BEFORE THE ASBESTOS MDL PRE-TRIAL JUDGE
CAUSE NO. 2008-36868-ASB

JOHN JOHNSTON, Individually and as Personal Representative of the Heirs and Estate of JERRY JOHNSTON, Deceased; FRED JOHNSTON and JUDY COURTS	)	IN THE DISTRICT COURT
VS.	)	
AFTON PUMPS, INC., et al	)	11TH JUDICIAL DISTRICT
		TRANSFERRED FROM CAUSE NO. 47341
JERRY JOHNSTON, et al,	)	IN THE DISTRICT COURT
vs.	)	BRAZORIA COUNTY, TEXAS
AFTON PUMPS, INC. et al	)	29TH JUDICIAL DISTRICT

****

ORAL DEPOSITION OF
DR. MICHAEL GRAHAM
MAY 18, 2010
ORIGINAL

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ORAL DEPOSITION OF DR. MICHAEL GRAHAM, produced as a witness at the instance of the Defendant, and duly sworn, was taken in the above-styled and numbered cause on the May 18, 2010, from 10:20 a.m. to 12:12 p.m., before JULIE HUNDELT, CCR in and for the State of Missouri, reported by machine shorthand, at 1300 Clark Avenue, St. Louis, MO 63103, pursuant to Missouri Civil Procedures and the provisions stated on the record or attached hereto.

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I N D E X

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By Defendants - 50, 52, 57, 66, 67, 68, 69, 70, 76, 79, 80, 81, 95, 96

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IT IS HEREBY STIPULATED AND AGREED by and between counsel for the Plaintiffs and counsel for the Defendants that this deposition may be taken in shorthand by Julie Hundelt, CCR, and notary public, and afterwards transcribed into printing, and signature by the witness is waived.

*****

DR. MICHAEL GRAHAM,

Of lawful age, produced, sworn, and examined on behalf of the Defendants, deposes and says:

EXAMINATION

QUESTIONS BY MR. TIVIN:

(Starting time of the deposition: 10:20 a.m.)

(Graham Exhibits 1, 2 and 3 were marked for identification.)

Q Good morning, Dr. Graham.

A Morning.

Q Could you please introduce yourself to the ladies and gentlemen of the jury?

A Dr. Michael Graham.

Q What do you do for a living?

A I'm a forensic pathology.

Q Now I'm going to show you what has previously been marked as Graham Exhibit Number 1. Do you see that?

A I can.
Q What is that?
A It's a copy of my curriculum vitae.
Q What is that?
A It's kind of a biography of my professional career.
Q We're going to go through your background a little bit in the beginning if that's okay with you, Doctor.
A Okay.
Q Can you give the ladies and gentlemen of the jury a brief educational background?
A I went to St. Louis University as an undergraduate, got my degree from there in 1973. I received my M.D. in 1977 from St. Louis University. I then spent the following four years at St. Luke's Episcopal Hospital in Houston, Texas, training as a pathologist. Then came back to St. Louis University for an additional year of training in forensic pathology. I'm certified by the American Board of Pathology in anatomic, clinical, and forensic pathology.
Q Are you licensed to practice medicine in any states?
A I'm licensed in Missouri.

Q That's where we are right now?

A Yes.

Q Do you work?

A I do.

Q What do you do?

A I'm a professor of pathology at St. Louis University. I co-direct the Division of Forensic and Environmental Pathology. My work assignment is as the Chief Medical Examiner for the City of St. Louis.

Q Let's take those one at a time. Can you please explain to the ladies and gentlemen of the jury what the different types of pathology that you're board certified in, what they mean?

A Pathology is one of the major specialties in medicine that deals with the basic nature of diseases and injuries. What they look like, what causes them, how they affect people. The major field of pathology is generally separated into two divisions.

One is called anatomic pathology which deals with the examination of tissues taken from the body -- for example, during biopsies, surgery, or autopsies. The other major area is clinical pathology which is kind of the laboratory aspects of medicine -- the blood tests, urine tests, things like that.

Within those two broad areas are a number of

small areas that most pathologists don't have much experience in, and that requires additional experience to practice them. One of those is forensic pathology which deals with addressing pathology issues that come in public forums such as in criminal investigations or in civil lawsuits such as this one.

Q You also mentioned your teaching duties. Are you familiar with what asbestos is?

A I am.

Q Do you teach anything that has to do with asbestos in any of your pathology courses?

A Not in the general course to the medical students. I do teach it in some of the continuing education courses, some departmental conferences.

Q As a result of that, do you try to keep abreast of the medical and scientific literature as it relates to asbestos?

A I do.

Q You also mentioned that you're the Medical Examiner. Can you please explain to the ladies and gentlemen of the jury what that is?

A Yeah. I have the Government appointment that is responsible for certifying how and why people die when they die under certain circumstances generally either suddenly and unexpectedly or when

some sort of outside influence may have played a role in death.

Q I mentioned earlier a little bit about asbestos. When did you first develop in interest in the field of asbestos as it relates to medicine?

A I've always been interested in heart and lung pathology. My interest in asbestos started when I was in Houston back in the late 70's. Then I got much busier in that area in the mid 80's.

Q And have you ever done any, written any articles regarding asbestos or in which asbestos was a topic?

A I've written one article that dealt with a number of lung issues that come up in the forensic setting. That article has part of it dealing with asbestos.

Q You mentioned that you try to keep abreast of the medical and scientific literature. Are you familiar with a product called gaskets?

A I am.

Q Are you familiar with a product called packing?

A Yes.

Q Are you familiar with the medical and scientific literature generally as it relates to

gaskets and packing and asbestos?

A Yes.

Q Now you're doing some consulting work in this case. Do you do that for free?

A No. The University bills for my time.

Q How much does the University bill for your time?

A $400 an hour.

Q Does it matter who hires you with regard to how much you charge?

A No. All my time is billed at the same rate regardless of who it's for and what I do.

Q Are you a member of the College of American Pathologists?

A I am.

Q And are you involved in any committees from the College of American Pathologists?

A I'm currently the vice chair of the forensics committee.

Q Have you done any work for the US Government?

A I have.

Q Can you please explain that to the ladies and gentlemen of the jury?

A A number of years ago people may remember

the Branch Davidian incident, Waco, Texas, where David Koresh and his followers were in a compound with a stand-off with the US agents. There were shots fired. There was a fire. Numerous people were killed. A few years after the event the Justice Department reviewed the entire incident, and I was the consultant pathologist to that particular commission. I'm currently doing some work for the National Institute of Justice in some of their grants review.

Q Have you received any awards, professional awards during your career?

A I have.

Q Can you please explain, tell the ladies and gentlemen of the jury about those?

A I received some awards from my work in transplantation. I've also received some awards from the National Association of Medical Examiners for work I did for them.

Q I don't mean to be jumping back and forth. We talked a little bit about your consulting work. Have you done work for plaintiffs and defendants?

A I have.

Q In your consulting work, do you charge the same for plaintiffs and defendants?

A Yes.

Q How long have you been doing them, consulting in asbestos related cases?

A Since the mid 80's.

MR. TIVIN: Now off the record. Off video record.

(Whereupon, a moment was taken off the record.)

Q (By Mr. Tivin) Doctor, can you please tell the ladies and gentlemen of the jury generally what is asbestos?

A Asbestos is a certain type of mineral. It's a hydrated silicate that comes in a number of forms, but the ones that we're interested today are the fibrous forms.

Q Are all types of asbestos commercially used?

A No.

Q Are you familiar with the different types of asbestos used in different products?

A In a general sense, yes.

Q How have you become familiar with that?

A Primarily through the work that I've done in this litigation.

Q Are you familiar with the term amphibole asbestos?

A Yes.

Q What is that?

A The amphiboles are one of the major classes or one of the two major classes of asbestos. The fibers are primarily in the shape of little needles or little rods. They're quite rigid, and they stay in the body for long periods of time.

Q Are you familiar with the term serpentine asbestos?

A Yes.

Q What is that?

A The serpentine group which only has one member, is the other major type of asbestos. The sole member of the serpentine group is chrysotile which instead of being like little needles looks like little rolled up parchments or when they're together almost like a piece of yarn.

Q Does the body react to the different types of asbestos the same?

A No.

Q What is the difference generally?

A The amphiboles are very poorly handled by the body. Once they're in there and in the lung, they tend to stay there for a very long period of time. Chrysotile on the other hand because of its structure and its chemical nature is well handled by the body and it tends to basically fall apart and dissolve in

the body fairly readily.

Q Have you studied the ability of the different types of asbestos and their ability to cause disease in humans?

A I have.

Q Let's talk about this case for a moment. Were you hired by my firm to look at this case?

A I was.

Q What did we ask you to do?

A Asked me to look at to see what disease or diseases Mr. Johnston had whether there was any evidence of any asbestos related conditions in the body and whether gaskets and packing material played a role in the development of his tumor and specifically gaskets and packing from John Crane.

Q And as a result of that consultation, did you prepare a report?

A I did.

Q I want to show you what's been marked as Graham Exhibit Number 2. Do you see that?

A Yes.

Q Is that the report you prepared in this case?

A It is.

Q What materials did you review in this case?

A I had medical records, I had as I recall answers to interrogatories, and I think maybe a case report; and then I had microscopic slides prepared from the tissues sampled during a biopsy, and I also had the results of a report by Dr. Dodson, who quantified how much and what type of asbestos he found in the lung tissue.

Q Did you come to an conclusion within a reasonable degree of medical and surgical certainty as to whether Mr. Johnston suffered from an asbestos related disease?

A He did.

Q What was your conclusion?

A He did.

Q What was the disease?

