. Yes.

Q. I think it says, "Sampling 1"?

A. Yes.

Q. What is that number?

A. 20.8408.

Q. 20 -- You can read that?

A. It's my handwriting. Yes.

Q. Okay. Would you circle that, please.

A. Circle the number on this, or on your larger print?

Q. On both so that you don't obliterate it.

A. Just the 20?

Q. Just the whole area there. All those numbers.

A. All of them. Okay.

Q. Okay. Now if someone was going to check your work without talking to you, they wouldn't be able to read that, would they?

A. I'm sorry. What was the question?

Q. If someone was checking your work, as you indicated they do from time to time, or a lawyer was going to be checking the

work, or a chemist independently, without talking to you, they wouldn't be able to read that, would they?

A. I'm not sure. I'm not the --

Q. Okay. What's the importance of that number?

A. Those numbers are actually just samplings I took out for a specific program that we do at DEA that requires us to send a sampling to a different chemist.

Q. Okay. But it's important because it's on your notes, is it not?

A. It's not important to my analyses, no.

Q. Okay. All right. Now, you did the Marquis test, did you not, of the 12 different units?

A. I did.

Q. And where in your report does it identify each unit and each Marquis test?

A. Right under "qualitative," it says, "Marquis color test."

Q. On what page?

A. On Bates Stamp 44. Same page.

Q. 34, did you say, or --

A. 44.

Q. Oh, I'm sorry. 44. And where is that?

A. Where it says "qualitative," then followed by "Marquis color test," the third line says, "separate samplings of all units 1 through 12."

Q. All right and how did you number these? How can you

identify the Marquis of each of the units?

A. By my description of the evidence on the prior page.

Q. Okay. And when you received these 12 units, did they have separate numbers on them?

A. No.

Q. Did you mark separate numbers on each of these units?

A. I do not believe that I did.

Q. So you arbitrarily took each one of these units, wrote down a number 1 through 12, did your Marquis tests, and marked down your objective observation of the color?

A. That's correct.

Q. Okay. Would you take a look at color photo 6, please.

Do you see -- can you tell me what 6 is, if you know?

A. 6 seems to be a photograph.

Q. Of what?

A. Of the exhibits -- of the units for this exhibit. Sorry.

Q. And first of all, have you ever seen the units set up in that way?

A. Yes.

Q. Okay. And where was that?

A. In our laboratory.

Q. So this table is in your laboratory?

A. No, this is not in our laboratory that I'm aware of.

Q. Where did you see it, then?

A. I've seen these heat seals with those is packagings.

This photo was not taken by me.

Q. Okay. Were you present when it was taken?

A. No.

Q. Did you see the drugs laid out in that way? Laid out on a table and look that way?

A. No. I was not there.

Q. So there is no way for you to know if these particular samples are the same ones you took and did a Marquis test on?

A. There is not.

MR. BOMA: Objection, your Honor. This is a chain of custody issue from the way the question sounds. Nothing to do with 702.

THE COURT: I don't know what the nature of your objection is.

MR. BOMA: Well, your Honor, it appears that Counsel is questioning whether or not these are the exhibits that arrived at the lab and were analyzed by Ms. Chan. And from the Government's point of view that's a chain of custody issue, nothing to do with the 702.

THE COURT: Noted for the record. Thanks.

BY MR. EDELMAN:

Q. So when you received -- Well, do you say today that this -- these packages -- they're green and there is some yellow/white substances in packages with a red strip going down some of the packages or across some of the packages. Are you saying that

those are the materials in this case that you received?
A. It's possible.
Q. Okay. But you're not sure?
A. No.
Q. And when you received the materials in these 12 units, did you -- What did they look like? Did they look like the materials or the packages in Exhibit 6?
A. Yes. They appear similar.
Q. Do you believe, besides possibility, that they're the same? Do you think probably they are?
A. I would say probably.
Q. Okay. Now, none of these are marked with numbers; correct?
A. That's correct.
Q. Did you ever take these packages and identify them on the packages with numbers?
A. All the packages have a sequential numbering sticker that's not shown here, but our vault does sequentially number the seals.
Q. And what were the numbers?
A. 1 through 8.
Q. Okay. But you tested 12?
A. Right. There is 12 individual units within these eight heat seals.
Q. So the eight packages were identified 1 through 8. Were the individual units numbered?

A. No, they were not.
Q. Did you ever number them?
A. Not on the packaging, no, I did not.
Q. So any subsequent independent testing of these individual units cannot be done; is that correct?
A. On the individual units, no.
Q. And that's primarily because you took all of them after you did the Marquis test and put them into one big pile?
A. That's not correct.
Q. What did you do with them?
A. I composited it after the mass spec screen.
Q. Okay. And where did you do that on this Exhibit 2?
A. Where?
Q. Yeah .where is it on page 44, 45, or 43?
A. It's under the evidence sampling plan, how I formed the composits.
Q. Okay. Did you identify each of the 12 units?
A. I'm sorry. I just -- I don't --
Q. Did you identify the 12 units in some way before you performed the second test on all of them?
A. For myself, yes.
Q. Where did you do that?
A. I did it on the test tubes that I put the samplings into.
Q. And there is no photographs or note --
A. We're not required to.

Q. And who says that "we're not required"?
A. It's not in our procedures and manuals to do so.
Q. Okay. And the procedures and the manuals are prepared by whom?
A. By DEA.
Q. And DEA -- have those manuals and procedures, are they in conformance with the ISO procedures and -- well, and methods?
A. Yes.
Q. So ISO and -- I think you said some LAB.
A. ASCLD/LAB.
Q. Thanks. Thank you.
-- does not require that.
A. No.
Q. You're sure?
A. I'm sure that we follow those guidelines, and I'm sure that I followed the DEA guidelines.
Q. Well, let's go back to ASCLD. Have you read their requirements?
A. I've seen it.
Q. When you say you've seen it, have you looked through the different standards or requirements specifically addressing my question?
A. No.
MR. EDELMAN: Well, I move for admission of 2 and 6, your Honor. At least the pages that she's identified that she

prepared.

THE COURT: Well, we need to have a clear record. So what is it that you would like the Court to consider?

MR. EDELMAN: First of all, the photograph in Exhibit 6.

THE COURT: All right. Is there any objection?

MR. BOMA: No, your Honor.

THE COURT: Okay. I'll consider that.

MR. EDELMAN: And I think she testified that 35 to 38.

BY MR. EDELMAN:

Q. -- I think you said. Is that correct?

A. Yes.

Q. And then which numbers?

A. And then 43 through 103.

MR. EDELMAN: Okay. I'd move for admission of those.

THE COURT: And those are the Bates stamp numbers in Exhibit 2; correct?

MR. EDELMAN: Yes.

THE COURT: All right. Any objection to me considering those?

MR. BOMA: None, your Honor.

THE COURT: Okay. I'll consider those.

MR. EDELMAN: Thank you.

BY MR. EDELMAN:

Q. Can you tell me what Bates Stamp 47 of Exhibit 2 is?

A. Yes. Those are photographs that I took of the exhibit after I checked them out of the vault.

Q. Where are the photographs?

A. Where? These are copies of them.

Q. Black and white copies on a copy machine?

A. I didn't make these copies.

Q. All right. So your report and the documents that you've identified as being prepared by you, you didn't provide to your -- excuse me -- the lawyer for the Government to submit to the Court?

A. My report in its entirety was submitted, and these just happened to be black and white copies of the photos.

Q. Your lab has, does it not, equipment to make better copies?

A. Possibly. I don't know. I don't do the copying.

Q. Okay. You've heard of color copying and photographs?

A. I've heard of it.

Q. Okay. And if someone was to check over your report, as you indicated that could be done randomly, such as in this case or an expert from my -- that has been appointed by the Court, do you believe that anybody can make out these -- the two photographs on 47 and 48?

A. Not these copies, no.

Q. Okay. Have you provided the actual copies -- color copies or photographic copies of these four photographs?

A. I personally have not.

Q. Okay. Has anybody that you're aware of?
A. I am not aware.
Q. Okay. Okay. Now, if I understood you correctly, you did the Marquis test and it came out brown/orange?
A. Orange/brown.
Q. Is there a difference?
A. It depends on how I write it. Yes, it does make a difference.
Q. It does. Is that somewhere in the ISO ASCLD? Did I say it right?
A. ASCLD/LAB.
Q. ASCLD/LAB standards?
A. It's not. I have not seen it personally in those standards.
Q. And is it in the DEA standards of writing the difference between orange/brown and brown/orange?
A. This was part of my training, yes.
Q. But do you know if it's in the DEA procedures manual?
A. I do not recall.
Q. Okay. Tell me what the difference between orange/brown and brown/orange is.
A. The difference is that the latter color is the more -- is slightly more dominant and the former color is the hue or an under -- you know, it's -- so if I wrote "brown/orange," it's more orange than brown. If I wrote "orange/brown," it's more

brownish than orange.
Q. Okay. And this is subjective?
A. Yes, absolutely.
Q. Did you ever go to a paint store and you get paint strips with all these different colors?
A. Personally, no.
Q. Okay. Have you ever -- do you compare your brown/orange, orange/brown to some standard?
A. Yes, I do.
Q. And where is that standard?
A. The information from the test, or the standard itself?
Q. Well, the color, the color that you might compare it to to decide whether it's brown/orange or orange/brown?
A. I do the tests on the standard at the same time that I do the samples.
Q. What I'm getting to is how do you determine brown/orange or orange/brown? Do you compare it to a sheet of colors, different gradations of orange/brown and brown/orange?
A. I believe it's the same as something you saying is blue and me saying it's light blue. It's subjective.
Q. Any other controlled substances turn that same color?
A. A class of phenethylamines.
Q. And they're controlled substances?
A. Phenethylamines? Yes.
Q. And what is the more common -- is there a more common known

name for phenethylamines?
A. No. It's a drug classification group.
Q. Okay. And is there any other substance that is a white crystalline substance or a white substance that would turn orange/brown, brown/orange?
A. Not in my experience.
Q. And there are about 56,000 white substances in our society; isn't that correct?
A. I don't know.
Q. There are a lot?
A. Yes.
Q. Correct? There is baking powder, there is detergent -- did I say baking powder? -- salt, sugar, flour?
A. Yes.
Q. And some that we may not even know and other substances, chemicals that are not controlled substances. Do you know if the Marquis test was ever combined with those substances that might come up with a brown/orange, orange/brown?
A. I personally do not.
Q. Okay. Now, the machines, the equipment that you used -- Well, first of all, describe your lab, if you could, please. Is it a locked lab?
A. Yes. You have to have key card access.
Q. And is it environmentally controlled?
A. As in climate?

Q. Climate, humidity, dust?
A. It's climate controlled. As far as dust controlled, I don't believe so.
Q. Well, filtered? Is the air filtered?
A. I'm not sure.
Q. So did the materials that you tested -- and I think you've said you combined them -- right -- at some point? Poured them on a butcher sheet, a piece of paper used by butchers, and you made a reverse cone?
A. Okay.
Q. A cone with the wider side down?
A. Yes.
Q. And did any dust come up?
A. I do this in a fume hood; so actually, it sucks upward as I complete my coning/quartering.
Q. Okay. And is that fume hood ever reviewed for its efficiency?
A. I have seen our safety personnel perform tests actually often.
Q. And do you know the kinds of tests?
A. I personally do not know which tests.
Q. And do you know where the results of those tests are?
A. Exactly where? No.
Q. Have you seen them?
A. No.

Q. The different equipment that you used -- Fido: When was the last time that was calibrated or tested with a known sample?

A. Standards are run frequently in our lab, depending on when they're needed. I did not check as to when the last time a standard was run on Fido. However, all our instruments are maintained monthly.

Q. And how do you know that?

A. It's in a log book.

Q. And did you have -- is there a log book that you provided in Exhibit 2 in the pages --

A. No.

Q. Did you look at the log book?

A. Yes, I did.

Q. Before you performed your testings?

A. Yes.

Q. And when was Fido last tested for accuracy?

A. "Last" as in most recently?

Q. Excuse me. Before you performed the tests in this case.

A. In the beginning of November.

Q. Is that the 1st?

A. I believe it was.

Q. Okay. And then your next identified -- what's the standard say, by the way?

A. I'm sorry. What was that?

Q. What does the standard in your manual procedures -- DEA procedures book suggest when you test the equipment before you perform a test in a drug-related criminal case?

A. The standards are run on our instrument as needed.

Q. Okay. Let me rephrase that. You have a manual?

A. There is a manual.

Q. When does the manual say you have to run the known in the equipment before you run an unknown?

A. The -- I'm actually not sure exactly what the manual says for a time frame.

Q. Okay. So it could have been a day before, it could have been six months before?

A. For what the manual says?

Q. Right.

A. The manual does not say that you need to run a positive control before your sample.

Q. What about for Franklin? When was the last a time known standard was tested before you did your test? I think it was November 8 through the 10th.

A. I know that I ran my own standards on Franklin two weeks prior, I believe.

Q. Okay. What about Perseus? When was that done? The standard?

A. I'm not sure.

Q. Do you know if it was done?

A. Yes.
Q. By whom?
A. By whom? I'm not sure.
Q. But you don't know when?
A. No, I do not.
Q. Do you know what the ISO blank lab -- that group of standards -- when they say you're supposed to run these standards?

I've got to write that down.

A. I believe I have read somewhere that it says that it should be run before your samples.
Q. It doesn't say when?
A. No.
Q. You don't take that as right before?
A. No.
Q. How do you know that the machinery and the equipment before you ran your unknown was properly cleaned?
A. Cleaned?
Q. Clean --
A. It's a closed system. Our instruments are closed systems.
Q. What does that mean?
A. That means that once the sample gets into the instrument, it's actually a closed system, so nothing else will go in with it.
Q. Okay. Well, how do you get rid of the sample that you did

before you tested before to make sure --

A. We run blanks.

Q. Okay. And on your Exhibit 43 to 44, is there some indication of the blanks being run?

A. Yes.

Q. For all this equipment?

A. Yes.

Q. Okay. In your Exhibit 2, I notice some documents that look like graphs. Graphs. For lack of a better word, it looks like the stock market, when you see the stock market going up and down.

A. Okay.

Q. What do you call those?

A. They're chromatograms.

Q. Thanks. In the top it has the name -- there is a number.

A. Okay.

Q. There is a number of some piece of equipment; isn't that correct?

A. You mean the number that's associated with the instrument?

Q. Yes.

A. Yes.

Q. And some of them, you've associated Fido?

A. Okay.

Q. On others, I don't see. Maybe I just missed it. I haven't seen Franklin and --

A. It's there.

Q. It's there?

A. Yep.

Q. Okay. Shemp? And Adi? They're all there?

A. To my knowledge.

Q. Okay.

A. Yes.

Yes.

Yes.

Q. Okay. I see Fido. I see Fido's name starting on Bates Stamp 49.

A. Okay.

Q. And it seems to go on for quite a while.

A. Okay.

Q. To Bates Stamp 84.

Can you tell me where the other names are on Bates Stamp 85, if they would be found?

A. The instrument number for Shemp, the IRD is next to my operator name DEA 365 -- Oh, I'm not sure what that says, to be honest. It would be more legible in my original copy.

Q. And are these all shrunk down?

A. Yeah.

Q. Okay. Is that a yes?

A. Yes. Sorry.

Q. And you have a number that I could see. It says, "A Chan

DEA," and then there is a number; but I don't see next to that Shemp, Perseus, or Adi.

A. That one is Shemp.

Q. And how do you know?

A. How do I know? Because the instrument itself is labeled.

Q. The instrument is labeled and has a number?

A. Right.

Q. HPIRD?

A. No. That's the instrument itself. It's an IRD. So the instrument number that our laboratory assigns is the one that's next to my operator name, and the name of the instrument Shemp is just arbitrary.