A Malignant mesothelioma of the pleura.

Q Have you studied the ability of the different types of asbestos to cause malignant mesothelioma?

A I have.

Q You've mentioned the different fiber types. Can crocidolite cause malignant mesothelioma?

A Yes.

Q Can amosite cause malignant mesothelioma?

A Yes.

Q Can chrysotile cause malignant mesothelioma?
A In humans unless it's contaminated with an amphibole, I don't think it does.
Q Can you compare the ability of crocidolite to amosite in the ability to cause mesothelioma -- wait. Strike that. Are you familiar with the term carcinogenicity?
A Yes.
Q What does that term mean?
A Just means that something is capable of causing cancer.
Q Are you familiar with the term potency as it relates to carcinogenicity?
A Yes.
Q Do you have an opinion based upon the relative potencies of the various commercially available fiber types and their ability to cause mesothelioma?
A Of the commercial fiber types, crocidolite is the most potent. Amosite is somewhat less potent, probably about 10 percent as potent as crocidolite. Then chrysotile it depends upon how much contamination there is by some sort of amphibole. If you look at the chrysotile that comes out of the ground in some of the mines in Canada where we know that it can cause

disease, it's probably two or three orders of magnitude less than crocidolite or amosite.

Q When you say two to three orders of magnitude, does that mean two to three times?

A No. Those are factors of ten, so a hundred to thousand times less potent.

Q What's the basis for that opinion?

A It's based upon looking at different populations around the world and seeing how much exposure individuals who get the disease if they get it at all have, and kind of what's the lower limit as to where you see it.

And what you see is that if there is contamination to a sufficient amount of chrysotile by some sort of amphibole, it takes very heavy prolonged exposures before you see the disease. Even then, it's very, very few workers get it.

For example, if you look at the Canadian miners and millers, about four-tenths of a percent get the disease. Then similarly you look at populations exposed to amosite and to crocidolite, and you see that those populations require much less exposure as we mentioned before.

Q When you were talking about exposure, does that relate to the concept of dose?

A It relates to it. There's always two factors when you're looking at the administration of toxic substance -- how much you get and for how long you get it. And you have to consider both of those factors.

Q Are you familiar with the term or the term of art asbestos in the ambient air or ambient air levels of asbestos?

A Yes.

Q Can you explain to the ladies and gentlemen of the jury what that is?

A Basically if you go out and measure the air just outside the door, you'll find a lot of particles of different types of chemicals in the air. Some of that will be asbestos. Generally what we consider is the ambient air is just what you breathe day in and day out assuming that you're not working in an environment where asbestos is being actively used.

Q Does everyone over the age of 40 have some background level of asbestos in their lungs?

A In North America, yeah.

Q Has that level of asbestos ever been associated with any asbestos related disease?

A Not in the general population. There are specialized areas or localized areas where that has

been true such as in Libby, Montana, with the vermiculite, down in Louisiana near some of the plants, and maybe one or two other spots. But just generally for most of us, no.

Q Can you explain to the ladies and gentlemen of the jury -- strike that. Are you familiar with the term fiber year?

A Yes.

Q Or fiber CC year?

A Yes.

Q Can you explain what that is to the ladies and gentlemen of the jury?

A Some of you may have heard about pack years when we talk about smoking which is a way to quantify someone's smoking habit over the year. So if you smoke two packs of cigarettes a day for 25 years, that would be 50 pack years. Or two packs a day -- or one pack a day for 50 years would be 50 pack years. So you just multiply how much is in your smoking versus how much years you did it on a regular basis.

We do a very similar thing for asbestos, and that is you find out how much fibers are in one CC of air that you're breathing, and the number of years you've been breathing that concentration. Generally when you do that in relation to asbestos, you're doing

it in a timely period, which is basically eight hours a day five days a week over a work year. So two fibers per CC for one work year would be two fiber CC years or what we often call two fiber years. If you do that for two years, it would be two times two it would be now.

Q Now you talked about some different types of asbestos. Do you have an opinion as to the fiber CC year dose that it causes for amosite to be related to the causation of malignant mesothelioma?

A The lowest number that I've seen where people talk about an increased incidence is somewhere around three fiber years or five fiber years.

Q And what is, where have you read that?

A I think Dr. Rogley has mentioned that in the past.

Q Well, I guess what I'm talking about, that's something that you've seen in the medical and scientific literature?

A I think I have seen that written. Yeah.

Q Do you have an opinion within a reasonable degree of medical and scientific certainty as to the fiber CC year dose of chrysotile that would be, if it could ever be related to the development of malignant mesothelioma?

A Again, if we look at the, some of the studies out of Canada where we know that the chrysotile does have contamination at least in some of the mines, but if we look at some of the ore, we know it causes disease, seems to start somewhere around 100 fiber years, maybe a little more or a little less. But in that general ball park.

Q So if someone has an exposure to chrysotile that is under two fiber per CC years or under one fiber per CC year, would that give rise to cause mesothelioma?

A I mean if it was contaminated enough and if you live long enough, theoretically, but you may have to live a hundred years or something in that environment. In general though, no.

MR. PANATIER: Mark, let me interrupt you real fast. Do you want to agree that all objections are reserved until the time of trial? I mean that's typically how we do it other than objection to form in Texas.

MR. TIVIN: Okay. Is that agreeable to everyone? Off the record.

(Whereupon, a moment was taken off the record.)

Q (By Mr. Tivin) Getting back to Mr. Johnston, the ladies and gentlemen of the jury have already

heard about the different, I'm assuming have heard about the different types of asbestos-related diseases. So I'm not going to have you define them. But did you find any evidence Mr. Johnston had asbestosis?

A He did not have asbestosis.

Q Did you find any evidence that Mr. Johnston had any pleural plaques?

A No.

Q Are you familiar with the concept of direct exposure and bystander exposure as it applies to asbestos?

A Yes.

Q What is that?

A Direct exposure is generally defined as someone who is actually directly working with the asbestos fibers themselves or some product that contains them. Bystander exposure is someone who happens to be in the general area that's breathing the same air, as the worker may be, or at least similar air. But not directly working with the product itself.

Q Did you receive any information about Mr. Johnston's work history?

A Some. Yes.

Q Did you find anything in significance in what you received?

A I had very little information about his work history. I know where he worked when he worked there. He did work in environments where I would expect that there would be asbestos.

Q Are you familiar with what a tissue digestion study is?

A Yes.

Q Did you review one of those in this case?

A I did.

Q Did you find anything significant in that tissue digestion study?

A Yes.

Q What was the significance?

A There were two things. One is when the number of asbestos fibers of the body had ensheathed or put a coating of iron and protein on what we call asbestos bodies, when that concentration was measured was relatively mildly elevated, but clearly more than you would expect in someone just walking around the streets every day.

And then when the actual fibers were counted, the only fiber that was observed was an amosite fiber. But because of the amount of tissue it

was in, it does indicate that there was an increased number or increased concentration of amosite fibers in the lungs. Nothing else was seen.

Q And was that significant to you that there was an increased amount of amosite fibers in the lungs?

A Yes. It goes along with the increased number of asbestos bodies. Amosite is an amphibole, so it fits together fairly well.

Q Did you review any medical records in this case?

A I did.

Q What did you review?

A I had a variety of his medical records, some related to his tumor and some unrelated.

Q Did you find anything significant in the medical records that you reviewed?

A Yeah. He had a number of significant diseases in addition to his tumor. He had significant heart disease related to hardening of the arteries to the heart. He was a diabetic. He also at least at one point was substantially obese, because he underwent a surgical procedure to try to correct part of that.

Then at least for our purposes here today,

early in 2008, he started getting fluid in the right side of his chest. That lead to the diagnosis of malignant mesothelioma that started on the lining of the right chest wall.

Q And you know, just to be clear, you're not saying that any sort of obesity or heart disease had anything to do with the development of his mesothelioma; is that correct?

A No. You were asking me what I guess significant diseases that he had, and those are the ones that the record reflected.

Q Those types of diseases, could they lessen someone's life expectancy?

A Yes.

Q And how so?

A Well, the heart disease can cause heart attacks or cause sudden death. He had had at least two heart attacks and had a number of surgical procedures to help forestall another. He also had trouble with significant disturbances in the way the heart beats, and he had an implantable defibrillator implanted in his chest to try to at least correct one of the more serious ones if it occurs. Diabetes is associated with early death for a number of reasons including heart disease, and overall obesity is

associated with shortening of life span.

Q Now based upon the medical records that you reviewed, based upon the tissue digestion report and pathology that you reviewed, do you have an opinion within a reasonable degree of medical certainty as to what type of asbestos caused Mr. Johnston's mesothelioma?

A Based on the information that I reviewed from our report, it was amosite, a type of amphibole.

Q And I represent a company called -- strike that. Historically what types of products contained amosite if you're aware?

A Most commonly thermal insulation, some type of fireproofing. Those are probably the most common. Some types of boards, but that was often used for either fireproofing or thermal insulation.

Q I represent a company called John Crane, Incorporated. Are you familiar with that company?

A I am.

Q Are you familiar with the products that John Crane either made or sold?

A In general I am.

Q Those would be gaskets and packing?

A Yes.

Q Are there -- strike that. Are there any

articles in the medical and scientific literature that relates gaskets and packing to an increased risk of mesothelioma?

A Not that I'm aware of.

Q Are there any articles in the medical or scientific literature that relates gaskets and packing to an increased risk of any asbestos-related disease?

A Not that I'm aware of.

Q Can you explain to the ladies and gentlemen of the jury what the difference is between risk and causation?

A Risk is really generally defined for a population and that is a given population has a certain percent increased likelihood of getting that disease based upon some characteristic that is different to that population than from the general population. Doesn't mean they're going to get the disease. Doesn't tell you whose going to get the disease; but that in this group of individuals, some people, more people then you would expect will get the disease. Causation really deals with once you got the disease and finding out why you have it.

Q Do you have an opinion within a reasonable degree of medical and scientific certainty as to whether Mr. Johnston's alleged exposure to John Crane,

Incorporated, gaskets or packing was a cause of his malignant mesothelioma?

A It was not.

Q So do you have an opinion?

A I do. Sorry. I do.

Q What is your opinion?

A John Crane gaskets and packing had nothing to do with it.

Q Why do you say that?

A A couple of reasons. One is I'm not aware that there's been any evidence that he was exposed to John Crane gaskets or packing, but probably more importantly on a scientific side, the asbestos fibers and gaskets and packing are encapsulated or embedded in a matrix. That prevents their release; or if there's any release into the air, it's very, very tiny, and I would not expect that to cause or contract to any disease. It's such a small amount.

Most of the gaskets and packing that you deal with are also chrysotile; and so without the contamination and without heavy prolonged exposure to contaminated chrysotile, you won't get the disease.

Q I want you to assume that Mr. Hays has testified, and he has testified that Mr. Johnston was exposed to between one and two fiber per CC years to

John Crane, Incorporated, gaskets or packing. Can you assume that?

A Okay.

Q Based upon that type of fiber year exposure, do you have an opinion whether that would relate to the development of Mr. Johnston's mesothelioma?

A No. Chrysotile would not cause it at that concentration.

Q Do you have an opinion as to whether Mr. Johnston's exposure to amosite containing products was a substantial factor that caused his mesothelioma?

A I do have an opinion.

Q What is the opinion?

A My opinion is based on the data that I've seen, his mesothelioma was caused by exposure to amosite.

MR. TIVIN: Thank you no further questions.

CROSS-EXAMINATION

QUESTS-IONS BY MR. PANATIER:

Q Ready to keep going?

A Sure.

Q Sir, how many hours of time have you spent so far reviewing materials for this case?

A Three.

Q And what's your billing rate for those hours of review?
A $400 an hour.
Q Is that the same rate that you billed for the deposition?
A Right. All my time is billed at the same rate.
Q What did you do for that three hours?
A I reviewed records, I looked at microscopic slides, and I wrote a report.
Q Did you ever read Mr. Johnston's deposition?
A No.
Q Did you ask for it?
A I didn't know it existed.
Q You've done a lot of these cases; right?
A I have.
Q And typically there's a deposition of someone who identifies products that have been used; right?
A Sometimes there is. Not always. But --
Q Okay. Do you ask for one?
A I did not ask for one in this case. Given the question that I was really asked to answer that related to the chrysotile containing gaskets and packing, and given the results of the fiber burden,

the deposition wouldn't really add to resolving that particular question.

Q Well, one question that you answered, you were asked questions about the alleged exposure to John Crane, and you said you weren't aware of any evidence of exposure to John Crane. But you didn't read the deposition?

A No. I think Mr. Tivin mentioned that to me that there was no specific indication of John Crane.

Q Oh, okay. Let me do this. I have one copy, so I'll ask you to take my word for it. If you want to review it, I'll certainly allow you to do that. I want to read you some excerpts from the deposition and ask you whether or not that was in line with what Mr. Tivin told you. He was asked on page 37 with respect to the John Crane gaskets, did you ever remove a John Crane gasket? Answer, yes. What were those gaskets made out of? Answer, asbestos. Is that evidence that he worked with a John Crane gasket?

A Actually, I think I was incorrect before. I think we were talking about the potential for amphibole containing gaskets. So, yeah, I misspoke. There was exposure to chrysotile containing gaskets.

Q There was exposure to John Crane chrysotile-containing gaskets; correct?

A Yes.

Q You personally didn't inquire as to how often he worked with or around those products; right?

A It's my understanding he worked around them primarily, but yeah, I did not specifically ask for the reasons I've discussed earlier.

Q Sure. You didn't get into the different work practices that were used on the gaskets that he was either working with or around, whether it be scraping, wire brushing, power wire brushing, etcetera. Fair?

A Yes.

Q What are you doing in the few weeks after June 14?

A I will be on a mission trip to Costa Rica.

Q So you're going to be out of the country which is why we're taking your video?

A Right.

Q You were asked about some professional awards. I want to ask about a few professional awards that Mr. Tivin did not ask you about. They are, looks like you have two at least closest to the pin or closest to the hole golf awards displayed prominently in your office. Is that fair?

A That is the only two.

Q The only two. So you're telling the ladies and gentlemen of the jury you have not done any better than two closest to the hole awards?

A That is correct. I have not.

Q Looking at your report now, do you have a copy of that?

A I do.

Q You went through with Mr. Tivin a series of other conditions that Mr. Johnston had. You're not saying in any way that any of those contributed to the development of his mesothelioma; correct?

A That's correct.

Q In fact, we can agree he had malignant mesothelioma of the pleura; right?

A Yes.

Q It was from asbestos; right?

A Yes.

Q He died from malignant mesothelioma; correct?

A Yes.

Q So asbestos was the direct cause of his death. True?

A No. The direct cause of his death was the tumor. Indirectly was asbestos, because that's what caused the tumor; but the direct cause was the tumor.

Q The tumor would not have existed but for asbestos exposure. True?

A Probably not.

Q Let me ask you a few other questions about your report. If you go to page 2 of your report, the second paragraph, you're talking about --

A Second full paragraph?

Q The first full paragraph. You talk about Dr. Dodson's report that I assume you've reviewed?

A Yes.

Q It said that light microscope evaluation of the lung tissue digestate indicated the presence of 80 asbestos bodies per gram wet lung tissue. Can you categorize that in your opinion as to how high above background that is?

A That's probably about four times the upper limit of background in most laboratories, maybe three. It's a fairly mild increase given what we often see, but it is clearly significantly above background.

Q And can all asbestos fiber types cause asbestos bodies?

A It's possible almost all of them in North America are based on amphiboles, but a couple percent are based on chrysotile.

Q So the answer is yes to my question?

A It's possible, but realistically, if you see an asbestos body, you know there's a 98 percent chance it's going to be amphibole.

Q Asbestos bodies can be formed from chrysotile; correct?

A Yes. They can.

Q The next sentence transmission electron microscopy demonstrated an amosite fiber that was indicative of 4097.5 fibers per gram wet lung tissue. Can you characterize for us how much above background that is?

A I would have to know what Dr. Dodson's control study showed for the general population, but again, that's a relatively mild increase over general background; but it's still significantly increased.

Q But you can't tell you how much increased, because you don't know his control for background?

A Yeah. I don't know what his numbers are for his upper limit of background.

Q Did he include those in his report?

A No.

Q If you skip down to the second to last paragraph.

A Okay.

Q Just a few sentences. It says that the

asbestos burden analysis performed on Mr. Johnston's lung tissue confirms exposure to amphibole asbestos amosite in excess of background. You can't tell us how much in excess of background?

A Not the fibers. The asbestos bodies as I said about four times the upper limit of what most people's laboratories have as their upper limit of the background.

Q But all you can say for the specific type that was identified is it's elevated, but you don't know how much it's elevated?

A Yeah. I can't tell you. It's not elevated a huge amount, but exactly kind of what the number is now, I can't tell you.

Q You also state there's accumulated scientific information that these tumors, mesothelioma, are caused by a contaminating amphibole most commonly tremolite rather than the chrysotile fibers. Let me ask you this question. If you find tremolite in somebody's lungs, is that more likely than not an indication of chrysotile exposure?

A No. I don't think you can say that. There are other possible sources for it.

Q Such as?

A You'd have to look at the scenario.

Q Such as?
A Vermiculite would be one. Talc in some of the talc mines would be one you'd have to consider.
Q Do you know whether or not Mr. Johnston was exposed to vermiculite?
A I don't know if he was or not.
Q Do you know whether or not he was exposed to talc-containing tremolite?
A I don't know the answer to that.
Q Do you know whether or not tremolite was found in his lungs?
A Dr. Dodson didn't find any.
Q Have you been shown the report by Dr. Ron Gordon?
A I saw it just before we started today.
Q And Dr. Gordon found crocidolite, tremolite, amosite, and chrysotile; correct?
A That's correct.
Q Can you tell the jury what the source of the tremolite would be in Mr. Johnston's lungs?
A No.
Q Do you have evidence it was from talc?
A I don't have any evidence where it was from.
Q Including talc?
A Including talc.

Q You don't have any evidence it was from vermiculite; right?

A That's correct.

Q You testified you know he had exposure to chrysotile asbestos; correct?

A Yes.

Q Have you seen bulk sampling of John Crane products where tremolite, actinolite, and anthophyllite have been found?

A I don't know that I have.

Q They've not shown you those studies?

A I've seen bulk sampling studies from gaskets and packing, but I don't know what company they were.

Q You can't testify that you've seen any bulk sampling or analysis of John Crane chrysotile products; correct?

A Yeah. Without going to look up at the date again and see if they tell what the source is I can't.

Q And you certainly have not been shown any studies by the John Crane lawyers. Fair?

A Not that I recall.

Q You haven't done any of that analysis on your own; correct?

A Right. It's all been done by industrial hygienists.

Q Do you dispute any of the findings of Dr. Gordon's report?

A I don't know what the raw data is, so I don't have anything to really offer an opinion about whether it's correct or incorrect. Off the top of my head, I have no reason to say it's incorrect. I can't explain the discrepancy between his and Dodson's.

Q Well, certainly if you look at different parts of tissues, you would expect to find different fiber levels and different fiber types?