Q. Okay. So it's difficult from these documents, as an example numbered Bates Stamp 85, to connect your instruments with the names you have given them other than you know it?

A. Yes.

Q. Okay. The GCIRD -- that's Shemp. That's the next one. What does your -- what do your regulations call for in running a known before you run your unknown, the time frame?

A. There is no stated time frame that I'm aware of.

Q. Do you know if there was any known that was tested on Shemp before you ran yours?

A. Before I ran mine?

Q. Yes.

A. Immediately before? What is the time frame?

Q. You tell me when.
A. I ran my own standard, and that was -- it's in the record.
Q. Do you know when?
A. In January 2010.
Q. So 11 months before?
A. 10 months, yes.
Q. 10 months. Thank you.
How about for Adi?
A. What are you asking?
Q. Oh. When was the known run? When I say "known run," I'm not sure if that's the --
A. Standard, known, yes.
Q. Okay. When it was tested. When was that performed?
A. I do not know.
Q. Okay. And with Shemp and Adi -- I'm not sure if I asked for Perseus -- are there your laboratory's own procedures that require such a performance of a known before you do an unknown test such as you did in this case?
A. Could you repeat that?
Q. Do your own procedures, the DEA procedures, require a -- the performance of a known sample before you do an unknown sample in a time frame?
A. Not in a specific time frame, no.
Q. And do you know if the ISO, the ones we've been referring to, those standards, require it?

A. I'm not aware of a time frame, no.
Q. Not being aware, does that mean you just don't know, or they don't exist?
A. Not being aware, as in I haven't seen it when I went through the guidelines.
Q. So you don't know if your lab is following the procedures that have been set forth by the accrediting or accreditation organization?
A. I know that we were just accredited, so that was all checked.
Q. That's right. You were accredited after you were not accredited; isn't that right?
A. I'm sorry?
Q. Well, there were certain deficiencies, were there not, in controlled substance testing and fingerprint testing -- was there not?
A. As far as the analyses?
Q. As far as the accreditation. There was a rejection of your accreditation for specific reasons, and there was an appeal to the accreditation agency?
A. It's not an objection to the accreditation. They give us recommendations, and we decide whether or not we want to appeal those.

I am not aware, however, of the specifics of what these recommendations were. And I know from a meeting with our

laboratory director that they were not analysis-related.

Q. Okay. I want to go back to the question about running the known and the unknown. I didn't ask you: Was that supposed to be done on the same equipment, same piece of equipment?

A. I always do, yes.

Q. Okay. But there is a variance between 10 months and beginning of November?

A. A variance in time?

Q. Yes.

A. Yes.

Q. Pardon?

A. A variance in time, yes.

MR. EDELMAN: Okay. Yes. Thank you.

May I have just a moment, your Honor?

THE COURT: You may.

Maybe this is a good time to take a midmorning recess.

MR. EDELMAN: Thank you.

THE COURT: The court clock is showing about 10:40. We'll take a 10-minute recess. We'll resume at 10:50. We'll stand in recess until then.

(Recess at 10:39 a.m.)

(Reconvened at 10:53 a.m.)

THE COURT: Please be seated.

You may proceed.

MR. EDELMAN: Thank you.

BY MR. EDELMAN:

Q. Ms. Chan, during your tests of the controlled substances that you opined were or was methamphetamine HCl, was there any -- did you notice any contamination of the equipment that you were utilizing at any time during your performance of these tests?

A. It shows in my lab reports that there was a possible carryover of the instruments into my blank.

Q. That's on Exhibit 5, Bates Stamp 44. Is that not correct?

A. Yes, it's in my notes.

Q. And it says "GCMS," under "GCMS" underlined?

A. Yes.

Q. Okay. Before we go any further, could you for the Court and myself tell me what ASCLD/LAB means?

A. It's an acronym for American Society of Crime Laboratory Directors Laboratory Accreditation Board.

Q. Thank you. Now, if you would please turn to Bates Stamp 93 of Exhibit 2.

Do you have that?

A. Yes.

Q. There are three rectangular boxes, it appears. One starts off with the number "7160360" blank "AC," Wednesday, November 10, at 11:31 and 45 seconds on 2010. See that?

A. Yes.

Q. What does the first number mean, the 716038 [*sic*] 0?

A. That's the laboratory number that each exhibit gets assigned. It's an unique identifier only for that exhibit.
Q. And the second rectangle shows that same laboratory exhibit, and it says, "sublimand AC." What does that mean?
A. The sublimand is because I attempted to sublimate any dimethyl sulfone out of the composite sampling that I took here. And I took that sampling, the sublimand portion, and ran a solid Phase IR, which is this result.
Q. Can you say again what you just said so a non-chemist like myself might understand that?
A. Yes. Okay. So in my screens in the data, it shows that dimethyl sulfone, which we consider a cutting agent for methamphetamine, was found in two of the units. It was just indicated and it wasn't strong enough for me to identify those -- the dimethyl sulfone in those two units.

And so when I came to the solid Phase IR portion of my analysis, I took that sampling, the composite sampling for this test, and we -- I did what we call a "sublimate test," which is you put a -- that sampling onto a watch glass and you cover it with a second watch glass. And when you put it onto the steam bath, dimethyl sulfone has a lower sublimation temperature; so if there is any dimethyl sulfone that might interfere with my solid Phase IR, it will sublimate on to the top watch glass. I'm left with just pure methamphetamine on the bottom, which I can get a good IR spectrum of.

Q. Thank you.

The next rectangle starts off with "d-methamphetamine HCl standard 25" [*sic*] "7- (ATR-1 DEA 365157)." What does that last group of numbers stand for?

A. That is the instrument in which the standard was collected.

Q. Okay. Then down at the bottom, underneath the third rectangle in the bottom left hand corner, it says, "Thermo Scientific IS10FT-IR with ATR (diamond, 1-bounce) Perseus (DEA 365166). What is that?

A. That is Perseus' laboratory identification number.

Q. And that machine differs from the third rectangle, the DEA 365157?

A. That's correct.

Q. A different machine?

A. It was a different instrument, a different ATR-1 instrument.

Q. And why is that?

A. It was the instruments that whoever collected this standard collected it on.

Q. So you had somebody else doing your standard?

A. Anybody can run a standard in our laboratory, and we keep a file of these standards.

Q. Anyone?

A. I'm sorry. Can I correct that? It's any of our chemists may run that standard.

Q. The qualifications and identity of which we do not know.
A. That I personally do not know? No. I know that they are forensic chemists employed at our laboratory.
Q. Nor their certifications.
A. No. Not that I'm --
Q. We don't know if they are certified or not.
A. I do not know.
Q. Are you certified?
A. I am not.
Q. And who would you be certified by?
A. There are numerous forensic science organizations out there.
Q. Would one of them be ASCLD/LAB?
A. No.
Q. What are the other organizations that might certify you?
A. I can't recall their names at this time.
Q. Why would you want -- do you want to be certified?
A. You could be.
Q. Why would one in your industry want to be certified?
A. An extra line on your resumé.
Q. Does it have anything to do with your qualifications?
A. You -- Generally, to be certified, you need to take an exam; but your qualifications are just that, your qualifications.
Q. And you don't have those qualifications?

A. I do.

Q. You just haven't taken the test?

A. A certification is optional. Forensic science [*sic*] in general do not need to be certified, as far as for the chemistry goes.

Q. And as far as your laboratory, the DEA laboratory is concerned; correct?

A. We are not required to do so.

MR. EDELMAN: Okay. May I just have one moment, your Honor?

THE COURT: You may.

BY MR. EDELMAN:

Q. Okay. You said that standards are run as needed; is that correct?

A. Correct.

Q. Who determines when they're needed?

A. Forensic chemists are given leeway to determine when they are necessary.

Q. And were there standards run on the equipment you used before you used it in this case?

A. Were they run on all the instruments?

Q. Yes.

A. The standards were run on the -- all the chromatographic instruments. And as you just pointed out, in the IR it was run on a separate instrument; and that standard was used on

Perseus.

Q. And you say different people determine when -- when a standard should be run; correct?

A. No. I said that a forensic chemist is given that leeway to determine whether or not a new standard is necessary.

Q. And what's the standard to run a standard that is considered by the -- or the criteria that's determined by a chemist?

A. Most generally is when we change a standard, when we need to verify a new standard because we've depleted the old one, or because possibly for the chromatographic instruments, the column has been trimmed, so the retention time will change; but the mass spectrum will not.

MR. EDELMAN: Just one moment again, your Honor.

I have nothing further, your Honor, thank you.

THE COURT: Thank you. Redirect.

REDIRECT EXAMINATION

BY MR. BOMA:

Q. Ms. Chan, you talked about nicknames, if you will, for various pieces of lab equipment.

A. Yes.

Q. Does each piece of equipment that you referenced also have a unique numeric identifier?

A. Yes, it does.

Q. And in your reports, you may put down the nickname or pet

name for the equipment; but there also lists the unique serial number or DEA lab -- is it a laboratory control number?

A. It's a control number, yes.

Q. All right. But each machine you talked about has got such an identifier?

A. Yes.

Q. And does that always appear in your reports if the nickname is not there?

A. Yes.

Q. Could you differentiate? We've had some testimony regarding blanks vs. standards. Could you clarify what a blank is, as opposed to a standard, please.

A. Sure the blank is a matrix without the components of what the sample holds. So, for instance, in my chromatographic analyses, I had dissolved the sampling into a solvent. So I will run that solvent blank without anything in it, without adding anything to it, on the instrument to make sure that my solvents and my -- my pipettes and apparatus that I use are not contaminated.

Q. All right. And that would be a blank?

A. Yes.

Q. All right. Now, as to a sample, what is a sample?

A. The sample is one in which I took a sampling of that particular unit and analyzed it in some way.

Q. All right. Do you run blanks every time on equipment

before you conduct a test?
A. Yes. That's the first thing I do.
Q. All right. And the samples -- and maybe I'm confusing the terms here, but there are known controlled substance samples available. What are those called?
A. Those are our standards.
Q. Okay. And so a standard is not run every time?
A. It does not need to be.
Q. All right. And what is a standard? I assume there are various types. Is that correct?
A. Well, we have qualitative standards and quantitative standards. But standards in general are those which have been verified and authenticated in our laboratory using common methodologies and techniques as well as literature to compare that data for, so that we can verify the identity of that standard before we use it in our case work.
Q. All right. And it's different controlled substances; is that correct?
A. Yes. We have numerous standards.
Q. So they're basically knowns, if you will?
A. Yes.
Q. May not be the term of art, but -- all right.
In one instance here, you were doing the GCMS, I believe it is; and you referenced that there was carryover?
A. Yes.

Q. How did you determine that and what corrective action, if any, did you take as a result of that?

A. In my blank run, which is the first thing I did on the GCMS, I found that there was a very weak 58 peak. And I blew up that particular baseline in the chromatogram to show that there was some type of carryover. I checked the log book and saw that somebody had previously run before me, and it was -- it was indicated that it was the same compounds, methamphetamine, that was indicated in my blank; however, the counts were severely low.

And then to correct, or corrective action, as you put it, was to when I went back to check my data, I reran that same vial to make sure that my solvent had not been contaminated. Therefore I eliminated any chance that I have contaminated my own samplings.

Q. All right. And was a blank run before the retest, if you will?

A. That was the blank. The retest was just the blank to show that it was not contaminated in the solvent.

Q. And it was a negative result?

A. Yes.

Q. All right. And you -- you indicated you did some tests on -- tests for dimethyl sulfone. Could you explain what that is, from your experience?

A. Dimethyl sulfone is a cutting agent that we commonly see

with methamphetamine, and it was indicated in two of the units in my mass spectrum.

Q. All right. And -- but that doesn't -- in other words, it was relatively small amounts because of the concentration or purity of the methamphetamine. Is that accurate?

A. Yes.

Q. And why do you run for -- a test for dimethyl sulfone?

A. Well, the GC mass spec is actually an overall screening process, where it separates all the components of my sample. So that was one of the components that was separated, was the dimethyl sulfone and then the methamphetamine.

Q. All right. And the various charts that were part of the exhibit that you've been testifying about: The spikes vary from high peaks to low peaks. That's a lay person's interpretation of the graphs. Is that accurate?

A. Are we speaking of the chromatogram?

Q. Yes.

A. Yes. The peaks will come out at different times and of different peak areas or tallness or heights.

Q. All right. Is that an indication of the purity of the drug, or what does that reflect?

A. Generally it is a reflection of the purity.

Q. So you'd have lower peaks with less pure drugs?

A. Yes.

MR. BOMA: No further questions. Thank you.

THE COURT: Thank you.

Thank you, ma'am. You may step down.

You may call your next witness.

MR. BOMA: Your Honor, the Government rests. And we'd ask that Ms. Chan be allowed to remain in the courtroom.

Chemist Eyerly is the Government's advisory witness.

THE COURT: She may remain in the courtroom.

For the defense?

MR. EDELMAN: Janine Arvizu, please.

THE COURT: Please step up and be sworn.

(**Janine Arvizu** was sworn.)

THE COURTROOM DEPUTY: Please be seated.

Please state your name and spell your first and last name for the record.

THE WITNESS: Janine Arvizu. J-A-N-I-N-E, A-R-V-I-Z-U.

THE COURT: Thank you. You may proceed.

DIRECT EXAMINATION

BY MR. EDELMAN:

Q. Good morning, Ms. Arvizu.

A. Good morning.

THE COURT: Mr. Edelman, would you please go to the microphone.

MR. EDELMAN: Yes. Thank you.

BY MR. EDELMAN:

Q. What do you do for a living, ma'am?
A. I'm a laboratory quality consultant and auditor.
Q. And what does that mean?
A. I work for clients who use laboratory results to make important decisions and they need to understand how scientifically valid and how reliable the results are. And in that capacity, I conduct audits of laboratories and audits of laboratory data.
Q. And where did you learn to do that?
A. Where did I learn to do that?
Q. I'll rephrase. What's your education?
A. Okay. I have a bachelor of science degree in biochemistry from California Polytechnic State University in San Luis Obispo, California, an ABD in chemistry from the University of New Mexico. That effectively means all but dissertation. I'm a candidate for the Ph.D. degree, have completed all coursework and exams but not dissertation.
Q. And after you were done with your education, what type of experience did you have in the -- your current employment or your current work?
A. I started my career by working for the Department of Energy at one of the national laboratories, where I established and managed a full service analytical a laboratory.

I was certified as a quality auditor by the American Society for Quality and have served, for example, as the

program manager for the Navy's Quality Assurance Program that evaluated and approved laboratories, both government and commercial laboratories, to do analytical work for the U.S. Navy.

Q. Have you worked with forensic laboratories?

A. Yeah. For more than the past decade, probably approaching 15 years, I've been conducting data audits and data quality assessments of forensic laboratory work product.

Q. What is -- what's the difference, if any, in the work that you did for the Department of Energy and the United States Navy and doing audits and quality control for forensic laboratories, if any?

A. Scientifically, there is not really any difference. I suppose the only difference is that in that forensic work, I end up testifying about my conclusions in court, whereas in working for the other federal agencies I would just provide written conclusions.

Q. Do you have the exhibit book?

A. I do.

Q. Can you please take a look at Exhibit 1, page 19, 20, 21.

What is that?

A. It's a copy of my resumé.

Q. It has on the bottom Exhibit A. Do you see that?

A. Yes.

MR. EDELMAN: But this is really Exhibit 2 -- excuse

me -- 1 in our case.

And you said it's your resumé.

I'd move for admission of Exhibit 1, pages 19, 20, and 21.

THE COURT: Any objection?

MR. BOMA: No, your Honor.

BY MR. EDELMAN:

Q. What's 22?

THE COURT: Excuse me. Could I receive this?