A Usually you don't find different fiber types. If you're look at a different part of the lung and looking at enough lung, it's not unusual to have a discrepancy in the amount you're finding, because there's not even distribution; but it would be unusual to have such a difference in the fiber type analysis.

Q Well, another factor would be what type of analysis you're looking at; right?

A Well, I think both of them are using transmission electron microscopy, so they're using the same testing. They're using the same techniques.

Q Did both of them using X-ray fraction?

A I don't recall what they used to analyze fiber type; but as I recall, both used accepted methodologies.

Q Did they both use the same type of analysis?
A Transmission electron microscopy, yes.
Q Well, there's more than one type of that; right?
A Of transmission? No. It's a basic transmission electron microscopy.
Q Can you use a transmission electron microscopy to use spectrometry?
A That's a different attachment onto the scope.
Q Sure.
A Yeah. That characterizes what type of fiber there is. There are different ways to do that.
Q My question is did they do the same thing?
A I don't recall whether they used the same techniques. I do recall they both used accepted techniques. I just don't recall if they used the same ones.
Q If Mr. Johnston had crocidolite in his lung, would that be a contributed cause of his mesothelioma?
A Obviously, if it was above background, yes.
Q Do you recall from looking at Dr. Gordon's report whether it was above background?
A He doesn't give his control background levels either, but just doing some rough calculation

on it, it seemed to be.

Q You also stated in your report that it's my opinion that Mr. Johnston's pleural malignant mesothelioma was more likely than not caused by occupational/paraoccupational exposure to amphibole asbestos, paren, amosite, and was not caused or contributed to by any chrysotile dust derived from John Crane gaskets/packing to which he may have been exposed. Can you identify any of the brand names of any of the products containing amosite to which you believe Mr. Johnston's was exposed?

A No.

Q Can you identify the percentage by volume or weight of amosite in any of the products to which you believe he was exposed?

A No.

Q Can you identify the frequency, proximity, or duration of the exposure to Mr. Johnston of any amosite containing product?

A No.

Q I've read to you some excerpts from Mr. Johnston's deposition, and you have agreed that he did have exposure to chrysotile from John Crane products. That is actual exposure, that's no longer alleged; correct?

A I mean there's not objective evidence that he did in the sense that you can measure it, but I don't have any reason to think that there was not some trivial exposure assuming his statements were accurate.

Q You don't dispute what he testified to?

A I haven't read it, so I don't have an opinion one way or the other.

Q You don't have any suspicion having not read it that he's not being truthful?

A Yeah. I don't have any undue suspicion for that.

Q You said when Mr. Tivin or the John Crane lawyers came to you and they asked you to be involved in this case, the question they asked you was whether gaskets and packing played a role in Mr. Johnston's mesothelioma. Do you recall testifying to that?

A Whether John Crane gaskets and packing.

Q Sure. Before you reviewed any materials in the case, you knew what your answer was going to be to that question; correct?

A Yes.

Q You knew the answer to that question would be no?

A That's correct.

Q Before looking at any medical records, any depositions, anything, you knew you were going to say no?

A Assuming there was malignant mesothelioma, yeah, gaskets and packing from John Crane was not going to cause it.

Q Do you know whether or not Mr. Johnston had any exposure to crocidolite John Crane packing or gasket products?

A I see no evidence that he did. Certainly, if he did, it wouldn't account for Dr. Gordon's number. You couldn't get that number using gaskets and packing; but whether there was any or not, you could speculate pretty much, but I've seen no indication that he was.

Q Sure. You have to speculate, because you haven't read the deposition; right?

A Or I've not seen objective evidence that they were even there, if they existed even.

Q Sure. Did you ask John Crane for invoices or for any information as to the products they had made that contained crocidolite, what operations they worked on, or anything like that?

A No.

Q You said that the amount of crocidolite that

Dr. Gordon found would not account for solely on the basis of gaskets or packing may or may not contain crocidolite?

A Right.

Q You're not saying they couldn't contribute to the number, you're saying they wouldn't, the whole number?

A Yeah. You probably wouldn't get a measurable difference by using gaskets and packing.

Q What do you mean by measurable difference?

A It's such a tiny exposure, especially someone whose not directly working with it every day. If you measured somebody's lungs, you would be in background. You'd never be able to recognize it.

Q Are you saying that it's impossible to get a substantial exposure to asbestos from gaskets and packing work?

A Using them in the usual fashion with the exception of cutting sheet gasket with a bandsaw, yeah, that is correct.

Q So it's your opinion that you can't get substantial exposure to asbestos from scraping off a gasket?

A Yeah. Everything is below the current PEL.

Q You're saying that you can't get substantial

exposure from wire brushing off a gasket?

A Right.

Q You're saying you can't get substantial exposure from power wire brushing off a gasket. True?

A Right.

Q You can't get substantial exposure from pulling packing out of a piece of equipment; correct?

A Right.

Q You said because all of those exposures are under the PEL?

A They're substantially under the PEL. It's not because they're under the PEL. That's just a reference point. It's because when you measure them, if you find any at all, it's usually at least in an the order of magnitude -- so you're talking in the hundred's or thousand's of fiber per CC on a time related average.

Q Isn't the amount of fibers in the air dependent on the work you're doing, how many gaskets or packing projects you do?

A No. It's not what's in the air. That will give you a time difference, but it doesn't add more to the air; because you don't really work on one at a time. That's what's -- in the air. Again, you go to another one, that's what will be in the air. It's not

like it's all in the air at a time, and you're adding to it.

Q So if you work on one gasket, and then you do a time weighted average over eight hours on one day, then on day two you work on two gaskets, and you do a time weighted average over eight hours, your exposure is the same?

A No. You'll have more.

Q You have twice as much exposure; correct?

A Right.

Q If you do 10 gaskets on one day and 20 gaskets on the next day, you have twice as many exposure on the next day?

A Theoretically.

Q More likely than not, that's the truth. True?

A There's all kinds of other factors you have to consider with air flow and differential release, so it's not quite that neat to do it mathematically.

Q But if you work on more gaskets, you're going to have more exposure?

A Right.

Q Okay. You state in your report that, and you have stated here I believe that the use of encapsulated chrysotile containing gaskets, slash,

packing is associated with the airborne release of chrysotile dust within the current PEL .1 fibers per CC. What's the support for that?

A That's the current PEL.

Q What's the support for your conclusion that it's associated with airborne release of chrysotile dust within the current PEL?

A There's a number of studies that have looked at that. Mangold has looked at that. Bolter has looked at it. Spencer, Spence, Lukinen, I think it's been reviewed by Postenbach. I think those are the ones I recall.

Q What about McKinnery and Moore?

A McKinnery and Moore, they had a higher number, but it's out of line with everybody else's; and the industrial hygienists have the explanation why. I look at kind of what fits together. Outliers I tend to disregard.

Q What about Chang and McDermott, are they another outlier?

A Again, there was something about the way they were doing it, the industrial hygienists have looked at. But using current techniques and current measurement methodologies, the numbers are uniformly low.

Q What about Millet Mountain Haze, is that an outlier?

A The Milette was using a little chamber. I'd have to go back and look at it, but there are major problems with that particular study.

Q Longo study is an outlier too?

A I'd have to look at it.

Q Can you specifically name any problems with any of the methodology for any of the studies that I've just mentioned to you?

A As I recall, some of them there was filter overload on a number of them.

Q That's not a methodology problem?

A That is a methodology problem. That shouldn't happen. You don't get an appropriate answer when you have filter overload.

Q Did they actually try to count filters that were overloaded?

A I don't recall, but that was one of the criticisms.

Q By who?

A I don't recall. I'd have to go back and look at all the articles again.

Q So there are criticisms, but you don't know by whom?

A Not off the top of my head.
Q You're aware every single name I mentioned, they were all published in peer review literature; correct?
A I don't recall if all of them were in peer literature. I'd have to look at them.
Q So you don't whether or not they were all in peer review?
A I don't know if all of them. Some of them --
Q Have you ever published a criticism of any of those papers?
A No. I don't have enough knowledge to do that. I would refer to the industrial hygienists.
Q Sir, do you rely on -- you mentioned the Bolter paper. Do you rely on the Bolter paper that the proposition that the use of gaskets and packing is associated with the airborne release of chrysotile dust within the current PEL .5 fibers CC?
A Some of Bolter's work, yeah.
Q Specifically what?
A He's done some removal of gaskets from industrial maritime old equipment.
Q Do you know whether or not the gaskets that he was working on just fell out or whether they had to

actually be worked to get the residue off the flanges?

A I'd have to go back and read them.

Q Sure. Have you seen Mr. Bolter's correspondence with OSHA about his reports?

A No.

Q Let me just ask you if you've seen this.

(Graham Exhibit 3 was marked for identification.)

Q (By Mr. Panatier) Sir, I'll hand you Exhibit 3. Have you ever seen that letter from OSHA to Frederick Bolter before?

A No.

Q Going down to the first red underlined statement, what does that say?

THE DEFENDANTS: Objection. Form.

THE WITNESS: Furthermore, it is our opinion that your data did not demonstrate that the gaskets you examined possess the physical property that these provisions require in order to qualify for exemption from labeling.

Q (By Mr. Panatier) Then what's the second part that's underlined say?

THE DEFENDANTS: Objection. Form.

THE WITNESS: It is a reasonably foreseeable occurrence for a person to perform the same tasks in regard to 10 gaskets instead of 8

gaskets in an 8-hour period. In that event, a person could be exposed to an 8-hour time weighted average asbestos air concentration that could exceed the 8-hour time weighted average of 0.2 fibers per CC.

Q (By Mr. Panatier) Now if you need to read more of that, you certainly can. But based on just Fred Bolter's numbers alone, OSHA is saying even using your numbers, it's foreseeable someone could exceed the time weighted average PEL of .01; isn't that correct?

A That's what they say.

Q You can set that aside, sir. Sir, briefly going back to the subject of tremolite, you've identified talc, vermiculite, and potentially chrysotile as three different sources of tremolite; correct?

A Right.

Q You're unaware of any talc exposure he had, vermiculite exposure he had, but you are aware he had chrysotile exposure; correct?

A Yes.

Q As you sit here right now, is it more likely than not that the tremolite in his lungs came from chrysotile products?

A I don't think you can say that.

Q But you can't identify an alternative source; can you?

A I can't identify any source for it.

Q Okay. Here's the easy part. This is where I ask you questions that I've asked you about before. If you need to see the transcript, this is from the Pelly case in 2007 in Los Angeles, December of 2007 I think.

THE DEFENDANTS: I would just object to the --

MR. PANATIER: I'll cut it. I'm just telling him.

Q (By Mr. Panatier) So if you want to see an answer or a question, I'm happy to show it to you. Sir, just so I can get an update on this year, how many times have you testified in a deposition this year on behalf of asbestos defendants?

A I don't know. I don't keep count. We do keep a list. I'll be happy to provide it to you. Off the top of my head, no.

Q Do you have that list here?

A No. It's at the University.

Q Can you just give me a ball park?

A Off the top of my head again, it's not

something I even think about. Once I do them, I just forget them.

Q Okay. So is it true then you couldn't tell us whether it's been 5 times, 10 times, 50 times?

A I'm sure it's not 50 times.

Q Could it be 25 times?

A Probably not, but it could be.

Q Over the past 34 years, how many times have you testified in deposition on average in asbestos cases for defendants?

A You know, I don't know. Again, I don't keep the list. My secretary does. I don't even pay attention to it.

Q How many times have you testified at trial this year?

A A few.

Q Like two?

A Two, three, no more than four.

Q Where?

A I think Los Angeles, yeah, Los Angeles. I think Philadelphia.

Q Anywhere else you can remember?

A Not off the top of my head. I think there may be another one in there, but I don't recall where.

Q Do you charge for travel time?

A I do.
Q What's your travel rate?
A Same.
Q So it's $400 an hour?
A Yes.
Q For the time that you leave the door til you get to the courthouse or to the hotel?
A I don't charge for sleeping and things like that. If I'm traveling and I'm not doing otherwise professional activity, yeah.
Q You said the school bills for your time?
A Right.
Q What percentage of that goes to you direct?
A About two-thirds of it.
Q All right, in 2007 I asked you over the last six or seven years you billed about $250,000 per year. You said that's about what I earn per year. Fair?
A Between 250 and 300.
Q Has that remained consistent over the past three years since 2007?
A That would be my general sense. Again, I don't calculate that out per year, but that's my general sense.
Q As of 2007, you said that you had made approximately $2 million as of 2007 in asbestos

litigation.

A You know, again, I don't count, but somewhere in that ball park over the last 25 years now, yeah.

Q This was 2007, so since then you've made close to another million dollars. Fair?

A No. That's two years.

Q Actually, it's 2010. It would have been two and a half years ago. So if you make $250,000 a year, and we're halfway through the third year, that's almost $700,000?

A Which is a lot less than a million.

Q Okay. Depends on whose counting. So you've made approximately 2.7 plus; right?

A Yeah.

Q You've testified in hundreds of cases. True?

A Over the years, yeah.

Q 85 to 90 percent of all your work is done for defendants in asbestos litigation. True?

A Yes.

Q When was the last time you testified at trial for a plaintiff in asbestos litigation?

A A couple of years, three years maybe.

Q When is the last time you testified in

deposition for a plaintiff in asbestos litigation?

A Probably about the same.

Q I'm going to read off a list of companies you testified for, consulted for in asbestos litigation. You tell me if I name some you haven't worked for. Okay?

A Okay.

Q You've consulted and/or testified for, Ford, General Motors, Chrysler, Volkswagen, Apex, Borg Warner, Marimount, Bondex, Certainteed, Crane, Durabla, Garloch, CS Railroad, Union Pacific Railroad, Union Carbide, Ingersoll Rand, AB Chesterton, AW Chesterton -- sorry -- Kelly Moore, Owens Illinois, John Crane, Flextalic, Foster Wheeler, and Georgia Pacific. True?

A Yes.

Q In 2003 some lawyers did a mock trial or a mock testimony for you. True?

A I don't remember the year, but I've done one.

Q It was kind of like, you were kind of like a witness in a fake asbestos trial. Right?

A I don't know if it was really a trial. I mean they, it was an examination of both the cross, or direct and cross; but I don't know that there were

other aspects of it. But, yeah, it was from a witness standpoint. Yeah. That's what it would have been.

Q Okay. Here's what you said. You said, I don't know if it was to see how I handled it. I don't remember what it was, but it was attorneys for Ingersoll Rand had asked me to kind of be a witness in kind of a fake trial. Fair?

THE DEFENDANTS: Objection. Form.

THE WITNESS: Yeah. From an individual witness perspective, yeah, that would be correct.

Q (By Mr. Panatier) You're familiar with the Defense Research Institute; correct?

A I am.

Q That's civil defense for lawsuits; correct? It's not like national defense. True?

A You mean like national strategic defense of the country? Yes.

Q So Defense Research Institute --

A Yeah. It's primarily a litigation defense oriented organization.

Q You've spoken there three times. True?

A More than three I think.

Q How many times have you spoken there now?

A Probably four or five total.

Q This was as of 2007 it was three. You've

done one or two since then?

A Yeah.

Q You're aware that the slogan of the Defense Research Institute is the voice of the Defense Bar; right?

A I've heard that.

Q I think I've asked you that before, so that's probably where you've heard it. You're not a pulmonologist; right?

A Right.

Q You're not an epidemiologist; right?

A Correct.

Q You're not a mineralogist?

A Right.

Q You're not an industrial hygienist?

A Right.

Q You're not an oncologist?

A Correct.

Q You don't personally conduct epidemiological studies; right?

A Correct.

Q Never participated in epidemiological study on asbestos. True?

A Yes.

Q Not a researcher in the area of asbestos;

correct?

A Correct.

Q You have no specific training in public health. True?

A No more than any other physician would have. Right.

Q You don't consider yourself an expert in occupational medicine; correct?

A As an occupational medicine practitioner, that's correct.

Q You haven't done any epidemiological studies on asbestos or chrysotile asbestos. True?

A Right.

Q No studies on asbestos inhalation or injection studies in animals. True?

A Right.

Q How many total publications have you written on asbestos?

A Part of one.

Q Part of one publication?

A Right.

Q That was part of a chapter or a paper?

A It's sort of both I guess. It's -- it was a publication in sort of a chapter form I guess, and that particular journal has chapter format type

articles in it.

Q When was that?

A '98 I think.

Q You've not been retained by any regulatory or scientific body to be their go-to expert when they have an issue of asbestos that comes up; right?

A Right.

Q You've never testified before Congress. True?

A Right.

Q I think you testified in the past that you agree it was generally accepted by 1960 that asbestos caused mesothelioma; correct?

A 1960 is when the seminal article that most people would agree indicated that asbestos can cause mesothelioma.

Q And you're aware that specifically that article, that's Vogner; right?

A That is correct.

Q That article actually cited to earlier publications and reports in literature of individuals getting mesothelioma from chrysotile asbestos, specifically the Cartier article?

A It referred to other populations, but there were no epidemiological studies. In fact in 1960, a

lot of people didn't even think that mesothelioma existed.

Q The Vogner paper, was that an epidemiological study?

A Formally it was not.

Q There was no control population; right?

A Right. But because of the rarity of the disease, he was kind of lucky; and it kind of worked out to be one almost. But if he would submit that today, it wouldn't be accepted.

Q Right. You agree that all forms of asbestos are carcinogenic; correct?

A With the exception of calidria chrysotile.

Q Calidria is the stuff that was mined by Union Carbide in California?

A A particular area of California, yeah.

Q You don't believe that that type of asbestos is carcinogenic?

A Yeah. It is has not been shown to be carcinogenic in either animals or people.

Q The chrysotile asbestos that was going into John Crane gaskets and packing is carcinogenic. True?

A It can cause lung canner if it causes asbestosis.

Q It does cause asbestosis. True?

A In high doses.

Q Chrysotile can cause pleural plaques. True?

A Yes.

Q You talked about Mr. Johnston specifically about whether or not he had any indication of pleural plaques or asbestosis. Is it necessary for you to diagnose a person with pleural plaques or asbestosis before you can contribute his mesothelioma to asbestos?

A No.

Q If fact, you've attributed mesothelioma to asbestos in this case. True?

A I have.

Q Sir, you've agreed before that cellular studies shows that chrysotile can alter DNA; right?

A Yes.

Q Mesothelioma is not caused by smoking. True?

A Correct.

Q Sir, you've acknowledged in the past that some of the studies of Canadian miners and millers have been funded by the Quebec Asbestos Mining Association. True?

A I think some studies in Canada have at least partial funding from the association organization.

Yeah.

Q Specifically, the McDonald's have been funded by QAMA or Q-A-M-A?

A Some of their stuff has. Yeah.

Q You know that QAMA is an organization that represents asbestos mining companies in Canada?

A Right.

Q You were asked whether or not there were any studies published that showed that people working with gaskets or packing got asbestosis or mesothelioma. Do you recall that?

A Yeah. I do.

Q Are you aware of any cohort of workers in the entire world where all they do is work with gaskets or packing?