MR. EDELMAN: I'm sorry, your Honor.

THE COURT: That's all right.

The Court receives Exhibit 1, pages 19 through 22 -- I'm sorry -- 19 through 21.

BY MR. EDELMAN:

Q. What is page 22?

A. Page 22 through 25 is a discoverable materials list tailored to controlled substance analysis that I provided to your office.

Q. And did I use that information to prepare a document requesting specific information from the DEA Western Laboratory --

A. Yes.

Q. -- period.

A. Yes.

Q. And did you review that motion, which has been identified

as Exhibit 1, motion for additional discovery?
A. Yes.
Q. And did you review the Government's 702 submission?
A. Yes.
Q. That's, I think, Exhibit 2, some of which has been admitted, some has not; but did you look at it all?
A. Yes.
Q. And did you look at Exhibit 4, the supplemental -- the supplement to Government's Fed.R.Crim.P. 702 submission --
A. Yes.
Q. -- in preparation of this -- your testimony today?
A. Correct.
Q. Have you ever tested any drugs?
A. Have I personally ever tested drugs? No.
Q. Have you observed it?
A. I have observed testing of drugs in progress, but I have not personally conducted it.
Q. Would you have liked to have gone into the DEA lab to observe their procedures and methods?
A. Oh, I would have been delighted to.
Q. Have you ever been admitted to laboratories to perform that observation?
A. Yes, in a number of cases ranging from DNA in a capital murder case.
Let's see. Mostly DNA testing, now that I think about

it.

Q. And did you receive the information that you -- that I requested in the motion for additional discovery in this case?

A. No.

Q. Okay. And the materials you did not receive: Can you tell the Court why you wanted it?

MR. BOMA: Objection, your Honor, to this general line of questioning. It's qualitative vs. quantitative in the Government's view, quality controls and the other areas covered by Counsel's questions. It doesn't relate to the quantitative tests that were done in this case.

THE COURT: Response?

MR. EDELMAN: I think it goes to the four requirements in this hearing.

THE COURT: I don't think that the question really gets to what I think you're trying to ask about.

MR. EDELMAN: I'll rephrase that as we go along, your Honor.

THE COURT: All right. I understand, and it is established, that there were certain things that you requested and there was certain information and there was certain access that you requested and it was not provided to you.

I don't think you need to establish that through this witness.

MR. EDELMAN: Thank you.

THE COURT: She has what she has.

MR. EDELMAN: Exactly. Thank you.

BY MR. EDELMAN:

Q. Can you tell me if you think Ms. Chan, from hearing her testimony and reviewing the reports that she has identified that she prepared, is qualified to perform or give an opinion that the materials that she has identified were methamphetamine? I think it was methamphetamine HCl.

A. I don't have any documentation that would so indicate.

Q. What about from her testimony?

A. I'm sorry, but auditors don't accept testimony in the absence of supporting records essentially.

There are, for example, the ISO standards, which the International Standardization Organization standards, an international consensus standard that serves as the basis for the DEA lab's accreditation. And those standards require that the qualifications of each individual analyst to perform each different kind of sampling and analysis test be objectively evaluated and determined and that management discretely authorize each individual to perform those tests or those sampling procedures.

So as an auditor, it's one of the things that I do when I go in and conduct an assessment to look at whether -- We did get Ms. Chan's resumé. And by virtue of her formal education, she's certainly qualified to accept a position as a

chemist in the DEA laboratory. But that does not address competency to perform the specific sampling and analysis tests that were performed in this case. That -- those were other items that were requested in the discovery, specifically dealing with the objective demonstration of her proficiency or her competence to perform each of the types of testing that were done in this case.

We requested those materials, but I haven't seen any; so I cannot therefore conclude that she's qualified.

Q. Well, assume that what she said was true. Did she provide sufficient information to be qualified?

A. No.

Q. What additional information from her testimony, if you would accept that as truthful, was left out?

A. Well, participation in proficiency testing is not the same thing as successful completion of those tests, just as an example. I review a lot of proficiency tests. Simply because you took the test didn't mean you passed the test, if you will.

So in conducting an audit and making such an evaluation, you actually go in and look at the actual data generated by the analyst and reported by the analyst in response to the proficiency test scheme. So nothing was elicited about that.

The next step is that management formally authorized Ms. Chan on the basis of that competency determination to

perform these tests; and that would be essentially a formal authorization for each of the tests involved.

Q. In this case?

A. In this case.

Q. And that is from the DEA manual, or the -- and/or the ASCLD/LAB standards?

A. I've not seen the DEA policy or procedures documents, so I can't speak to its explicit requirements; but that's an ISO expectation, which is the international standard that this lab uses as the basis for its accreditation.

Q. Are there other accreditation organizations?

A. There are accrediting bodies or accrediting agencies. There are other agencies that will also accredit forensic laboratories, for example, to the ISO standard.

Q. Is there another one that you're aware of that exists specifically with controlled substance analysis?

A. Forensic Quality Services located in, I believe, Florida is another accrediting body.

In addition to accreditation standards, there are what are called "consensus standards." Those are documents put out by practicing scientists in the discipline to set guidelines or standards for members of their discipline. And an example of one of those that the DEA has been sort of a driving force behind the generation of the document is -- it's affectionately known "SWGDRUG." It stands for Scientific Working Group in --

I believe it's controlled substance analysis. And that's a large group of practicing professionals in the field of controlled substance testing that periodically meets and publishes recommended guidelines or standards for laboratories practicing in this field.

Q. Have you testified before in any court as an expert in the -- what we call a 702 hearing or a proficiency or quality control case?

A. I don't know that it was exactly this kind of -- of a 702 hearing.

I testified before Judge Pollock in Philadelphia. That was kind of an evidentiary -- I don't -- I'm sorry. I don't know if it was a 702.

Q. Who is Judge Pollock? I mean what court was it?

THE COURT: Counsel, I'm going to interrupt. It makes no difference to me whether a witness has testified in some other case at some other time.

MR. EDELMAN: Very good. Thank you.

BY MR. EDELMAN:

Q. Are you biased -- do you believe you're biased on one side or the other?

MR. BOMA: Objection. Leading.

THE COURT: The Rules of Evidence don't apply in this hearing.

You may answer.

THE WITNESS: I try to be an advocate for science and scientific data quality. I guess that's where my passion lies. I don't feel like I'm a party to one side or another. I'm perfectly willing to give my opinions to either side in a courtroom.

BY MR. EDELMAN:

Q. Have you testified in criminal cases before?

A. I have.

Q. For whose side have you testified primarily?

A. In criminal cases, it's always been for the defense.

Q. Do you have any reason to know why?

MR. BOMA: Objection. Relevance.

THE COURT: Response?

MR. EDELMAN: Well, it goes to bias, rehabilitation --

THE COURT: Counsel, let's focus in on what we're doing in on 702. I'm not weighing opinions. I'm not trying to figure out who is more credible. I am simply trying to determine whether there is a reliable methodology, whether it was reliably applied, whether there is a sufficiency of facts and data used in the application of the methodology, and whether the person who expresses the opinion has adequate qualifications. That's it. So this isn't like a hearing or a trial before a jury.

MR. EDELMAN: Thank you, your Honor. I will try to stay focused, your Honor, based upon what you just said.

BY MR. EDELMAN:

Q. Can you tell me, Ms. Arvizu, do you need some water?

A. Yes.

THE COURT: Help yourself there.

THE WITNESS: Thank you.

BY MR. EDELMAN:

Q. Do you believe there were sufficient facts or data from what you have seen in the materials and exhibits that you have identified to -- for Ms. Chan to render an opinion that the substances were or is methamphetamine HCl?

A. I do have an opinion, and my opinion is that it is insufficient.

Q. Why?

A. Because I can only draw my opinion based on the materials that we received in this case, and those materials were insufficient to draw such a conclusion.

Q. Okay. What facts should have been provided that weren't?

A. The things that were requested in the motion for additional discovery.

Q. What about the testing of the machinery for reliability? How has that -- Did that affect your opinion at all?

A. Yeah. That's probably one of the most serious omissions.

In looking at testing in an analytical laboratory environment, testing laboratories are effectively performing science on a production line. And so it's extremely important

that a laboratory be able to assess the state of statistical control of their measurement system because that tells them how much confidence in results they can have at any given point in time. It's not a discrete, tiny little slice of time that is the day in question that's in issue. So you need data over a longer period of time to understand how your measurement system is performing, what's normal variability.

And in this case, the most -- most serious omission that is apparently evident from the limited materials that we've received is the fact that the laboratory did not generate known or positive control samples contemporaneously with the unknown samples; that is, when they prepared batch samples to run in this case, they included a negative control sample but they did not include a positive control sample. They relied on samples, depending on the technique, that was a month old or ten months old. That certainly doesn't comport with best practice.

And by virtue of Ms. Chan's testimony, they don't have a good scientific basis for even making a determination as to what the frequency is. It's simply left to individual judgment.

With all due respect to Ms. Chan, an analyst who has been operating in a laboratory for a period of only about a year at the time that this testing was performed doesn't have a very extensive basis for making such determination.

I haven't seen the DEA's procedures. I don't know specifically what language or what guidance or direction it provides to the analyst in terms of making a determination for how frequently it should be done.

In my experience, the standards, the international standards that's -- that the laboratory is accredited to, require that you include sufficient controls to understand how your measurement system is performing. I've seen no such evidence that those data exist in this case; that at the time this testing was performed they had an objective scientific basis for knowing how well that measurement system was working.

They did not -- if they had included positive controls in the batches that were run with these samples, that would have addressed that issue. They did not. So there is simply insufficient data to make a determination that the measurement system was in control, in a state of statistical control at the time that these unknown samples were tested.

Q. You indicated that you reviewed Exhibit 2, Bates 35, to the end, with all the graphs, etc.

A. Yes.

Q. Did you understand them?

A. Yes.

Q. I mean you know what they mean?

A. I know what they mean.

Q. Was there any significance to the methods that was used by

Ms. Chan with regards to the -- Take a look at Exhibit 6 and the cross-referencing. Do you have that photograph?

A. Oh, yes, I do.

Q. That photograph, where I think she identifies Exhibit 6 as the drugs that she did the Marquis tests on and then she did, I think, a mass spec test on.

A. Correct.

Q. Is there anything unreliable with regards to those methods?

A. Yeah. One of the most fundamental responsibilities of a testing lab that tests unknown samples is to explicitly and unambiguously be able to trace the origin of each and every analytical determination; specifically which determination arose from which discrete item.

And as we heard testimony already, when there were multiple containers -- I think they called them "boxes" -- within an envelope, they were not uniquely identified. They were not labeled, they were not identified. So it's not possible unambiguously to correlate a result with any discrete item on this page.

Q. Page 43, 44, and 45 of Exhibit 2 has been identified by Ms. Chan as her notes.

A. Yes.

Q. Were you able to read those notes?

A. There are quite a number of instances where I cannot.

Q. And is there some standard or requirement that the notes be

maintained so they're legible by somebody else?

A. Yes, absolutely, because we should not have to rely on any individual's memory or even ability to reconstruct it. She could win the lottery and move to Tahiti and no one else would be able to interpret her records.

The quality standard, according to international and national quality standards, is that records of original observations, which her manual entries effectively represent, must be permanent; that is, you have to write them in ink, and they must be legible.

In a number of instances, the entries to these records are not legible even when they're blown up because the -- and I understand from the testimony that these might be slightly reduced during the copying process. But even when they were expanded to this size, I was unable to read them.

Q. When you're referring to "this size," what exhibit is that?

A. I'm sorry. This is Exhibit 5A, pages 1, 2, and 3.

Q. And can you identify what Exhibits 5A, page 1, 2, and 3 represent?

A. They're blown-up, enlarged versions of Bates Stamp, from Exhibit 2, Nos. 43, 44, and 45.

Q. Can you circle the -- on 5A 1, 2, and 3, those areas that are illegible and as best as you can tell the importance or lack thereof of the information?

A. Yes. Do you want it on this one, or on -- in here? She

previously circled some in here.
Q. Well, I suppose if you can read the smaller one to mark it on the smaller one.
A. If I can't read it on the big one, I certainly can't read it on the small one.
Q. Do you have a marker?
A. Yes. There is a marker here.
THE COURT: Is this a different color marker than was previously used? Otherwise, you're not going to have any way to know the difference between the witnesses' markings.
THE WITNESS: I can use this blue one instead of the red one.
MR. EDELMAN: Thank you.
THE WITNESS: My marks will be in blue.
MR. EDELMAN: Thank you.
BY MR. EDELMAN:
Q. Circle them so we're not covering up and making it more illegible.
Can you identify as best you can where you're making the circles?
A. The first, most obvious one, is the top right corner under "Lab Number." That is illegible on this copy on page -- I'm sorry -- this is Bates Stamp Page 44.
Q. And what's the significance of that number?
A. That's probably the key link that, as was already testified

to by Ms. Chan -- that is the number that uniquely identifies this particular exhibit in this particular case. So under quality standards, they're required to identify each and every page of records from the laboratory relevant to this case with that specific number. And on this page, at least, it is certainly not legible.

The issue -- in some cases some of these measurements -- and she already testified about the result for Vial 1, Sample 1, and gave us a number that -- I profess to have old eyes, but there is no way even on a blown-up version I can interpret that or read that.

There is another number underneath for Vial 1 that again simply can't read.

From an auditor's perspective, I need to be able to verify calculations, I need to be able to verify conclusions, to recompute results. And when they're not legible, I'm not able to do that.

It's a traceability function. Traceability speaks to our ability to have a completely unbroken chain between results and original samples. And there are just a number of incidents throughout here, including the weighings on Bates Page 45. I'm going to do my best to remember which ones were even bad in the blown-up version.

So the bottom line is really that the documentation provided by the laboratory was insufficient to reconstruct

their work, to understand what was done by whom, in what manner, at what time specifically. And in addition, the analyst's observations sufficient to enable traceability are not at least legible, so it was -- it's incomplete in one regard; and even when it's provided, if it's not legible, it's also incomplete.

Q. And did you circle whatever the information is that may be either illegible or insufficient?

A. Yeah. I've been doing a bunch of them.

In my own notes, I took the large versions and I actually asked a lot of people what -- excuse me -- different entries were to see if I could even get a consensus. And when I couldn't even get a consensus between disinterested parties as to what the numbers were, I concluded they were illegible.

Q. Were they illegible to you?

A. They were certainly illegible to me.

Q. Please continue, and then I have a -- another question for you.

A. Okay.

Q. Do you believe that Ms. Chan obtained sufficient facts or data that made her opinion reliable?

A. No, for the reason I've already described. In the absence of positive control samples that were contemporaneous to the analysis of the unknowns, my answer is no.

Q. Any other reason?

A. Just purely to the sufficiency of the data. That's the driving force.

The other issue is the -- in the absence of records proving that the measurement system was in control and traceable, all the things requested in the motion for discovery, I can't make an assessment as to whether their methods were even reliable, because one issue is the scientific validity of the method that's used, whether it's appropriate for its intended purpose. The other is how effectively that method is implemented or put in practice. But I can't assess either without the information that was requested in the motion for discovery.

Q. Now, I think you might have heard Ms. Chan say that the DEA laboratory adheres to the principles in the ISO standard from ASCLD/LAB?

A. Yes.

Q. And did, from your observation of the records that we have from Ms. Chan and the 702 disclosures and her testimony -- did the lab adhere to all the standards?

A. No.

Q. Which ones did they not -- Well, before I ask that, do you know if the DEA lab actually adheres to those standards?

A. No.

Q. Do you know if the DEA lab's written procedures apply some or all of those procedures, principles, and methods?

A. No.
Q. From the documents that you have observed, does -- did Ms. Chan adhere to the principles, methods, and procedures of ASCLD/LAB?
A. The standard is really ISO. ASCLD/LAB is simply the accrediting agency, so it should be to ISO. And, no, she did not.
Q. And I think you've testified to where she has not; is that correct?
A. Correct.
Q. Okay. Now, do you believe -- I don't know if I asked this, but I'm going through the requirements that I understand are required.