A I mean if you exclude the people who make them, no.

Q Well, the people who make them are not grinding off the old gaskets; correct?

A I mean there's significant difference between people who make gaskets and people who use them. It wouldn't be appropriate to use data from one to apply to the other, but I'm not aware of any studies of a cohort where they're only exposed to gaskets or packing in the general use of those

products.

Q In fact, in the general use of those products, you might have several different trades who might call upon the use of gaskets or packing as part of their trade, but it certainly wasn't exclusive to their trade?

A Right.

Q Sir, I just want to ask you about the opinions of certain scientific and regulatory bodies. I've done this before. Sir, do you agree OSHA is of the opinion that chrysotile asbestos causes mesothelioma and that there is no safe level of exposure?

A They do -- yeah. That is their opinion. Recognizing that they are basing that on contaminated chrysotile, so they don't address the issue of uncontaminated chrysotile. But contaminated chrysotile, yeah, they do.

Q Can you site to me or provide me with something where OSHA has specifically said our opinion that chrysotile causes mesothelioma only applies to contaminated chrysotile and not pure chrysotile?

A Yeah. If you look at their documents and look at what they're referring to in the --

Q Which document?

A The OSHA documents.

Q Well, there's lots of them. Thousands of them. If you tell me which one we can look at --

A Obviously, off the top of my head, I wouldn't memorize all the OSHA documents. But as you look through the regulatory documents from any of the agencies, they cite back to the Canadian miners and millers. Everybody recognizes those are contaminated sources. And in the timeframe where those opinions of those regulatory agencies came out, there had been no studies of exposures of populations to pure chrysotile which are available now. At least there's one available now.

Q Where does pure chrysotile come from?

A Well, there's calidria is one source, but also there's one of the mines in South America which has been shown to be uncontaminated and where there's a worker cohort that's been studied. A couple of the mines in Canada are uncontaminated, but as far as I know the workers to those mines specifically have not been studied, or because of workplace shifts, you can't assume that they're exposed only to the uncontaminated forms. But the one mine in South America --

Q Let me go rewind just a minute. Are you

aware of any statement by OSHA where they have said only contaminated chrysotile causes mesothelioma?

A I'm not aware that OSHA ever addressed that issue. Again, when you looking at the underlying data for all the regulating agencies, it's all related exposure of the contaminate.

Q Has OSHA said only contaminated chrysotile causes mesothelioma?

A No. They have not addressed the issue.

Q In fact, OSHA has said chrysotile causes mesothelioma. True?

A Chrysotile recognizing that the underlying basis for that statement is contaminated chrysotile.

Q You're the one recognizing that, not OSHA?

A No. They recognize it, because they cite those articles; and those populations are recognized as being contaminated chrysotile populations.

Q Their statements after distilling everything they have reviewed are that chrysotile causes mesothelioma in human beings?

THE DEFENDANTS: Objection form.

THE WITNESS: Right. And that would predispose that it's contaminated. They have not addressed the issue at all and have not considered data from uncontaminated sources. It wasn't in

existence when that opinion came out.

MR. PANATIER: I'm just going to object as to unresponsive.

Q (By Mr. Panatier) OSHA stated chrysotile causes asbestos?

A That is their statement.

THE DEFENDANTS: Objection. Form.

Q (By Mr. Panatier) OSHA has also stated there is no safe level of exposure from chrysotile; correct?

A There's been none identified.

Q You're aware of the Consumer Product Safety Commission is of the opinion that chrysotile causes mesothelioma; correct?

A Again, based on contaminated sources, yes.

MR. PANATIER: I'm just going to object as nonresponsive.

Q (By Mr. Panatier) They have stated chrysotile causes mesothelioma; correct?

A They have stated chrysotile causes mesothelioma, but recognizing contaminated chrysotile.

MR. PANATIER: Just object to the unresponsive portion.

Q (By Mr. Panatier) Sir, you understand the International Agency on Research for Cancer is of

the position that chrysotile causes mesothelioma; correct?

A Again, they recognize that chrysotile including contaminated chrysotile causes mesothelioma.

Q Have you reviewed the special report for the International Agency on Research for Cancer from 2009, May?

A I don't think so.

Q They state epidemiological evidence has increasingly shown that association of all forms of asbestos, chrysotile, crocidolite, amosite, tremolite, actinolite, and anthophyllite with an increased risk of lung cancer in mesothelioma. Do you agree or disagree with that statement?

THE DEFENDANTS: Objection. Form.

THE WITNESS: Yeah. I agree with it.

Q (By Mr. Panatier) Sir, you're aware that World Health Organization has concluded that chrysotile causes mesothelioma?

A I have. Again, recognizing they are considering contaminated chrysotile in that population or those populations.

MR. PANATIER: Objection. Non-responsive.

Q (By Mr. Panatier) So here's what I'm going

to do. You were asked on December 4, 2007, this question, you agree, sir, that OSHA is of the position that chrysotile asbestos causes mesothelioma; correct? And your answer was yes; correct?

A Yes.

Q You were asked the question, you are aware that the Consumer Product Safety Commission is of the opinion that chrysotile causes mesothelioma; correct? Your answer was yes; correct?

A Yes.

THE DEFENDANTS: Objection. Form. Improper impeachment.

Q (By Mr. Panatier) Sir, you were asked in 2007, the International Agency of Research on Cancer were of the position that chrysotile causes mesothelioma? Your answer was yes; correct?

THE DEFENDANTS: Objection. Form. Improper impeachment.

THE WITNESS: Yes.

Q (By Mr. Panatier) Same with the World Health Organization, your answer was yes?

A Yes.

THE DEFENDANTS: Same objection.

Q (By Mr. Panatier) You don't dispute those

were your answers in 2007?

A No. My opinion is still the same today, that contaminated chrysotile can cause mesothelioma; and most people when we use the term chrysotile recognize that there may be contamination.

Q Looking at what I just read from on that page, I think it's page 868 to page 869, did you state yes, but they only mean contaminated chrysotile and not pure chrysotile?

THE DEFENDANTS: Objection. Form.

THE WITNESS: Obviously, I'd have to read through the deposition to see.

Q (By Mr. Panatier) Sorry. That was at trial testimony. Sorry. As you look at their documents and what they based them on, invariably they included the Canadian population, and that's all contaminated chrysotile, or those populations have contaminated chrysotile. If they're using that data to make these statements, then they're considered and not addressing the issue of uncontaminated. Did I read those questions and your answers correctly?

THE DEFENDANTS: Objection. Improper impeachment. Can we switch now?

MR. PANATIER: No.

Q (By Mr. Panatier) Sir, where did John Crane

get their chrysotile asbestos from?

A I don't know.

Q Have you asked them?

A No.

Q You make a big distinction between contaminated and uncontaminated chrysotile; right?

A Right.

Q You don't know where theirs came from?

A I don't know if it's important where it came from. You'd want to know what actually goes into the product and whether the product itself is contaminated; because it's contaminated coming out of the ground doesn't mean it's contaminated after mining.

Q Are you aware of some way that's been invented to take tremolite or actinolite or anthophyllite out of the final product?

A The milling process removes at least some if not all of the amphibole from different fractions.

Q How does it do that?

A Because -- you'd have to ask the milling people the technical aspects of it. They don't want those types of contaminants in the final product, because it's not the type of fiber they're looking for. So they use differentials in the way they float

and some other things.

Q Can you point me to any publication or article at all that says that that actually gets done where in the milling process they can remove all the contaminants?

A You can see that, because there's at least has been one study of the B sample of chrysotile which is a mixture from different Canadian mines where there's been no amphibole found. That's been looked at by a number of researchers.

Q Who?

A I think Dr. Dodson has looked at it, either -- I think Dr. Langert has looked at it.

Q Do you have those articles here? I mean we're in your office; right?

A We're in my office at the Medical Examiner's Office. No. I don't have those articles here.

Q This is your office? These are your golf trophies; right?

A This is one of my offices. Most of my literature is as you know at my University office.

Q Your literature is relevant to this examination; right?

A I certainly did not anticipate that you would be asking me about the Canadian B sample, and

I'm sure you're well aware of those studies anyway.

Q Unfortunately, I'm not testifying. You are. So I'm asking you about them. You don't have them here; right?

A No, I don't.

MR. PANATIER: Let's switch tapes.

(Whereupon, a moment was taken off the record.)

Q (By Mr. Panatier) Sir, you had said that the -- let me start over. Sir, you said that 4097.5 fibers per gram wet that Dr. Dodson found was elevated; correct?

A Yes.

Q You're able to say it's elevated, but not how much elevated over background; correct?

A That's correct.

Q Now in Dr. Gordon's report, you said you saw that?

A I saw it just before the deposition today.

Q He said that he found 22,623 fibers per gram wet. That's substantially elevated above background; correct?

A I mean it's above what I would expect to be background. Again, I don't know what his control population showed, but yeah, I would expect that. I don't know if I would use -- it's significantly above

background. Again, it's not a huge amount of fiber, but it is more than the average person would have walking around.

Q It's consistent with someone who has asbestos exposure in an occupational sense?

A Oh, sure. Both analyses are consistent with that.

Q He said that he found chrysotile, crocidolite, amosite, and tremolite in a ratio of 2 to 1 to 1 to 1.

A Right.

Q So the fiber that he found the most of as an individual category was chrysotile. True?

A Right.

Q Then he found equal amounts in the area he looked of crocidolite, amosite, and tremolite. Fair?

A That's what he reports, yes.

Q Sir, do you agree all exposures to amphibole asbestos whether it be crocidolite, amosite, tremolite, actinolite, or anthophyllite can contribute to the development of mesothelioma?

A I wouldn't expect background North American level exposures to contribute. That's not ever been shown.

Q Let me ask you a better question. Excluding

background exposures to asbestos, do you agree all exposed amphibole asbestos -- crocidolite, amosite, tremolite, actinolite, or anthophyllite -- contribute to the development of a person's mesothelioma?

A No. Again, even in occupational exposure where you're effectively at background or historical background concentration, I wouldn't expect to contribute. Above that, you would have to look at how often you're exposed over that; but if it's on a daily basis or over a long period of time, it's above traditional background, yeah, I would.

Q You've done no such analysis in this case for Mr. Johnston to determine what his working period of time was or concentration or frequency was for any type of asbestos product; correct?

A Yeah. The opinion is primarily based on the fiber burden analysis or the causation opinion.

Q Right. You have done really no work to determine his occupational history in his testimony. True?

A Right.

Q Do you agree there's no known safe level of exposure to crocidolite?

A I wouldn't agree with that. Very, very low levels of exposure have not been shown to cause any

disease. Crocidolite is potent at fairly low levels, certainly theoretically could give you mesothelioma.

Q Sir, let me know if you want to see this. This is your testimony. It's in the case of I don't know how -- Dennis, it's Ciocao, C-I-O-C-A-O. I don't know how to say that.

A Okay.

Q Ciocao. This is from August 31, 2009. And I'll show this to you if you want to see it. You were asked this question. Doctor, is there safe levels of exposure to asbestos? Answer, yes. Question, what is it? Your answer, I think it depends on the fiber type. I'm not sure we know what it is for crocidolite. Although, we do not recognize, one fiber -- although, we do recognize that one fiber doesn't hurt anybody, so there's a safe level. Exactly what the lowest safe level is, I don't think we know especially for the amphiboles. Is that still your opinion?

THE DEFENDANTS: Objection to form.

THE WITNESS: Yes.

Q (By Mr. Panatier) So you don't know what a safe level would be for crocidolite. Fair?

A We don't know what the minimum amount is that would be considered safe. We know it exists. We

know that it's low, but we don't know what the number is. The lowest number that I have again seen in the literature related to the development of mesothelioma is down around 0.3 or zero point fiber years. Some people speculated it might be as low as 0.1. In the published data, I think it's about 0.3.

Again, it's very low, but there is a level where, for example, background in North America where you find low crocidolite in people. It's not considered to have an effect.

Q Right. You think there may be a level, but you don't know what it is?

A We don't know what the number is, yeah.

Q Can you identify any specific product that would be the source of the tremolite, the amosite, or the crocidolite in Mr. Johnston's lungs?

A No.

Q But you can identify a source of a potential source of the chrysotile in his lungs, because you know he was exposed to John Crane chrysotile asbestos gaskets and packing; right?

A Yeah. You mentioned a particular product, and that would not be the source of what is found in there. You would not get that much in the lungs, but it is a potential source of chrysotile.

Q Certainly he had a potential of more than just one exposure to a type of chrysotile product; right? I mean in that setting we know about the John Crane products, but he probably had exposures to other chrysotile products. Fair?

A At least chrysotile containing products. It may not be necessarily only chrysotile containing products, but I would expect other sources of chrysotile.

Q Including the John Crane. True?

A I'm not sure that any of the John Crane would be measurable in here, but it would be at least a mathematical source.

Q Have you ever seen any studies, air studies, or work practice studies of John Crane products?

A Again, I'd have to go back and look at the ones I cited and see if they're related to John Crane or some other company.

Q As you sit here today, you can't say you've actually seen any work studies done on John Crane products?

A Yeah. I don't know if I have or not, because I don't know what companies were used for those studies.

Q So you don't know as you sit here what the

fiber release would be for a John Crane product. Fair?

A Again, as I talked about before, the way the literature indicates, it's all very low no matter the company.

Q I'm just asking you if you know what the fiber release would be for a John Crane asbestos or packing product?

A Again, I would expect it to be very low unless you can show me data otherwise.

Q I am not actually here to produce data. You are, because you're the expert witness. Do you have a study?

THE DEFENDANTS: Objection. Form.

THE WITNESS: As I said, all of the studies that fit together show uniformly low release; and it, I don't see anything that seemed to be company specific.

Q (By Mr. Panatier) What do you define as low release?

A Those were -- some of them had no release, and some studies was like I think .02, then everything in between.

Q What makes something a low release to you as opposed to a higher release of asbestos?

A Friable products would result in high release. Encapsulated products, it's very low numbers. I arbitrarily just use the current PEL for low release, but obviously, they can get much lower than that.

Q And they can get higher than that. True?

A Well, sure.

Q In fact, OSHA told Fred Bolter that using his numbers, someone could experience asbestos exposure above the time weighted average; correct?

THE DEFENDANTS: Objection. Form.

THE WITNESS: Instead of using his numbers, somebody could. They've never demonstrated anybody has, but they're basically taking the highest in assuming the worse case scenario even though it wouldn't be associated with an increased risk of disease.

Q (By Mr. Panatier) When you're talking about risk of disease, once someone has the disease, you're no longer talking about the risk?

A There is no risk. You're talking about they've got it.

Q You've got the disease. Make sure I've got through everything. We don't need to go off the record or anything, but it just might take a second.

Few more questions. Sir, in all fairness, would you agree that really outside the courtroom, you're not really out there as an asbestos expert?

THE DEFENDANTS: Objection. Form.

THE WITNESS: No. Outside -- I mean I'm a forensic pathologist. Pretty much everything I do has some sort of medical/legal bearing, and a big part of my practice is asbestos. I'm not a researcher in asbestos, but a substantial part of my practice is evaluating asbestos-related disease.

Q (By Mr. Panatier) Of your forensic pathology practice?

A Yeah.

Q I mean -- and maybe I just watch too much CSI, but we're in the office of the Medical Examiner. That's you; right?

A I am.

Q And as the Medical Examiner, you like evaluate the cause of death for people; right?

A When I'm acting as a Medical Examiner, yeah.

Q As a forensic pathologist, you're trying to determine what a disease is or what caused it?

A Yeah. In many cases, yeah.

Q And just in a given year, how many cases do

you see as a Medical Examiner or forensic pathologist that have to do with mesothelioma that don't come from an attorney?

A Oh, very few.

Q Like how many?

A As a forensic pathologist, that's what I am, I'll probably see a half dozen or so a year through the hospital. As a Medical Examiner, I would not expect to see any.

Q Right. So you might see half a dozen through the hospital compared to --

A Right.

Q What? Fifty, a hundred that you might see through litigation?

A Yeah. Over a hundred probably.

Q So would it be fair to say that you're more of an asbestos expert in the courtroom than outside of it?

A No. Because many of the cases I evaluate never get to a courtroom. I give my opinion, and that's kind of the end of my involvement in the case.

Q But it's your opinion that you give to lawyers; right?

A Sure.

Q And for the most part 85, 90 percent of it

is defense lawyers in asbestos litigation. True?

A That's who I give my opinion to, yeah. They don't always like it, but they get it.

Q When was the last time if at all that you testified in a deposition or at trial that a defendant's chrysotile product contributed to a person's mesothelioma?

A Don't remember.

Q Have you ever done that?

A I think I've been asked -- I know I've been asked a hypothetical that assumed that it was contaminated chrysotile, and there was heavy exposure; and would I attribute, and I did. And I don't remember whether it was ever established that it was, but that was the hypothetical that was given.

Q So what you can cite to me here is that in a hypothetical you were given, you were able to hypothetically attribute someone's mesothelioma to contaminated chrysotile under certain circumstances. Fair?

A Yes.

MR. PANATIER: I think that's all I have. Thank you, sir.

MS. ECKERT: I don't have any questions.

MR. TIVIN: Does anyone on the phone

have any questions?

MR. SPRAGUE: This is Wes Sprague. I actually have a couple questions. Only take three or four questions I guess.

MR. TIVIN: Off the record.

(Whereupon, a moment was taken off the record.)

CROSS-EXAMINATION

QUESTIONS BY MR. SPRAGUE:

Q Doctor, my name is Wes Sprague. I have a few questions for you. Can you hear me okay?

A Just fine.

Q Good deal. Based upon your review of information in relation to asbestos cases, are you familiar with general uses for gaskets and packing?

A In general.

Q Are you aware that John Crane gaskets and packing can be used in conjunction with pumps and valves?

A Yes.

Q Would your opinion that John Crane gaskets and packing did not cause Mr. Johnston's mesothelioma remain the same regardless of what type of pump or valve that John Crane gaskets and packing were used in?

A That's correct.

Q Would your opinion remain the same regardless of who manufactured the pumps or valves that the John Crane gaskets and packing were used in?

A Same opinion.

MR. SPRAGUE: Thank you, Doctor. That's all I have.

MR. PANATIER: Anybody else on the phone?

MR. TIVIN: Hearing nothing, I'm going to continue.

REDIRECT EXAMINATION

QUESTIONS BY MR. TIVIN:

Q Dr. Graham, you were asked some questions about your being an expert in the courtroom versus outside the courtroom with regard to asbestos. Do you remember that?

A Yes.

Q In the cases that you see from the hospital, is there any difference in the presentation of mesothelioma that you see in a hospital or whether you see it in a medical/legal sense?

A No. The diagnostic principals are the same.

Q In your ability to determine the causation of mesothelioma in a hospital setting versus a medical/legal setting, is that the same?

A I mean the process is the same, but rarely in the hospital is the cause an issue. Mesothelioma whether it's caused by asbestos or not behaves the same. So it's really not an issue in the hospital. The ones I see in the hospital are being diagnosed for a basis for therapy.