Do you believe that Ms. Chan applied the principles and methodologies of [*sic*] the facts that she had to obtain her opinion?
A. Okay. If I understand your question correctly, an example where I believe that her application of the principles was not sufficient was in the use -- the issue of the blank. The principle is that quality control, known control samples or negative controls or blank samples, are included with an analytical batch as a means of assessing and evaluating whether there is any potential for contamination during the course of the measurement process. That's the principle.

Her application of that in practice was that when she

ran a blank at the very beginning of her analytical batch and when she discovered the presence of a contaminant, there was no immediate corrective action because she -- I actually didn't check the times to see whether this was on an auto sampler or not, but she continued with the analysis of all the unknown samples after having a contaminated blank and did not -- and included a reanalysis of the same blank sample at the end of the run.

The problem with control samples is you don't get mulligans in analytical chemistry in this kind of environment. When a quality control sample fails, the obligation on the analyst is to halt the analysis and to investigate the problem, determine the source of the problem, correct it, ensure through objective means -- that is, evidence -- that you've corrected it, and then rerun the samples.

She's drawing conclusions or extrapolating to conclusions that it must not have been a problem because my final blank was clean. And that really represents a misunderstanding of the proper and appropriate use of blanks and the behavior of contaminants in the laboratory environment.

Q. Now, this particular example: Was that one of the 12 samples that she individually ran -- I think it was GSMS -- GCMS?

A. GCMS. It was part of the batch that included 12 unknown samples. It was the first injection to the instrument in that

batch that was followed by the 12 unknown samples and ended with the final reanalysis of the blank.

Q. So is the method of taking the 12 individual -- I think she called them "units" or "boxes," doing a Marquis test, and then doing the subsequent GCMS test procedurally reliable or a proper method?

A. It could have been but not as done here.

Q. Why?

A. For the reasons that I've just can explained.

For one thing, we're -- In this case, there were 12 units that were packaged differently. In Ms. Chan's records for the testing in this case, she makes reference to use of a sampling plan. Let me find it.

It may not have been in hers. It may have been in -- I'm not going to say it right -- Mr. Moriwaki's response that he indicated that her practice for preparing the composite and sampling the discrete units was described in the laboratory sampling plan.

I'm not in a position to assess the scientific validity of their approach or the implementation of their approach simply because we got no -- absolutely no information about it. And it's foundational -- it's of supreme importance, if you will. It's foundational to how much -- what the final results are and how they can be interpreted, because if you're drawing conclusions about a larger population -- in this case

our population is this entire set of evidence, this entire exhibit --

Q. You're referring to Exhibit 6 of all the 12 units?

A. Exhibit 6, yeah. If you're going to draw conclusions about that entire population, there are statistical guidelines and direction that different standards provide to you.

They reference their use of a sampling plan but give absolutely no information as to what assumptions that's based on, because every one of these strategic designs for how you conduct sampling is based on a set of assumptions. We have no idea what their assumptions were or how it was actually put into practice.

So it speaks to both the theoretical and to the practical.

Q. Do you remember reviewing some of Ms. Chan's notes that indicated that -- and her testimony that several of the units had different colors to them in the inside?

A. That was in her -- her documentation -- her records here. That was on page Bates Stamp Page 43.

Q. And what significance, if any, does that have to the reliability of the methods and the ultimate opinion?

A. Well, one of the things that you assess when you're putting together a sampling plan and you're trying to develop a strategy for determining how to sample evidence or any large heterogeneous material -- you've heard testimony already that

the amount of sample actually introduced to the instrument is very, very small. It's on the order of milligrams. It's a very small quantity.

In order to ensure that those results are actually representative of this much larger population, you use a statistically valid sampling approach.

Those kinds of approaches depend on assumptions. One of the assumptions is whether you're starting with a homogeneous population or a heterogeneous population. And the color of a compound is one of the indicators as to whether or not it in fact has a common origin and is of the same chemical composition. It's something that's visually apparent to the observer. You don't have to be an analytical chemist to tell the difference between a compound that's white and a compound that's yellow, for example. That difference has its origin in chemistry somehow. And so you can then draw the conclusion that those are not necessarily the same -- of the same chemical composition. It's a clue.

If you're sampling a group of, for example, pharmaceuticals, where all the pills are of the same color and size and have the same markings on both sides, that can lead you down one strategic path, because it appears to be a homogeneous material; but when you get samples that are visually heterogeneous, packaged in different ways, of different grain size, those kinds of clues, that gives you an

indication that they're heterogeneous and you need a different sampling approach or different sampling strategy.

So because we got no information about it what assumptions were made or what data was based, you can't assess the validity of their method.

Q. Is it your understanding that all of those 12 packages were then lumped together into one, or homogenized into one --

A. "Composite" is what it's called.

Q. Thank you. Composite. Is that your understanding?

A. That is my understanding.

Q. And then a series of tests were performed on that composite?

A. Yes. The color tests and the GCMS screening were done on the discrete individual boxes or units, 12 discrete tests. Everything else was done on a prepared composite.

Q. On the first two, the Marquis and the GCMS tests that Ms. Chan, I believe, testified either she -- she believed was methamphetamine, is that scientifically reliable?

A. I have no basis for drawing that conclusion, so I have to say that the reliability has not been demonstrated.

Again, if I had their assumptions and sampling plan, I could make such a determination.

So my practice with my clients is to say when the science is not supported, when there is no records or no data to support the conclusions, then you must assume that they're

not reliable or that reliability hasn't been proven.
Q. Have you seen any photographs of each individual sample, or are there any, as far as you know -- excuse me -- of any of those units? Have you seen any photographs of the units to compare the grain size, color, and anything else that might be visually or microscopically discernable?
A. I've only seen photographs of packaged materials. And in some cases you can see through the transparent packaging, but that's about it.
Q. And would there be any importance if the observer saw some difference?
A. Yes.
Q. And why?
A. Because that's objective evidence of differences, which gives you different direction in terms of your sampling strategy.
Q. So --
A. You use a different sampling strategy if you observed differences than if you don't.
Q. What is the scientific reliable and -- methodology of putting it -- all these units into one composite?
A. If you have sufficient evidence to support that each of the discrete items have a common origin and common chemical composition, then it's a perfectly acceptable practice. Our problem is that we don't have that here.

Q. So is it safe to say it was not acceptable, then, to do that?

A. In the absence of proof, I have to assume it's not a reliable means.

Q. And was there any proof in the materials that you saw?

A. There was not.

Q. And should there have been some sort of proof in the notes and/or other materials?

A. You know, the only -- the only indication provided by the analyst who performed this testing -- for example NGC mass spec --

Q. What page are you on?

A. I'm sorry. This is on Bates page No. 44.

THE COURT: In Exhibit 2?

THE WITNESS: In Exhibit 2, yes. Sorry.

About the top of the second third, there is an underlined indication, written statement "GCMS." And it describes that 10 milligrams of each unit was back-extracted with methylene chloride and filtered through sodium sulfate. Methamphetamine identified in all units.

Similarly, under the section that's entitled Marquis color test --

BY MR. EDELMAN:

Q. That's just above that?

A. That's just above.

There is a description of the technique, for example, where it says, "sulfuric acid," and then in the second line it says, "methamphetamine hydrochloride," and then there is a standard reference that frankly, if it's not the expanded version, I can't read it. And it describes it changing from clear to orange/brown or brown; and it says -- this is the important part -- separate samplings of all units 1 through 12 yielded that result.

From a records management perspective and from an audit perspective, it's not acceptable to record results for large batches in a single line entry. There should be a discrete, line-by-line, "I sampled Item No. 1 and got this result; I sampled Item No. 2 and got that result." This is a really poor practice from a record-keeping perspective because it -- it can lead to shortcuts, it can lead to, "Oh, I forgot that that -- that certain sample No. 4 out of 12 really went straight to brown; it didn't pass through," or whatever the differences were. It tends to from a -- From a personal perspective, it tends to lead the person to treat things as more homogeneous than they really are.

As scientists, you like to record observations at the time the observation is made. That was not done in this case.

Q. On Exhibit 2 Bates 93 --

A. Exhibit 2. I'm sorry? What?

Q. Bates 93.

A. 93. Okay.

Q. Do you know what that is?

A. Yes.

Q. Can you tell the Court, please, what that is and the significance, if any, in your opinion?

A. Yeah, these are a series of Fourier transform infrared spectra. Infrared spectra is simply an analytical technique that identifies certain functional groups of a compound as having characteristic sorption or frequencies, which are these bands that you can see here.

And the first sample was the blank sample associated with this batch, and Ms. Chan did include a blank with each and every batch that she ran in this case.

The second sample is a -- the unknown sample in this case. You can tell that from the case number, 7160360, and from her testimony, that was performed on a composite sample. So that's the spectrum that she got from the unknown sample.

That sample, both blank and the unknown, was generated using the instrument DEA 365166. By her own testimony, Ms. Chan indicated that the knowns and the unknowns were always tested on the same instrument. There may in fact have been a known tested on this instrument; but if there was, we were certainly never provided with that data. The data that was provided in this case was a known spectrum that was generated on a different instrument, on DEA 365157.

Once again, for purposes -- a lot of the guidance that I see written in standards is if you're doing investigations, it's appropriate to guide your direction to use library searches or data from other instruments; but if you're going to qualitatively identify a compound as present in an unknown, then the known positive control sample or reference sample of known origin and purity must be run essentially at the same time on the same instrument by the same analyst under the same conditions. This was run on a different instrument. And frankly, we have no idea when it was run because that's not indicated on the data.

I might also, if I may, mention that the basis for Ms. Chan's identification of this compound as conforming to this methamphetamine is not apparent from the data. Simply looking at a spectrum like this is not actually identifying it. I would expect a laboratory's procedure, for example, to spec which specific bands must be present in the spectrum and what specific wave number range they must be present at in order for it to be confirmed. That would mean a spectrum that actually has data written on it, not just looking at the general pattern, but you're actually identifying specific bands at specific wave numbers with specific tolerances so that you can make that kind of an actual scientific determination instead of "Well, looks like meth to me."

Q. Was there any other materials evidenced in these -- in

Exhibit 2, the graphs and what looks like the printouts from this equipment, that contributes to your opinions that the methods were not proper in application, I believe -- the procedures and facts were not reliable to the methods? Excuse me.

A. The qualitative methods that were used in this case -- and that includes --

MR. BOMA: Your Honor, I'm going to interpose an objection. We're not here for qualitative assessment. We're here for quantitative assessment.

THE COURT: Well, quantitative assessment applies to the sufficiency of facts and data. Qualitative applies to methodology.

MR. BOMA: Yes, your Honor. In the Government's view, this line of questioning is addressing qualitative issues.

THE COURT: And I'm not understanding why we're not dealing with qualitative issues when we're talking about methodology.

MR. BOMA: Yes, your Honor.

THE COURT: Counsel, I'm going to ask you to reach a stopping point. It's noon, and we need to take a noon break; so would you find a convenient stopping place, please.

MR. EDELMAN: I suppose after the answer to this question would be a good time.

THE COURT: Okay.

THE WITNESS: The -- if you refer to Exhibit 2 Bates page 44, in each of the qualitative tests -- that is, the tests that were used by the analyst to identify methamphetamine -- that includes the Marquis color tests, the -- doesn't include the Marquis color. Excuse me. It includes GC mass spec, GCIRD, GCFID, and IR, the attenuated total reflectance IR -- in each of those tests, the analysts ran a negative control but did not run a positive control in the batch.

I've reviewed data for a lot of federal agencies over the years, and not one of them would accept data from a batch that did not include a positive control, period.

BY MR. EDELMAN:

Q. When you say "a lot," that's ambiguous. Can you give us a round --

A. I've reviewed data for the Department of Energy, for the U.S. Navy. I've reviewed data that was being submitted to the Environmental Protection Agency. Essentially, a lot of those agencies require more rigorous -- they'll actually say I want one run every 12 hours, for example; but daily with each batch is considered an absolute minimum.

I confess to being surprised at the contention that 10 months prior is sufficient to draw such a conclusion, because I don't know any other federal agency that would accept it.

Q. You mean their laboratories?

A. Data that did not include positive control samples in the

batch with the unknowns.

Q. Right. In their labs?

A. In their labs or in labs that they buy services from.

I've disqualified -- For example, when a commercial lab provides data to the Navy, I've reviewed it; and when it did not have an acceptable positive control -- It's not enough to just run one. It also has to pass, like their negative control. It's not enough to run one; it also has to pass. I said that their positive controls did not pass, and they don't pay for the results.

Q. Did each of those federal agencies take your recommendations and require a corrective action from these labs, or go somewhere else?

A. They just didn't pay for it, made them redo it.

MR. EDELMAN: Okay. I think this is a good time, then, your Honor, if it's convenient for the Court to take an afternoon -- well, midafternoon break.

THE COURT: Well, a noon break.

MR. EDELMAN: Noon break.

THE COURT: What we'll do is reconvene at 1:30. We'll stand in recess until then.

MR. BOMA: Your Honor, may we leave our materials in the courtroom, or --

THE COURT: Of course.

MR. BOMA: Thank you.

(Recess at 12:05 p.m.)

(Reconvened at 1:38 p.m.)

THE COURT: Please be seated.

Are you ready to proceed?

MR. EDELMAN: Yes. Yes, thank you.

THE COURT: Please do so.

BY MR. EDELMAN:

Q. Ms. Arvizu, should the chemist who is performing the tests in this case know the ISO standards?

A. Oh, yes.

Q. Now, could you describe your understanding of the air hood mechanism that was described by Ms. Chan?

A. Hoods are used in an environment to protect the environment in an analytical laboratory. It's an enclosure that may vary from a couple of feet, 8 feet, even 12 feet in length. And it has a bench, essentially a bench top; and the front has a glass front with a door that can slide down so that the bottom part of the hood is left open for the analyst's hands to go in and do their work.

The purpose of a hood fundamentally is to protect the breathing environment for the analyst because it operates by essentially sucking air from the laboratory environment in through the space velocity of the hood and up and out the stack. So there is a lot of hair moving through the hood, and it's always moving from the ambient air in the laboratory

environment up into the hood and out the stack. That way, there is no risk of exposure to the analyst from materials that they're working with in the hood.

Q. If there is another hood that's sucking up air in the same laboratory, what does that do to the controlled substance on the two work stands? I mean can it cause contamination, cross-contamination?

A. Oh, certainly the issue of how the -- it's called HVAC, heating, ventilation, and air conditioning system. In a laboratory, the design and operation of that is critical to ensuring that you have positive air pressure and negative air pressure in the proper locations to prevent any airborne transmission of materials that could be a contamination -- a contaminant.

Q. And do you know which particular system that the DEA Western Regional Laboratory has?

A. I do not.

Q. I'd like you to please take a look at Exhibit 4. Go to page 7, please.

Can you please tell me if you know what page 7 to 9 appears to be?

A. This is a response prepared by -- I believe he was a supervisory chemist at the DEA laboratory, Mr. Moriwaki. And again I apologize if I'm not pronouncing his name properly. It was prepared, as I understand it, in response to a letter that

I sent to you that addressed all -- the data quality issues that I saw regarding the validity and reliability of the work done in this case.

Q. Okay. Now, I also want you to please take a look at Exhibit 2, pages -- let's see -- 83, starting at 83?

A. I'm sorry. Bates or the number at the bottom?

Oh, I'm sorry. 109. Excuse me. 109 back to 127.

Okay.

Q. Okay. Do you know what that is?

A. Yeah, this is the final assessment report that was written in response to the on-site inspection of the DEA laboratory.

Q. And do you know the date of that?

A. Well, let me look.

It looks to be dated September 8, 2010.

Q. And did you review this document?

A. Yes.

Q. Did it contribute to your opinion?

A. It did.

Q. And how did it contribute to your opinion?

A. This final assessment report represents the summary conclusions of the auditors who did the on-site inspection as part of the accreditation process. And this is the vehicle through which the inspectors identified findings or the deficiencies in the laboratory's operations.

And as part of the accreditation process, laboratories

are required to respond to each and every deficiency and to institute corrective action as necessary to demonstrate resolution of those deficiencies.

Q. Before you go for further, do you know if this is the accreditation that I was questioning Ms. Chan about?

A. Yes.

Q. And I think she answered as best as she was able to?

A. Yes.

Q. Do you recall her saying that these were just recommendations?

A. I do. And they're certainly not recommendations.

When an auditor releases a final report with findings, those are objective evidence of a deficiency or a failure to conform to the applicable quality standard. And the lab is required -- it's not an option. You don't decide whether you want to respond to a recommendation. You must, if you're going to conform to the accreditation requirements, respond with corrective action to show resolution.

Q. Who were the people that were doing the audit?

A. These were inspectors from the American Society for Crime Lab Directors Laboratory Accreditation Board. These were ASCLD/LAB inspectors.

Do you want their names?

Q. Oh, not, not the individuals. The organization.

Can you tell me what particular sections of this

assessment was of particular concern, if any, to you and contributed to your opinion?

A. Yes.

The inspection report identified a total of six findings. A total of six corrective action reports -- requests are submitted to the laboratory. And two of the six specifically addressed the sampling issues, sample management issues associated with controlled substance testing when they were originally released by the inspectors and provided to the laboratory. That is Deficiencies -- Or findings No. 1 and 4, I believe.

Q. Where is that located?

A. Finding No. 1 is on Bates 113. This is Exhibit 2.

Q. 113?

A. Yes.

Q. Okay. And can you tell --

A. Okay. This is -- this is -- the structure of this, if you see the very top, is it cites the clause in the applicable requirement. So ISO 17025 is the standard. And these sections that are cited here 4.13.2.1, and so on -- those are the relevant standards or the sections of the standard that are relevant to this particular finding. And they are cited or quoted directly from the ISO standard in the section below. These are the requirements that the laboratory is expected to comply with in order to become accredited.

The finding down below is described by the auditors. And it describes a finding specific to latent prints; but what's important and what was important to me was the statement in bold at the top just under "Finding." And it states that "a portion of this corrective action report request was appealed by the laboratory for the controlled-substance-related findings. The ASCLD/LAB board of directors sustained the appeal, and that portion of the finding has been deleted from this CAR."

A similar statement is entered by the auditors on the finding for No. 4 of 6 on Bates Stamp 120.

In that, they let stand a finding in the controlled substance section that multiple bags of evidence received in a single exhibit are not uniquely identified to ensure that the items cannot be confused when referred to in records or reports.

That deficiency still existed at the time the work in this case was done.

Q. And what did the laboratory do as a result of the deficiencies in this entire report --

A. Well.

Q. -- if anything?

A. They responded, and their responses were found to be acceptable for the findings that stood.

What's not clear is which -- what was the substance of

the finding that was appealed and subsequently the appeal was upheld. Just based on my observation as an auditor, there certainly appear to be issues associated with controlled substance sample management at the laboratory, but I can't tell what the original finding issued by the auditors was -- what that original finding was because it's been deleted from this -- from the materials that we received.

So we don't know what the original finding was or what the basis for the appeal was.

Q. And this contributed to your previous opinion concerning the methods, the application of the --

A. Specifically to the sampling issues for controlled substance. Sampling issues.

MR. EDELMAN: I move for admission then, your Honor, of the remainder of -- well, not the remainder. Exhibit 2, I think it's 105 to 127, Bates stamped 127.

THE COURT: Any objection?

MR. BOMA: Excuse me, your Honor. If I might have a moment.

THE COURT: You may.

MR. BOMA: No objection.

BY MR. EDELMAN:

Q. Now --

THE COURT: May I receive these?

Exhibit 2, pages 105 through 127 will be considered by

the Court.

MR. EDELMAN: Thank you.

BY MR. EDELMAN:

Q. Did you have an opportunity then to examine the supplemental report submitted by the Government identified in Exhibit 4?

A. Yes, I did.

Q. And was that in response beginning on page -- I think it's 7 to 9 of your -- our submission, 702 submission?

A. Yes, that's correct.

Q. And did the -- I think it's signed by Mr. Moriwaki?

A. Yes.

Q. He's the supervisory chemist with the DEA Laboratory in San Francisco. Did he adequately respond to your concerns?

A. For the most part, he didn't address them. He referred to documents that we've not seen as his explanation or pretty much deferred to the fact that because we're an accredited lab that should be good enough.

Q. I think we were talking about some blanks that were used when the GC -- thank you -- MS was used on the 10, 12 samples; isn't that correct?

A. Yes.

Q. And it's my understanding that there was a blank that was negative done initially?

A. No, that's not correct.

Q. Explain that again, please.
A. A total of 14 samples were analyzed in that batch, and the first sample that was injected was a blank for a negative control sample. Then the 12 items of evidence, samples from the 12 items of evidence were injected in sequence. And the last, the 14th sample in that batch, was a reanalysis of the same vial of blank that had been analyzed as the first injection to the instrument.
Q. Is that a standard procedure?
A. No. When quality control samples fail, the run should be terminated and the failure should be investigated and corrective action instituted before unknown samples are tested.
Q. I'm sorry. It was a negative sample, No. 1 and No. 14; right?
A. No, No. 1 was not negative. No. 1 was the sample that showed evidence of contamination.
Q. I see. And then you had the 12?
A. Then immediately after the first blank sample was run that showed evidence of contamination, the next sample that was run was the first of 12 aliquots taken from the 12 items -- they're called "units," I think -- of evidence in this case.
Q. And why is that bad method or substandard methodology?
A. Well, because again, when a quality control sample fails, it's not sufficient to simply proceed with the run. That's an indication of a failure that needs to be investigated and

addressed before unknown samples are taken.

THE COURT: Mr. Edelman, I think this witness has already talked about this.

MR. EDELMAN: I'm going to move on. Thank you.

THE COURT: Okay. Thank you.

BY MR. EDELMAN:

Q. In developing your opinion and giving it today, do you rely upon treatises?

A. Yes.

Q. Can you identify some of those treatises?

A. They're identified explicitly in my letter to your attention and along with citations to the specific sections, but they include the ISO technical requirements for testing laboratories, which is --

Q. One second. Let me just -- let me just make this quick then. Is that Exhibit 3, page 4, forward, your February 18, 2011 letter?

A. Yes.

Q. And you authored that --

MR. EDELMAN: Your Honor, I'm sorry. Did I have admitted 3.

THE COURT: No.

MR. EDELMAN: I'd move for admission of Exhibit 3 pages 4 through 15.

THE COURT: Any objection?

THE WITNESS: There is an attachment. I'm -- sorry. It's numbered 16.

MR. EDELMAN: 4 through 16. Excuse me.

MR. BOMA: Your Honor, no objection.

THE WITNESS: I'm sorry. 17. It's a two-page attachment.

MR. EDELMAN: 4 through 17, your Honor. I apologize.

THE COURT: The Court receives 4 through 17 of Exhibit 3.

MR. EDELMAN: I have no other questions. Thank you.

THE COURT: Thank you. Cross-examination.

MR. BOMA: Yes, your Honor. Please.

CROSS-EXAMINATION

BY MR. BOMA:

Q. Good afternoon.

A. Good afternoon.

Q. From your resumé -- I've read it. It's extensive. But you are not a forensic chemist. Is that --

A. I am not.

Q. And I believe you said earlier during the course of your direct that on one occasion, I believe, you observed analysis of a controlled substance of some kind?

A. Yes.

Q. All right. Where was that?

A. I'm sorry. If you'll give me a little time to think, I'll

try to remember.

I don't remember right offhand what laboratory that was in.

Q. Was it a forensic laboratory of some kind?

A. Yes.

Q. A law enforcement laboratory, perhaps?

A. Certainly most forensic labs are law enforcement, but this may have been a commercial laboratory. There are a few, and I've been to some.

Q. Okay. But do you know why the controlled substances were being examined by that laboratory?

A. I do not.

Q. All right.

A. Do you mean the specific case?

Q. Yeah. Why was it being done?

A. Well, it was a forensic case. I don't know the case.

Q. All right. Were you there on behalf of a government agency, or defense attorney?

A. Defense attorney.

Q. All right. And the laboratory where you observed this analysis of a controlled substance on one occasion: Did you write an expert report regarding your observations?

A. You know, I don't remember if I did in any particular case. That's years after the fact. I'm sorry --

THE COURT: Counsel I don't understand this witness to

be basing her opinion on one observation of a drug test that she observed.

BY MR. BOMA:

Q. Have you ever personally conducted a forensic chemical analysis of a controlled exhibit?

A. No, sir.

Q. All right. And approximately how many DEA laboratories across the country have you observed either in person, which I think the answer is you haven't, but have you analyzed results from those laboratories, from DEA laboratories?

A. I know I've looked at results from San Francisco and Washington, D.C. I think there is -- and from Texas. I'm not sure if there is one in the South. I'm sorry. I just don't remember.

Q. Miami?

A. It may have been. I remember something in the South.

Q. All right.

A. I'm sorry. I just don't remember.

Q. All right. And to the best of your recollection, did you author reports regarding your view of their testing procedures?

A. I'm sorry. I don't remember.

Q. Did you testify in any of those instances, critiquing the DEA operations?

A. I may have -- I know I've testified in Washington, D.C. I don't remember if it was about -- from results from that

laboratory or another lab in the area.

Q. Regarding the lab in San Francisco, have you critiqued operations at that laboratory on previous occasions?

A. Yes.

Q. And did you either testify or serve as an expert witness for the defense?

A. My recollection in that case was that I did not testify. My recollection is that I was present but that I did not testify.

Q. All right. Did you critique certain aspects of the DEA lab procedures in that case?

I believe, to refresh your recollection, it was in 2008 or thereabouts.

A. Yeah. I spoke with Mr. Eyerly earlier, and he mentioned the name of the case to me.

I don't recall testifying in that case, but -- or writing a report; but I remember reviewing the data.

Q. All right. Now, you talked about the ASCLD/LAB discrepancies noted in their accreditation review or inspection.

A. Yes.

Q. All right. And that inspection occurred during the spring of 2010, or thereabouts?

A. I don't remember, but the timing sounds about right.

Q. All right. That will work for my purposes, ma'am.

Now, they received their certification or reaccreditation later in the year, August -- August of 2010 at some point. There is an accreditation paperwork that was filed with the Government's 702 submission.

A. The first page of the assessment report says the inspection was conducted in January of 2010, and it's dated September of 2010. I don't know what date the final accreditation was issued. Is that also in here?

Q. It should be in there, ma'am. There is a copy of a certificate of accreditation.

A. Date issued, February 26, 2010.

Q. All right. And for the record, that's Bates Stamp No. 124; is that right?

A. I'm sorry. This is 127, the one I was looking at.

Same dates, different location.

Q. So it appears there is a double entry?

A. It's a different record.

Q. That's what it appears?

A. It's a different document.

Q. But in any event, they were accredited during August of 2010?

A. Yes.

Q. All right. And you're aware -- and I'm not sure if you were here for the testimony. You missed a small portion of the testimony this morning. Are you aware that the tests were

conducted by Forensic Chemist Chan during the period from 8 to 10 November of 2010?

A. Yes.

Q. So that was subsequent to the reaccreditation, if you will, by ASCLD/LAB?

A. Yes.

Q. All right. And it's noted in those documents from the ASCLD documents that we've been referring to that their recommendations had been rectified or appealed successfully to ASCLD; is that correct?

A. That's correct.

Q. And the one you were focusing on -- and you admitted it -- Discrepancy No. 4, dealt around fingerprint comparisons -- it was talking about Standards 4.3, a series of standards under that?

A. What I was referencing on Bates page 120 under "Finding" at the bottom of the page specifically addresses in -- the controlled substance section. That's the one I was making reference to.

Q. All right. But there was also other corrective actions regarding fingerprint comparison?

A. Oh, yes, in several of the findings. That's correct.

Q. So it's not totally focused on controlled substances?

A. Oh, no. Their scope of accreditation also includes fingerprint.

Q. All right. I see in your resumé that you've evidently since 2008 -- you've obtained ASCLD 17025 auditor training; is that correct?

A. I have been trained to the ISO laboratory standards. I think the first time was back when it was Guide 25, which as the predecessor to ISO 17025. That's a typically a week-long course with a practical and exam at the end.

Q. Have you ever participated or -- excuse me. Is there a separate qualification or training for an ASCLD/LAB 17025 auditor training?

A. There is. ASCLD/LAB administers its own training program for inspectors who conduct their assessments for their accreditation program. Those people are generally practitioners in the forensic science field.

Q. All right. Such as was done here at DEA laboratory in San Francisco, for instance?

A. I'm sorry. I don't understand your question.

Q. Well, that would be a facility that would be governed by ASCLD/LAB 17025?

A. Yeah. ASCLD/LAB is the accrediting body. The standard is the 17025.

Q. All right. Have you ever participated as an auditor during an inspection or recertification to the ASCLD/LAB 17025 standard?

A. No. No. ASCLD/LAB only has their own inspectors. I've

not done that.

Q. In this case, an offer has been made to the defense for samples, 100-milligram samples, to be made available to a defense chemist for independent testing, providing that it's done at a DEA certified laboratory. Are you aware of that?

A. I am.

Q. All right. In your opinion as an expert, would a confirming test be the best approach to determining the validity of DEA's determination in this case?

MR. EDELMAN: Objection, your Honor. I recognize that the Rules of Evidence don't apply; but I think this is way beyond the scope and irrelevant.

THE COURT: What's the relevance, Mr. Boma?

MR. BOMA: Your Honor, instead of critiquing, if you will, DEA's laboratory, the Government submits that a better alternative would be to independently test by a forensic chemist in a DEA certified laboratory; and I'd like this expert's opinion.

THE COURT: Well, the problem here is that we're at a 702 hearing. This is not a time when we compare what evidence the defense might have to what evidence the Government might have. The issue is whether or not the opinion expressed by the Government's witness is the product of a reliable methodology, based on sufficient facts and data. And whether or not some other tests could be conducted doesn't pertain to those issues.

BY MR. BOMA:

Q. Are you aware that DEA laboratories have forensic chemist instrument monitors who check each lab instrument every month?

A. I was not aware. I would expect that to be the type of requirement that's addressed in the lab's policies and procedures; but I haven't seen those.

Q. All right. And are you aware that DEA maintains log books for each and every piece of equipment by the unique DEA equipment serial number that we heard testimony --

A. I would certainly expect that to be the case.

Q. And are you aware that those log books, if you will, substantiating the inspections are available to the chemists who are performing the actual tests?

A. They certainly should be, and we requested them.

Q. All right. You indicated during your testimony that in your opinion there should be positive controls each and every time a test is done?

A. That's correct.

Q. Okay. Does ASCLD/LAB 17025 require that?

A. I don't know.

Q. All right. So that's your recommendation?

A. Yes.

Q. And to your knowledge, is that required by ASCLD/LAB 17025?

THE COURT: Are we talking about ISO 17025?

MR. BOMA: Yes. 17025. I may have transposed the

numbers, your Honor.

THE COURT: Well, no. You were referring to that as "ASCLD, "and the standard is an ISO as I understand it.

MR. BOMA: Your Honor, it's an ASCLD/LAB ISO.

THE COURT: All right.

MR. BOMA: It's a subset of the ASCLD 17025, as the expert testified to.

THE COURT: The expert, as I understand it, has testified that the standards are reflected in ISOs. The entity ASCLD certifies.

MR. BOMA: If I could clarify this with the expert:

BY MR. BOMA:

Q. ASCLD/LAB 17025 sets out requirements for forensic laboratories; is that correct?

A. The Judge is correct. ISO 17025 is the relevant quality standard. That is the standard that ASCLD/LAB accredits laboratories to. They're simply the accrediting agency, just as there are other accrediting agencies who can also -- Forensic Quality Services can accredit forensic labs to ISO 17025.

Q. All right. This ISO 17025 requires positive controls each and every time a forensic chemist does a laboratory test of a controlled substance sample?

A. No, it doesn't. I should explain what ISO 17025 is. It is not a highly prescriptive standard; that is, it does not

specify a mandatory or minimum frequency for particular practices.

It is universally applicable to all testing laboratories, be they environmental labs, pharmaceutical labs, food labs, material testing labs, or forensic laboratories; and it places the burden of proof essentially on the chemists and on the laboratory to determine what their data quality needs are as a function of the intended use of the data. And it's a fundamental precept of quality assurance in laboratories that as the importance of the decision that you're going to make based on analytical results increases, the level of quality control necessary to meet that standard increases.

If it's a relatively unimportant decision with relatively minor consequences, it may be perfectly acceptable to perform such testing, quality control testing with less frequency; but when it's a very important decision, more frequent quality control is merited.

The problem that I heard this morning in Ms. Chan's testimony is that it's essentially left to the individual analyst's discretion; that it's left up to the individual analyst's judgment. But when questioned further as to, Well, how do you decide or under what conditions do you run a new one, the answer was essentially, When we run out of the old one, then we get a new one.

That's not a scientifically based decision. That's

not a decision based on objective measurements of the variability of the test over time. If they came in with a data set that demonstrated I have sufficient data to show that I understand the uncertainty, the qualitative and quantitative uncertainty of this method over this period of time and that's the basis for setting my time limits for how often I need to run controls, that would be spectacular; that would be wonderful. That's exactly the kind of information that scientists make decisions based on; but "Gee, we ran out of the standard in this bottle, it's time for a new one," is not a scientifically based decision.

Q. I'll ask you, ma'am: Do known standards change over time?

A. Do what standards change?

Q. Known standards. In other words, if you have a known standard for methamphetamine, for instance, is that standard going to change with the passage of time. If you have an analyzed and evaluated known sample of methamphetamine, for instance, would that change over time? Would the mere passage of time change that?

A. Sure. When you purchase these materials, they are generally purchased along with certification statement that includes a shelf life. And the material can be used as long as it's stored and handled properly in accordance with criteria. During that period of time, then it's certified as appropriate for its use as a reference standard.

Q. All right. But we're talking here about illegal substances, controlled substances. And to date, I haven't seen an expiration date on an illicit drug package.

A. I'm sorry, sir. I must have misled you somehow; but the -- when you talk about standards, you're not talking about illicit substances. Those are manufactured to very exacting specifications. They are provided to the laboratory along with a certificate of analysis that attests to the source and purity of that material. Those are the reference standards that we're talking about.

An unknown sample seized as evidence can never, ever serve as a reference standard.

Q. All right. I don't believe you understand the lab's procedure. If I were to tell you that DEA has a chemist, a qualified chemist perform a quantitative and qualitative examination of a controlled substance and that is used as the standard, would it -- would that change your answer? These are not pharmaceutically manufactured products.

A. I must really be misunderstanding you. Are you suggesting that you receive evidence, an unknown item from the field, and somebody tests it and qualitatively identifies what they think is present and they quantitate the quantity of the material that is present and then that is repackaged or relabeled as a standard?

Q. Well, and also by reference to various reference books; in

other words, to confirm that the results of the lab testing are in fact in this instance methamphetamine, a known sample?

A. That's a scientifically unacceptable practice.

Q. All right. But methamphetamine is not lawfully manufactured to the knowledge of the Government in this case, so you're going to start with some sample, your sample is going to be from a street drug or illegal drug exhibit. Are you aware of that?

A. You're starting with an unknown.

Q. That's been confirmed by a chemist.

A. Maybe it might help me understand what you're asking me.

The reference sample that was used in this case for methamphetamine for the GCMS testing on Bates page 51 from Exhibit 2 is identified as Methamphetamine Standard 618.

Now, for traceability reasons, I would expect to be able to go to the laboratory and find out precisely the origin of that particular material that was used to generate this spectrum and that there would be a complete audit trail documenting that.

Is that your understanding?

Q. No, ma'am.

A. I'm sorry. I'm not supposed to ask questions.

Q. No. Let's move on.

You had some discussion regarding -- Do you have Exhibit 6 in front of you?

A. I do.
Q. All right. If you will draw your attention to pages 43 through 45. I'll give you a second to turn to that.
A. Okay.
Q. Under Block 4 in the upper right-hand corner of the forms that's on each and every page -- and on one page it's illegible, but the other two pages, pages 42 and 45, you'll see a series of numbers. Do you know what those are? The MK-11-0013/1? Do you know what that is?
A. My understanding from this form is that the first is a file number. The second is an exhibit number.
Q. Right. Are you aware that DEA for drug exhibits uses numerals only and for nondrug exhibits it uses N1, for instance?
A. I wouldn't know that. I haven't seen the laboratory's policies and procedures.
Q. All right. Looking to the right of that, there is a number 7160360?
A. Yes.
Q. Do you see that?
A. Yes.
Q. And are you aware, ma'am, that that is a unique laboratory assigned number for that particular exhibit?
A. That's my understanding.
Q. All right. And if you look at the various tests that are

performed, it references back to -- the lab uses the 7160360 and not the agent-submitted nomenclature. In other words, they use the 7160360 as their unique identifier in the lab.

A. That's correct.

Q. So that exhibit is uniquely identified in the lab, and it corresponds to that submitted by the agent.

A. The exhibit in total, not each discrete item contained within that exhibit.

Q. All right. Are you familiar with the language of Title 21 United States Code Section 841(a)(1)?

A. No, sir.

Q. All right. Do you realize that that statute for all of the subsections provides that controlled substances consist or for the statutory purposes -- it consists of a mixture and substance containing a detectable amount of X drug, methamphetamine, cocaine, heroin, marijuana, etc.? Are you aware of that?

A. I'm not.

Q. All right. So the fact that the exhibits were homogenized, if you will, in this instance prior to the -- I believe that was -- I'm not going to get this right. The quartering process where the sample was derived -- that's the statutory standard. Were you aware of that?

A. I am not.

Q. All right. Okay.

There was testimony during Ms. Chan's testimony and during your testimony as to the conduct of the Marquis test. Do you recall that?

A. Yes.

Q. All right. Isn't it true that the Marquis test is merely a presumptive test and not a confirmatory test?

A. Absolutely.

Q. All right. So would it be accurate to state in lay vernacular it would put you in the ballpark, if not the correct seat?

A. Yes. Screening tests are designed to err on the side of caution and to accept false positives and to try to avoid false negatives; that is, if there in fact is any meth present, they want to be sure to give a positive indication. And they can accept the fact that there are other compounds that will also give a positive indication because they prefer not to miss anything; so in general, scientifically, when you design a screening testing, that's the way you set them up.

Q. And it's basically a reagent test?

A. Yes.

Q. All right. All right. And again, I don't recall -- and I'm not criticizing you because you arrived a little bit late -- but Chemist Chan testified during direct that she took 14 samples randomly from the 12 units of the exhibit in question. And are you saying that that is not enough samples?

A. I'm sorry. I didn't see any such indication on her notes. At what point in the process did she collect 14 samples -- aliquots or subsamples at random from the evidence?

Q. Were you here for her testimony?

A. I was late. I apologize. I must have missed that part.

MR. BOMA: All right. Excuse me. If I may have a moment.

THE COURT: You may.

BY MR. BOMA:

Q. I stand corrected. The witness who testified said that there were 12 random samples for the Marquis test from each of the --

A. One from each unit? Okay.

Q. And then there were 12 samples withdrawn or extracted, whatever the correct term is, for the mass spec?

A. That is my understanding.

Q. All right. And so that would be a total of 24 random samples?

A. From the exhibit, it would be --

Q. Well, from the units.

A. From the exhibit in total, it's that many; but not any discrete unit got a total of 2.

Q. Right. But a total of 24?

A. Correct.

Q. All right. And if that isn't sufficient, what number would

be?

A. With all due respect, I can't answer that kind of a question because I haven't seen the laboratory's sampling plan, what criteria they use, what statistical assumptions they make. That's a very complicated question, and it depends on the assumptions and on the intended use of the data. And that's why we requested the sampling plan, as is explicitly called for by the quality standards.

Q. All right. Referring to the mass spec -- spectrum or infrared spectrum, would the spectrum change on those instruments for the same compound, if you're examining the same compound? In other words methamphetamine vs. suspected methamphetamine?

A. I'm trying to understand; but I'm sorry, I really don't understand what you're asking me. Would the spectrum change?

Q. For the identical compound.

A. If I took a sample of known and documented purity and I took subsamples of it and I sent it off to a bunch of different laboratories to be tested and looked at the mass spectral results from each of them, are you asking me would they all be the same?

Q. No. If you ran -- I'm talking about the known here.

A. I was talking about a known.

Q. All right. And within -- with the exception of minor percentages that are due to the instrumentation, plus or minus

3 percent --

A. I would love to see the lab's procedure that specs those differences. That's the dilemma that I'm in. You're absolutely right there is normal variation. Mass specs, there is a tuning process that you have to go through. I have no idea how frequently this instrument was tuned in relation to when the testing was performed. Tuning is kind -- for mass spec kind of analogous to calibration of the chromatography part of the instrument. And, yeah, depending on how you tune and what criteria you use for your tune, you'll get different results for the mass spec.

It's not a -- it's not an identical spectrum every time you run the same sample. There is normal variability associated with the measurement process.

Q. All right. In this case the concentration or what the chemist referred to as a the "quantitative analysis," which is the purity of the drug in question, it's, I believe, plus or minus 3.6 percent. Does that account for instrument variations or other -- there has to be some variation assigned to the machine that you're using or the instrument.

A. Yeah. I couldn't -- I couldn't tell from the records that I received.

What you're asking is is that the total uncertainty, is that what's referred to as an "uncertainty budget"? An uncertainty budget does include all potential sources of

uncertainty introduced at the measurement process. It means when everything is in control how much uncertainty is there in the final result.

From what it appeared from the limited amount of data that I got, it appeared that the mass measurement uncertainty is included in that computation. I can't tell what else is.

Ms. Chan referred to that it included all possible sources of uncertainty, or something to that effect. Boy, I'd love to say it if that's the case; but I haven't seen that. And it's a very complicated process determining an uncertainty budget.

Q. And you've seen the summary lab report in this instance?

A. That's correct.

Q. All right. And my recollection without looking at that particular document -- it says in the notes it's to a 95 percent probability. In other words, the weight is plus or minus 1 gram to a 95 percent level of certainty because nothing is a hundred percent?

A. Correct. Nothing is a hundred percent. But it's only addressing those factors that they included in the uncertainty budget, and I don't know what all -- how extensive that list is.

Q. All right. And would it -- would it affect your opinion with the new information that you didn't have before I began examining you that these lab instruments are calibrated and

checked monthly and logs are maintained for each and every instrument that we discussed? Not for the reagent test but -- that's not an instrument -- but for the other tests. Would that change your opinion?

A. No.

Q. Why?

A. Because I'd need to see the data.

Q. All right. But assuming they exist -- exist in the form that I told you, would that change your opinion? In other words, if they were properly calibrated per ISO standards and per DEA laboratory manual standards for the machines in question.

A. Well, it's certainly better than the understanding that it can be 10 months between analysis of an unknown and analysis of a known; but again, without knowing what criteria are used to determine acceptable performance, I just can't make a blanket judgment like that's good enough or not good enough.

Q. Right. But you can't really say that it's not good enough, either?

A. No. I can't. I would just advise a data user that they haven't proven its reliability.

MR. BOMA: Excuse me, your Honor.

No further questions. Thank you.

MR. EDELMAN: I have no redirect, your Honor, and no other witnesses.

THE COURT: Thank you.

Thank you, ma'am. You may step down.

Any rebuttal testimony?

MR. BOMA: Yes, your Honor. We'd like to recall Chemist Chan very briefly.

THE COURT: All right. Please step up. You remain under oath.

(Anthea Chan was recalled to the stand.)

MR. BROWN: Your Honor, may I just? I need to advise the Court in a few minutes I probably will depart, and I didn't want to be rude but --

THE COURT: You're free to come and go as you please.

MR. BROWN: Thank you, your Honor.

MR. EDELMAN: You know, I would like to insert an objection as to the purpose of this rebuttal testimony, having not heard it yet, that it in the event it is the type of testimony that could have been presented initially, it's not appropriate to be rebuttal testimony.

Perhaps I'm premature in my objection.

THE COURT: Mr. Boma, do you care to make a proffer?

MR. BOMA: Your Honor, this is in response to the defense expert. And the Government was not privy to what the defense expert was going to testify to until that testimony occurred. And the testimony that we seek to elicit is further testimony regarding the scale of the blanks vs. the unknown.

Also some limited testimony regarding standards that they possess unique patterns that don't change over time.

I want to talk about the confirmation of a known standard by DEA when they're performing the tests how often they are confirmed.

And also, there was some cross-examination and some questioning regarding the training and testing -- competency testing of all chemists at the DEA lab, including Chemist Chan.

THE COURT: And why couldn't this have been presented in the direct examination?

MR. BOMA: We weren't aware of the precise nature of the attack, your Honor.

THE COURT: Well, except that the burden of proof is on the Government to establish that the opinion is the product of a reliable methodology reliably applied based on sufficient facts and data. In other words, it's your burden from the getgo. And if there is something that was omitted in Ms. Chan's testimony as to the methodology she used or as to the data or information she considered, then that's something that should have been presented.

I'll allow you to inquire; but I also will allow Defense Counsel to recall his expert for further examination after this testimony.

MR. BOMA: Yes, your Honor. And the Government would note no objection to that procedure that the Court envisions

here.

DIRECT EXAMINATION

BY MR. BOMA:

Q. Turning your attention, Ms. Chan, to page 43 --

A. Bates stamp?

Q. Cues me?

A. The Bates stamp?

Q. Yes.

THE COURT: In Exhibit 2?

MR. BOMA: Yes.

BY MR. BOMA:

Q. All right. Could you summarize what that is again just very, very briefly?

A. That is the front of the chemist worksheet that all of the DEA chemists are provided with so that we may mark our description of the evidence as we receive it, as well as our results and how we packaged the reserve evidence when we were all finished.

Q. All right. And is the lab number that appears in Block 4 -- is that a unique identifier for the laboratory?

A. Yes, it is.

Q. Does that follow that exhibit throughout its --

A. Yes.

Q. -- call it a life span, but throughout its existence in your lab?

A. Yes, it does.

MR. BOMA: Excuse me, your Honor.

BY MR. BOMA:

Q. Directing your attention to page 29, there was testimony during your cross-examination and I believe also during redirect as to that particular test. What does that graph represent?

A. This graph is the solvents blank that I ran before I ran the samplings from the exhibit.

Q. All right. And there are two graphs that appear on that page. Do you know, are those both the sample?

A. Yes. The top one is the chromatogram, as in -- it shows a timeline of when peaks will come out or components of the sample will come out of the instrument into the mass spectrometer.

And then the bottom is the mass spectrum that I selected for that particular peak between 3.362 to 3.472 minutes. And I blew up you the chromatogram so that -- It's a transparency thing actually in our report so that any peaks that we do see, we want to make sure that we show it properly.

And that is what I did on this page.

Q. All right. And is this the test in question that had suspected carryover?

A. Yes.

Q. And where is that found? Which graph represents the

carryover, in your view?
A. The carryover is basically just -- the major concern of carryover would be on the bottom in the spectrum, the 58 peak with the abundance that is very similar to the environmental 44 carbon dioxide peak. But it is there, which it shouldn't be.
Q. All right. And the difference, without getting too technical: 44 to 58 -- that's a difference of 14 between an inert substance and what the blank had on it?
A. The 44 generally will show up in our blanks due to the carbon dioxide. But that's a normal environmental or system peak that is normal to show, and it does not have anything to do with elicit compounds.
Q. So it's basically a baseline, if you will?
A. Yes.
Q. And the 58 is relatively low; is that correct?
A. Absolutely.
Q. All right. And on the upper graph on that page, page 49, what's significant about that from your --
A. What's significant is that the baseline itself, all those ups and down throughout that chromatogram, is what we call the background of the instrument. So relative to the background, if we can see that, we know that that peak that we do see at 3.3 minutes is a relatively low peak.
Q. And you're referring to the top graph?
A. Yes.

Q. All right. And the abundance there is 2400. Of what significance is that?
A. That's an arbitrary number. 2400 is just assigned compared to whatever our baseline is.
Q. All right. When you found the suspected carryover and began running the unknowns, if you will, was there a difference in the indications on this instrument?
A. Well, the abundance, the relative abundance that is assigned to the peaks, there was a difference between 2400 for the blank and 12 million for the samples, the first sample.
Q. All right. Is that found on the following page in the upper graph?
A. Yes.
Q. Page 50?
A. Yes.
Q. Chemically, without getting into all the nanograms for a fortnight, or whatever the measurement is, could you explain what those numbers mean in lay terms? In other words the 1.2 million -- I believe that's what that top number on the left-hand side of the graph.
A. It's 12 million.
Q. 12 million. Okay. And what's the significance of that vs. the blank?
A. Well, the significance is that if I had just left the blank on its scale, on the same scale as the sampling, which is a

proper thing to do even in most analytical chemistry, to show that your blank -- you do not see any peaks, I could have printed it on the same scale as I printed my samples. But I chose not to do that because I wanted to be transparent in my work and show that when I went back to the instrument after the sequence had run and I checked that blank, I realized personally that there was some possible carryover in the instrument; so I wanted to be able to show that in my report.

And to show that the solvents was not contaminated, I reran that same vial right when I checked my sequence data and presented on page -- on page Bates Stamp 48 -- I showed that there is no longer that carryover that the instrument first showed.

And on top of that, I have shown in each of the samplings that the methamphetamine peak is in huge proportion compared to that carryover that was in the blank, thus showing that my solvent was not contaminated and the blank was in fact clean.

Q. All right. And the solvent you're referring to: Was that the same solvent that you used in conducting your various tests of the unknowns here?

A. Yes. In forensic chemistry, as in all analytical chemistry, when you run, your blank should be the same matrix, or solvent in our case, as the one you used in your samples.

Q. Would it be accurate to state that, turning again to the

bottom of page 49 -- that the 44 is basically -- I'm going to call it "inert." That's just your blank's physical characteristics. Is that accurate?

A. It's inert. It shows up -- it's generally a carbon dioxide peak.

Q. And then the reading of the carryover is the difference -- is it the difference between the 58 and the 44?

A. I'm not sure what your question is.

Q. All right. The 58: That's where you saw possible carryover?

A. Correct.

Q. All right. But is that a significant spike?

A. I believe it's significant enough to point out, but it's not so significant that I cannot determine the results from the samplings.

Q. Okay. And -- all right. So the unknowns were 12 million, whereas the suspected carryover is down to 58, for comparison purposes?

A. The blank is down at 2400.

Q. All right.

A. Yes.

Q. But the carryover --

A. Yes.

Q. -- is 58. So it's basically a ratio of 12 million to 58?

A. No. It's 12 million to 2400.

Q. Okay. All right.
A. If we're looking at the 58 peak, the abundance on the bottom spectrum is 6 million or over 6 million for the 58 peak, whereas in the carryover blank, it's just over 220.
Q. Okay. With regard to your standards, could you summarize how those standards are obtained for your use?
A. As far as I know, the standards are obtained either from a commercial source or from our special testings lab --
MR. EDELMAN: I'm going to object as speculation, your Honor.
THE COURT: I'm going to overrule your objection because she says as far as she knows. I heard that.
THE WITNESS: So either from a commercial source or our special testings lab, or they have been verified at our laboratory. And using public literature, as well as our methodologies, we can verify whatever standards we will put into our reference standards to be used in case work. We'll use all the possible data that we can obtain for it to confirm its identity as well as its purity.
BY MR. BOMA:
Q. All right. Do the standards have unique patterns on the various instruments when you run them, if you will, or compare them?
A. The -- well, specific compounds will have its own unique pattern for IR, for mass spectrum.

Q. All right. Depending on the controlled substance in question?
A. Yes.
Q. All right. And will that standard for each respective drug or controlled substance change?
A. It should not with the same instrument under the same parameters.
Q. All right. Does the passage of time in any way affect that?
A. As far as mass spectrum and infrared spectroscopy, no.
Q. And your standards, if you will, for the different controlled substances: How often are they confirmed?
A. Our standards are checked every three years, once when we receive them and then every three years. And then all that data is kept so that we can go back and check any data that we have on that specific working standard.
Q. All right. During the ISO 17025 accreditation process, were your laboratory manuals reviewed by the auditors?
A. As far as I know, yes.
Q. All right. And in reviewing the reports, no objections were noted or corrective actions as to the laboratory manual?
A. Not that I know of.
Q. Okay. And it's my understanding that when the auditors, ASCLD/LAB auditors, perform an audit, they interview each chemist assigned to the lab or performing analysis both?

A. They can randomly select any chemist they choose and we would have to provide them with an interview.
Q. All right. And pursuant to the ISO 17025 standards, is each chemist given at least one sample a year for verification purposes or quality control?
A. Each chemist is required to complete one proficiency test annually, if not more.
Q. And what's a proficiency test, if you would elaborate?
A. A proficiency test is one in which we will receive the evidence as we do our normal evidence, except that we perform a test on it in which another lab or management knows the results, too, but we do not. So we analyze it just like any other exhibit that we would, and we determine the qualitative and the quantitative properties.
Q. All right. And, of course, it's known to someone what it is but not to the chemist performing the analysis; is that correct?
A. That's correct.
Q. And last year, how many of those testings did you do, competency tests?
A. I had two proficiency tests.
Q. Did you pass both of them?
A. Yes, I did.
Q. And I believe there is another procedure under the ISO 17025 procedures and DEA operating procedures where at least

one exhibit that a year that you would analyze is checked by another chemist.

A. Yes. At least one exhibit of mine that I have completed will be randomly completed and distributed to other chemists to verify.

Q. And how many of those, for instance, were done in your case last year?

A. Just one.

Q. And what were the results?

A. I actually don't know that one.

Q. All right. If there was a problem, would you be advised?

A. Yes. I would be taken off the bench immediately.

Q. All right. So no news is good news in that circumstance?

A. Exactly.

Q. And in terms of your training, how many samples or -- yes, samples, did you analyze during the course of the training itself?

A. I analyzed approximately 40 samples throughout the training, and then at the end we -- I was given 11 competency tests to complete completely on my own without the help of the senior forensic chemists to show that I had learned the policies, procedures, and guidelines to follow for case work.

Q. All right. And --

MR. EDELMAN: Excuse me, Judge. I'm going to have to object at this point, in order to preserve my objections. I

believe your permission to have some rebuttal testimony was pursuant to Mr. Boma's offer of proof, and I think he's gone way beyond that which is rebutting my witness. This is all material that he could have gone into either in his direct or redirect. So I would move to have the testimony stricken at this time and for the Court to allow me to have a continuing objection.

THE COURT: Response?

MR. BOMA: Your Honor, this is merely elaboration on the testimony elicited earlier with more detail in light of the defense expert's attack, if you will, upon the procedures employed by the laboratory.

THE COURT: I deny the request to strike. It's based upon the fact that this examination exceeds the proffer that was made by Mr. Boma, and I understand that proffer to have been a brief summary of the testimony.

But I will tell you with regard to this particular line of inquiry, it is not dispositive as to my analysis. What this particular witness' qualifications are have been described. And therefore, further supplementation with regard to how many samples she analyzed through her training or what she did will not be determinative as to whether she used a reliable methodology in order to reach her opinion.

MR. BOMA: In that case, your Honor, no further questions.

THE COURT: All right.

Thank you.

Cross-examination?

MR. EDELMAN: May I have a moment, your Honor?

THE COURT: Uh-huh.

MR. EDELMAN: I have no questions.

THE COURT: All right. Thank you, ma'am. You may step down.

MR. EDELMAN: I have no surrebuttal, your Honor.

THE COURT: All right. Then we'll have brief argument. Then we'll take a recess and we'll reconvene and I'll issue an oral ruling.

Okay. Five minutes per side: Will that be adequate?

MR. BOMA: Yes, your Honor, for the Government.

THE COURT: Okay.

MR. EDELMAN: Yes, your Honor.

CLOSING ARGUMENT

MR. BOMA: Your Honor, as set forth in this court's Rule 702 procedures and specifically in footnote 3, which paraphrases Rule 702 -- in fact, it's almost a verbatim excerpt from Rule 702 -- the Government respectfully submits that our expert chemist here has sufficient qualifications to testify regarding the tests that were conducted and the results thereof and finally to give her opinion as to what the controlled substance in question was to a degree of certainty -- not

certainty but 95 percent probability, which is the standard set forth in the expert's report.

We would note that Ms. Chan in detailed testimony stated and demonstrated through her testimony that she had obtained sufficient facts or data to conduct the tests that she testified to.

The standards are reliable principles and methodologies employed by her, were in conformity with ASCLD/LAB ISO 17025, which the Government submits is a -- the -- basically the national standard, if you will, for forensic laboratories, and that this expert did reliably apply the principles and methodologies to the facts and data obtained in order to reach the opinions set forth in her one-page summary report.

Therefore, within the errors ascribed to the different analysis -- that is, plus or minus 1 gram, plus or minus 3.6 percent as to the quantitative or purity analysis, and the amount of pure drugs in this case, the Government submits that it's 5,319 grams of meth at a purity level of approximately 96.3 percent purity and that converting that to a hundred percent purity of methamphetamine or actual yields in excess of 5200 grams of methamphetamine actual.

Thank you, your Honor.

THE COURT: Thank you.

Mr. Edelman?

CLOSING ARGUMENT

MR. EDELMAN: Thank you, your Honor.

I'm not of sufficient education and training to be able to evaluate all this scientific evidence, and I think the Court is in a better position to determine that. You've heard the testimony of the two chemists exerts, people trained in this field.

I would submit to you that the burden has not been carried by the or met by the Government.

Had we be given or shown to you the written documentation to substantiate most, if not all, of the testimony of Ms. Chan, we may not be in this -- this courtroom today to attack the 702 requirements.

And what is I guess summarized, that I can summarize for the Court, is that in Exhibit 4 signed by Mr. Moriwaki, who did not testify, the supervisory chemist with the DEA Western Laboratory in San Francisco -- can be summarized to this court as "We have met our burden because we're the DEA lab, and that's why you should deny the or grant -- deny the defendant's attack and not suppress the evidence."

On page 7, which is of Exhibit 4, our -- the -- I guess the supplement to our 702 submission, they responded to our request: "Provide unedited Corrective Action Request (CAR) is a chief counsel decision." They're determining this is not a discoverable document.

THE COURT: Counsel, let me interrupt for just a minute. Today we're not talking about discovery.

MR. EDELMAN: I understand.

THE COURT: We're not talking about what you're entitled to. We're simply talking about what has been presented here in this courtroom.

MR. EDELMAN: Yes, thank you.

THE COURT: And I'm somewhat confused by the inclusion of all kinds of pleadings as the documents that have been submitted because I'm not ruling on pleadings.

MR. EDELMAN: I understand.

THE COURT: I'm only reviewing the evidence you've presented here. So if you could focus in on that evidence, it would help me.

MR. EDELMAN: Thank you.

I would summarize and just ask the Court to suppress the evidence because the Government has not met its burden.

THE COURT: Of establishing what?

MR. EDELMAN: That their qualifications of the -- of Ms. Chan; that the principles that she relied upon were not reliable, and any principles or methods that she applied the facts to that she -- which were limited and we believe are inadequate are also not reliable and not sufficient. So she's failed on all four of the requirements, or they've failed on all four of the requirements of 702.

THE COURT: All right. Thank you.

Reply, if any?

MR. BOMA: No, your Honor. Thank you.

THE COURT: We're going to take then a recess and reconvene at 3:30. I'll give you a ruling at 3:30. We'll stand in recess until then.

Ms. Glover, would you gather exhibits and bring them back to chambers.

(Recess at 2:55 p.m.)

(Reconvened at 3:35 p.m.)

THE COURT: Please be seated.

RULING

THE COURT: This matter is before the Court on Docket No. 93, which is a request for a 702 determination of an opinion rendered by the Government's chemist employed by the DEA. That opinion is that the combined and homogenized several packages of unknown substance consisted of 5,319 grams net weight containing methamphetamine hydrochloride with a purity of 96.3 percent plus or minus 3.5 percent.

I've had the opportunity to consider the evidence that's been presented and the arguments that have been made by Counsel.

Thank you, Mr. Boma; and thank you, Mr. Edelman.

And in making my determination, I am applying Rule 702 of the Federal Rules of Evidence, which provides that if

scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education may testify thereto in the form of an opinion or otherwise if (1) the testimony is based upon sufficient facts or data (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

This rule was changed in -- effective December 1, 2000. And it replaced the old Rule 702 that focused solely upon the qualifications of a witness in expressing an opinion: If the witness had the requisite degree of expertise, training, knowledge, skill, experience, etc., in a particular area, then the witness could express any opinion in that area of expertise.

No longer is the admissibility of an expert opinion linked solely to the witness' expertise. Instead the opinion must be derived from a -- the use of a reliable methodology that was reliably applied, considering sufficient facts and data as specified by the methodology. It is a scientific test.

Now, Rule 702 sets out the foundational requirements for the admissibility of an opinion. And for purposes of today's hearing, the Court is not evaluating the merits of the opinion, the persuasiveness of the opinion, whether the opinion

matches the charges that have been brought in this case, whether the opinion is adequate to address the charges in this case. That's not the function of this hearing. The only function of this hearing is to determine whether the foundational requirements of Rule 702 have been met.

And here the defense challenges this opinion, contending that it was not derived using a reliable methodology reliably applied, based on sufficient facts and data as specified by the methodology.

With regard to hearings of this nature, it is the proponent of the expert testimony who bears the burden of proving the foundational requirements. That's the Government in this case. And that burden is recognized in a number of cases, *United States vs. Nacchio* and *Ralston vs. Smith & Nephew Richards Inc.*, found at 275 F.3d 965, a Tenth Circuit, 2001 decision, as well as in the underlying *Daubert* case that gave rise to Rule 702.

The proponent of the opinion need not prove that the expert is indisputably correct, but the proponent must show that the method employed by the expert in reaching the conclusion is sound and that the opinion is based on facts which satisfy Rule 702's reliability requirements.

The standard of proof is a preponderance of the evidence; and where there is no proof, the proponent cannot prevail.

The evidence as presented is as follows:

Ms. Anthea Chan, a chemist with the San Francisco, California Office of the DEA conducted certain tests on suspect substances between November 8 and November 10, 2010. These suspect substances came to her marked as a single exhibit, but they were comprised of 12 different packages or units of an unknown substance. The packages were wrapped differently, they had different colors, and she utilized a number of tests in order to determine the quantum of methamphetamine in these packages treated as a single unit.

She began by recognizing that there were 12 different packages; but in her records, she did not mark the 12 different packages separately, note their different characteristics, or compare the tests that she conducted on samples from each individual package separately.

Her first test was a Marquis color test. In this test, she was seeking to determine whether there was a substance that was either in the family of, or the precursor to, or that which methamphetamine would be a subset of. She determined using the Marquis color test that each of the 12 units turned an orange/brown color. But in making that determination, her assessment of orange/brown was a subjective assessment, there being no color chart or no table to compare the results on each of the 12 units to.

In conducting this test, she began with the use of a

blank. And that essentially was the testing of the solvent that she intended to use to dilute parts or the samples from each of the 12 units.

She determined in using her solvent that she was getting a reading of some methamphetamine, not a quantity but just a little bit. And she noted in her records what that amount was. But rather than proceeding to determine what was causing that reading, she proceeded then to test each of the 12 units thereafter. And at the end of her testing of the 12 units, she retested her solvent and concluded that it was not the solvent that was generating -- that generated the original reading when the blank was tested.

She conducted a second test, which was the gas chromatography, spectography -- or I may have mispronounced this -- spectro -- I can't say it quite right. We'll just use the "gas chromatography test" -- and ultimately concluded that each one of the 12 units showed the presence of or the possible presence of methamphetamine.

Her next step was to prepare a composite. And to do that, she took some, I'm assuming, equal amounts from each of the 12 units. She combined those. She poured them out onto a lab paper in an upside down cone shape and began to cut the substance, quartering it repeatedly until she had a small enough quantity to grind and pass through a 20-mesh sieve.

She then conducted subsequent tests on this compound,

ultimately yielding a quantification of the concentration of methamphetamine in the compound.

At no time during any of these tests did she use a standard on the same equipment that she was using to perform the tests. She testified that she had used a standard to check calibration and performance of some machines a month before and with regard to other machines up to 10 months before; but there was no comparison of a standard -- use of a standard using the same machine in temporal proximity to the tests she conducted.

She testified that she was not familiar with the requirements imposed on the DEA lab or the protocol that the DEA lab required to be used or whether that protocol complied with any generally accepted standards.

She was, however, familiar with the fact that the DEA lab had been accredited prior to the time that she conducted the tests, and she testified that she had been trained by the DEA lab supervisors in performing these tests.

The record does not reflect the DEA's protocol for the performance of any of this testing. It does not reflect evidence that the protocol was accepted, is treated as generally reliable, or it complies with scientific standards applied in other laboratories. And the record does not reflect that Ms. Chan, even though she carefully explained what she did -- that her actions complied with an established protocol; in other words, that she reliably applied a reliable

methodology.

If I were to stop at this point, due to the absence of that evidence in the record, I would find that the opinion rendered by Ms. Chan does not have the requisite foundational requirements to be admissible under 702, not because she doesn't have qualifications to perform the tests that she did but because the Government has not established a reliable methodology that was reliably applied based on sufficient facts and data as specified by the methodology.

However, putting aside the burden of proof, I know that the evidence also establishes certain problems in the methodology that was used by Ms. Chan that renders it unreliable relative to generally accepted standards in forensic laboratories.

The Government did not present any evidence as to what the generally accepted standards for forensic laboratories conducting testing of drugs are, but the defense did through Ms. Janine Arvizu. Her experience and qualifications are in exactly that area: the assessment and development of reliable quality standards for laboratory operations and also for laboratory accreditation.

She is intimately familiar with the standard that is to be applied with regard to testing of this type and other types, which has been referred to as ISO 17025. And she has testified as to several aspects of the process used to -- by

Ms. Chan and the fact that this process does not comply with ISO 17025. Her testimony in this regard is unrebutted.

The Court focuses on several deficiencies pointed out by Ms. Arvizu:

First the DEA's failure to maintain sample integrity. When the exhibit comprised of 12 different units came to Ms. Chan, she initially recognized the individuality of the different units, but she ultimately compounded or combined samples from all of them for the ultimate testing. And in doing so, she did not note any differences between those particular units.

Now, the Government argues that that doesn't matter because the charge here is a collective charge, a charge as to the entirety of all of the unknown substances that were tested; but that is arguing from the conclusion in order to justify the process. And Rule 702 does not allow that. In deciding whether a methodology is reliable or not, case law specifies particularly what the Court should consider. Among the various factors are whether the technique has been subjected to peer review and publication, whether there are known or potential rates of error with regard to specific techniques, whether the approach has general acceptance in the scientific community, whether the witness can articulate the process that he or she applied, whether the industry adheres to a particular practice, and whether the results can be duplicated in a reliable

fashion.

Indeed, that is exactly what Ms. Arvizu attempted to do in reviewing the records supplied by the Government. She stated in her letter of February 18, 2011, which is part of Exhibit 3 that she, quote, "attempted to reconstruct the practices, protocols, and results that were relevant to the qualitative and quantitative conclusions regarding controlled substances and the evidence seized in the subject case."

She attempted to evaluate the laboratory's actual practices in the subject testing to determine whether they adhered to quality requirements and whether they complied with universally accepted quality standards designed to ensure the quality and reliability of reported controlled substance test results. However, only a very limited amount of laboratory discoverable material was made available for her review. And because so much of the key information was not provided, it was not possible to determine or evaluate the laboratory's technical requirements applicable to the testing performed, nor was it possible to assess the efficacy of the laboratory's quality controls during the subject testing.

That's exactly the position the Court finds itself in because it does not have evidence as to the protocol that was used, the reliability of the protocol compared to other labs, or whether Ms. Chan complied with the protocol in a reliable fashion.

The fact that she was DEA-trained, the fact that the DEA lab was accredited, does not change this. An accredited lab and a trained chemist nevertheless can use a process that is unreliable. It does not substitute for the reliability that the Government is required to show.

So we return to the deficiencies pointed out by Ms. Arvizu. One is the sample integrity, the failure to separately segregate the different units, to mark them, and to note their differences as well as their similarity.

The second problem was that there was no use of a standard sample to confirm the reliability and the accuracy of the machines used to test the unknown quantity at the time of testing.

As Ms. Arvizu explains, in order to have a complete, scientifically valid test, there must be both a blank and a standard. And here there was no standard either at the time of testing or with regard to some of the machines at a time in close proximity to the time of the testing.

Now, it may be that the procedure used by the DEA is acceptable under generally acceptable standards; but there is no evidence to establish that.

The next deficiency that she points out is that the determination of when to use a standard was entirely subjective based upon the chemist. And here, Ms. Chan, who completed her training in 2009, a year before this testing occurred, made the

determination as to whether a standard should be run in order to test the accuracy of the machine's determinations.

Ms. Arvizu's analysis is quite compelling that if you have differing chemists using differing standards -- and in this case I'm using "standard" in a -- in a different sense: If you have differing chemists each determining different times that they will use a standard to evaluate the machine and the measurement, you have a potential inconsistency in the outcome.

Now, it may be that Ms. Chan was following some protocol by the DEA; but we don't know that because we don't have the protocol from the DEA.

She -- Ms. Arvizu points out yet another distinction, which is reflected on page 93 of Exhibit 2. On page 93, there is a test which is reflected, and it includes both a blank and the unknown substance and a standard. Here, however, the blank and the unknown substance are tested on one machine, but the standard is tested on another machine; and therefore, the standard doesn't act as a measure of the accuracy of the machine on which the unknown substance was tested. The Government argues that standards are consistent; that they don't deteriorate over time, and that they can be used at any particular time with no effect on the outcome.

That misses the point. The purpose of the standard is to test the machine. It is to verify that the machine is operating correctly at the time that the unknown substance is

being tested.

The next example that Ms. Arvizu points to is Ms. Chan's protocol in addressing what appeared to be contamination in the use of a blank sample. When she ascertained that her solvent, which was the blank sample, was registering some methamphetamine, rather than determining the source of that measure and eliminating it, she simply proceeded to test all of the 12 units and then retested the solvent. When she retested the solvent, she didn't get the reading. And that logically suggests that the problem wasn't in the solvent, but it does not address what the cause of the reading was or whether it affected the test results in any of the units that were tested.

Now, the Government argues that it doesn't matter because it was such a small reading; but that's not the issue. The issue is whether or not a reliable methodology was used. And Ms. Arvizu's testimony is that the customary procedure for dealing with an apparent contamination of a blank sample is to ascertain why that sample is testing as contaminated, eliminate the contamination before proceeding to test the remaining units. Her testimony with regard to that is unrebutted.

Finally, Ms. Arvizu points out that in the creation of the composite from the 12 units, a sampling mechanism or protocol was used; but there is no evidence before the Court as to the sampling protocol.

She's testified that two different sampling protocols or differing sampling protocols are used when a population is homogeneous and when a population is heterogeneous. When it's heterogeneous, the sampling protocol takes that into account. When it's homogeneous, you do not need to account for any difference among the units that are being combined.

Here, there were apparent differences between the units. They were packaged differently and they were of different color. Without knowing what the sampling protocol was and without knowing that that sampling protocol was appropriate for these circumstances, the Court is unable to determine that the protocol used by Ms. Chan was reliable and was reliably applied.

Mr. Edelman argued in his closing that essentially the Government's position is that because the DEA through its chemist rendered an opinion, the Court should simply accept the opinion. I don't think it's quite that simple. Here the Government has said the DEA conducted these tests; that Ms. Chan is a trained chemist; that she has used her training that she received from the DEA, and that the DEA lab that she works for is accredited.

Unfortunately, all those things being true nevertheless requires the Court to assume that the DEA has a protocol that is generally accepted and reliable and that Ms. Chan followed it reliably. As to that, I cannot conclude

in favor of the Government based on the evidence that's been presented.

I therefore find that Government has failed to establish the foundational requirements of a reliable methodology being reliably applied to derive the opinion that is proffered, and such opinion is not admissible for purposes of trial.

Any need for clarification or further explanation?

MR. BOMA: No, your Honor; but I'd like to supplement the record because there is an error in the Court's findings.

THE COURT: All right.

MR. BOMA: Your Honor, the Court incorrectly stated that the homogeneous exhibit was comprised of samples from the 12 units. That is incorrect. It was a mixture of all 12 subunits from which the sample was cubed or quartered, and the sampling was from the composite. But it was not samples from the units. It was a combined mixture of all 12 units.

THE COURT: So it was composed all of the substance in each of the 12 units.

MR. BOMA: That is correct, your Honor.

THE COURT: And as a consequence, it cannot -- the original testing cannot be duplicated; correct?

MR. BOMA: Your Honor, the Government submits it's irrelevant because it's a mixture and substance and the mixture and substance was correctly sampled and the tests were

conducted.

THE COURT: All right.

MR. BOMA: There was the one discrepancy the Court noted with respect to the trace amount of methamphetamine, but there were six tests in total in this case. But the statutory requirement is a mixture and substance containing a detectable amount of methamphetamine. And it was not samples from the units; it was a compounded mixture of the suspected controlled substance.

THE COURT: Thank you. I stand corrected with regard to that, but it doesn't change the outcome. And the reason it doesn't change the outcome is the reliability of the methodology hasn't been established. And it doesn't matter what the charge is. The methodology by which you reach the conclusion has to be inherently scientifically reliable. And I don't have any evidence that this methodology of combining all of these units and compounding them is a reliable methodology. It may be, but I don't have any evidence of that. I have no evidence as to what protocol the DEA was using or how that protocol complies or compares to the protocols used in other labs. And the fact that it's the DEA doesn't resolve that.

Any need for further clarification or explanation?

MR. EDELMAN: No, your Honor. Thank you.

THE COURT: Mr. Boma?

MR. BOMA: Your Honor, the Government would

respectfully request leave of the Court to provide the documentation that the Court found deficient to the defense to supplement, if you will, the discovery in this case and then, if need be, ask that the Court set it down for a further hearing upon the receipt of that information, because the defense expert -- In many instances, the Government views -- there was deemed to be an insufficiency of data for the data to be replicated or to be examined. And if that information is provided to the defense expert -- Basically the expert's opinion was largely that there was insufficient information available and the expert could not opine either way because of the claimed deficiency in discovery. And the Government submits that it should have the opportunity to supplement the discovery with the discrepancies noted by the Court and allow the defense the opportunity to review that to see if the documentation is adequate.

THE COURT: Response?

MR. EDELMAN: Not acceptable. They had their chance; and I believe they arrogantly refused, they ignored our request. Ms. Arvizu put it in a letter. And now that they're at the end -- the short end of the Court's order, they're now, I suppose you can call it yelling "uncle," and they want to now give me what we've asked for.

I think that they've had their chance, with all due respect.

THE COURT: Reply?

MR. BOMA: Your Honor, the Government submits that when it filed its Rule 702, it was not a blanket, arrogant assertion. Discovery provided in this case went above and beyond the discovery provided in ordinary cases.

And as to the individual units, those obviously cannot be -- they've been combined into a composite exhibit; so as a practical matter, that cannot be done. But the Government submits that the sampling of the individual units, when it's combined into an entire composite exhibit -- that those tests can be. And the Government would request leave to rerun the tests where we had the trace carryover amount, because I think the Government is entitled to conduct a test. The Court pointed out the discrepancy that the Court found in that test, and --

THE COURT: Wasn't the trace carryover amount determined prior to the combining of all of the units?

MR. BOMA: Ms. Chan, if the Court will take a proffer --

THE COURT: Sure.

MR. BOMA: -- as to what she just told me, the -- the testing that was the gas chrom --

THE COURT: Gas chromography or --

MR. BOMA: I can't say it either, your Honor. Spectroscopy. But those tests were done when the units were

still intact as units.

THE COURT: Right.

MR. BOMA: But the other tests -- and the Government submits it's irrelevant what the individual units are because the standard at trial and the standard for sentencing is the mixture and substance in its entirety, and that would not change regardless of the sampling of the units. It's just -- it's mathematically and chemically impossible.

THE COURT: Right.

MR. BOMA: So that the relevant tests from the Government's point of view is of the composites. The other tests were done, and there was one flaw that the Court pointed out in the gas chromatograph; but the other tests were done with the samples which were properly extracted from the composite, so those results would remain unchanged.

THE COURT: Thank you.

I don't think anyone here is arrogant. I think we have very fine counsel, and I don't think there is there is any response or presentation here that's been arrogant; but I do think the Government has had two opportunities to come forward and establish a generally reliable protocol, a generally reliable methodology, either in the form of submitting the documents to the defense in requests for discovery, which dates back now more than six months, or at this hearing. And having had two opportunities to do this and having failed to do so on

both occasions, the Court denies the request to supplement the opinion or to conduct further testing or to supplement the information supplied to the defense.

The opinion is unsupported, and the Court's ruling with regard to 702 will not be reconsidered on a new record.

Any need for clarification or further explanation?

MR. BOMA: No, your Honor; but we'll seek leave to -- we'll move for an interlocutory appeal of the Court's order --

THE COURT: All right.

MR. BOMA: -- because it's case-dispositive. And the Government has that right, your Honor.

THE COURT: I understand that.

MR. BOMA: So we will be seeking leave to appeal. I have to confer with the appellate section.

THE COURT: All right.

MR. BOMA: Thank you.

THE COURT: Thank you.

MR. EDELMAN: Thank you, your Honor.

THE COURT: Thank you all. I wish you a good evening. We'll stand in recess.

(Recess at 4:20 p.m.)

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6	39	40			

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REPORTER'S CERTIFICATE

I certify that the foregoing is a correct transcript from the record of proceedings in the above-entitled matter. Dated at Denver, Colorado, this 21st day of April, 2011.

S/Paul A. Zuckerman
Paul A. Zuckerman