Q I guess my question is, do you have a set of causation standards that you use in the hospital sense and a different set of causation standards that you use in the medical/legal sense?

A No.

Q You were asked about fiber release. Are you aware of studies that show fiber release from the use of thermal insulation that can be hundred's of fibers per CC?

A Yes.

Q Would you consider that type of exposure to be a high exposure?

A That would be heavy exposure I think by anybody's criteria.

Q And you were asking about -- you were asked about the number of different companies that you have testified for. The products those companies manufactured, do they all have to do with chrysotile?

A I think I was asked to testify or consult.

Q Or consult?

A Some had amphibole products, and some have chrysotile.

Q Does it matter what company retains you, do your opinions change based on the company?

A My opinion doesn't. Obviously, the question changes depending upon what the product at issue is. But, no, somebody asks me -- I mean a lot of people don't even tell me who they represent. They just ask me a question about something, and I answer it. If it helps them, fine. If it doesn't, that's fine too.

Q You were asked questions about Mr. Bolter's study. Is his the only study that you relied upon to determine whether the use of gaskets and packing resulted in a low dose of low fiber release?

A No. As I mentioned, the others are at least a half a dozen.

Q You were asked some questions about crocidolite. People -- am I correct in saying that normally crocidolite is known as blue asbestos?

A Yes.

Q Amosite is known as brown asbestos?

A Yes.

Q And chrysotile is white asbestos?

A Yes.

MR. TIVIN: Could I have the plaintiff's transcript?

Q (By Mr. Tivin) You were asked some questions about Mr. Johnston's exposure?

MR. PANATIER: Here's Volume I. Here's Volume II.

Q (By Mr. Tivin) I just want you to assume on page 570 that Mr. Johnston testified that -- the last area I want to go over is a blue asbestos gaskets, and for you to understand blue asbestos gaskets would be seen as crocidolite asbestos?

A Okay.

Q Do you remember he testified? Do you remember that testimony? Do you recall what they look like? Answer, they were a dark blue with some white flakes or specs on them. Did they have any writing on them? Just the Garloch logo or name. Did you see any other name other than the Garloch name on those gaskets? I don't remember seeing one. There may have been one. It may have been one. May have had one.

I want you to assume that is his testimony. Using that assumption, does that give you any indication that Mr. Johnston was ever exposed to a John Crane crocidolite product?

A No. I mean the only one he identifies is

Garloch.

Q Also I want you to assume he testifies that on page 571, how many times or occasions did you see a blue gasket? He said at least a half a dozen times. Okay.

A Okay.

Q And he testifies further on 572 if I add this up over eight years, it was a half dozen times that you saw a gasket being installed or removed? He said half a dozen times. Then he says three or four times being cut; is that correct? I want you to assume that is his testimony.

A Okay.

Q Would that lead you to believe there was any large dose of, that Mr. Johnston received a large dose of crocidolite from the use of gaskets?

A No.

Q If you were to further assume that this -- that he was a bystander and not a direct user of those gaskets at times, what would that tell you further about his dose if anything?

A It would be even more minimal.

Q Finally you were asked some questions about a tremolite in John Crane products. Have you seen any indication that a does that Mr. Johnston may have

received from the use of any gasket and packing product or any John Crane product would give a high dose of tremolite asbestos to the extent it could cause mesothelioma?

A Would not.

Q And all the questions that you've -- strike that. You were asked questions about your expertise. Have you ever been, testified as an expert in different states?

A Yes.

Q Approximately how many different states have you been, approximately different states have you been qualified as an expert in to speak about asbestos and the causation of asbestos-related disease?

A I don't know. Probably a dozen.

Q Have you ever not been qualified as an expert to talk about the causation of asbestos disease?

A No.

Q Any of the questions plaintiff's counsel asked you regarding John Crane or regarding fiber release change any of your opinions as to whether any exposure to John Crane gaskets or packing contributed to Mr. Johnston's mesothelioma?

A No.

Q Your opinion is still that any exposure he had to a John Crane gasket or packing product did not cause Mr. Johnston mesothelioma?

MR. PANATIER: Leading.

THE WITNESS: Correct.

Q (By Mr. Tivin) Let me rephrase. Based upon everything you heard on cross-examination, do you have an opinion as to whether the exposure to any John Crane gasket or packing product was a cause or a contributed cause or a substantial contributing factor to Mr. Johnston's mesothelioma?

A Yeah. I have an opinion.

Q What is that opinion?

A John Crane gaskets and packing had nothing to do with his disease.

MR. TIVIN: Thank you, sir.

MR. PANATIER: I'll have some follow up in a minute. I'll grab -- sir, I just need to find something, then it will be quick. Ready?

THE WITNESS: Yep.

RECROSS-EXAMINATION

QUESTIONS BY MR. PANATIER:

Q Sir, it is your opinion that contaminated chrysotile containing tremolite can cause mesothelioma true?

A If the amounts of contamination is sufficient and the dose is enough, yes.

Q I'm going to go back to this testimony in the Pelly case in 2007 and read the question and answer to you, and ask to see it if you need to. Question, first of all, it's your opinion that contaminated chrysotile containing tremolite can cause mesothelioma. True? Your answer was pleural mesothelioma in humans, yes. Was that your answer then?

A Yes.

Q Sir, with regard to your work at the hospital and contrasting it with your work for asbestos defendants, in a hospital, when you issue a report as a forensic pathologist -- well, I guess the question is, do you have to issue a report?

A In the hospital the report is a surgical pathology report.

Q So you do have to issue reports in the area of your expertise in the hospital; right?

A If I'm the primary pathologist responsible for the case, it is. If someone shows me, one of my associates brings it to me and asks me for my opinion, then I don't.

Q Okay. So if you're the primary guy on it,

you have to issue a report; right?

A Yes.

Q Do you have to issue reports as the medical examiner?

A Yes.

Q Have you ever stated in a report that you've written either for the Medical Examiner, as the Medical Examiner or as a forensic pathologist, have you ever included in any report that it is generally accepted that amphibole asbestos is a potent human pleural carcinogen capable of leading to the development of pleural mesothelioma after limited exposure?

A Sure.

Q In what scenario have you done that?

A In the medical/legal consultations.

Q Okay. I'm not talking about that. And maybe my question was bad. In your non-medical/legal work, right, not for defendants and asbestos litigation, okay, so the work that you do as the Medical Examiner and in your official position for the hospital, have you authored reports with that sentence in it?

A I don't address discussions in those reports. I just put a diagnosis down.

Q So it would also be fair that you haven't said in either of those capacities in contrast to amphibole asbestos, chrysotile dust including any contaminating amphibole is a week human carcinogen. True?

A I don't discuss causation issues in the hospital reports. I would just put a final line for the Medical Examiner reports. I don't put discussions in my reports like that.

Q So for your non-legal work, you don't opine on causation or the relative potencies of asbestos. True?

A I may give a causation opinion, but I don't go through a discussion leading up to it.

Q You don't compare amphiboles with serpentine or anything like that. You may say it's from asbestos?

A In the hospital, I wouldn't even do that. I would just say what's there -- because the issue in the hospital case is not causation. It's diagnosis. Unless it would happen to be an autopsy case, then I would.

Q Have you ever in an autopsy case that was not medical/legal consulting gone through an analysis of chrysotile versus amosite or amphibole asbestos?

A You know, I probably haven't because usually the resident writes those reports, and so --

Q Has any resident under you done that?

A No.

Q And lastly, are you aware of any scientific or regulatory body in the world, solar system, or galaxy, or universe that has opined that chrysotile asbestos is safe?

THE DEFENDANTS: Objection. Form.

THE WITNESS: It's always qualified. They have opined that chrysotile can be safe in certain circumstances, and there are bodies that talked about as I recall very low release wouldn't be expected to cause disease. But just as a general statements, no.

Q (By Mr. Panatier) No one has come out and said it's safe; right?

A Just the bottom line, no qualification.

Q Right?

A Correct.

Q Are you aware of -- same question, any scientific or regulatory body, we'll leave it with planet earth, that said chrysotile is incapable of causing mesothelioma?

THE DEFENDANTS: Objection. Form.

THE WITNESS: As just a general statement, no.

Q (By Mr. Panatier) Correct. Are you aware of any scientific or regulatory body on this planet that has said that there is a known safe level of exposure for chrysotile asbestos?

A No.

MR. PANATIER: That's all the questions I have. Thank you, sir.

THE DEFENDANTS: I want to put an objection to form on the last question.

FURTHER DIRECT EXAMINATION

QUESTIONS BY MR. TIVIN:

Q One last question, when you were talking about the contaminated chrysotile and the dose it would require, that is you were talking about the 75 to 100 fibers per CC year; correct?

A Yes.

Q So if someone used Canadian chrysotile that was contaminated with tremolite, you would need to see a fiber CC year of 75 to 100 before you could relate it to the development of mesothelioma; correct?

A And that assumes that it's got sufficient contamination that would be capable of causing it at all, yes.

Q If someone had an exposure of less than two fiber per CC years of Canadian contaminated chrysotile, you don't believe that that would in any way cause any asbestos-related disease; correct?

A That's correct.

MR. PANATIER: Leading.

Q (By Mr. Tivin) I'll rephrase. If someone had exposure of less than two fiber per CC years, do you believe within a reasonable degree of medical and scientific certainty as to whether that could cause any asbestos-related disease from asbestosis to pleural plaques to lung cancer to mesothelioma?

A Not chrysotile wouldn't. Chrysotile would not.

MR. TIVIN: Thank you. No further questions.

MR. PANATIER: One follow up.

FURTHER CROSS-EXAMINATION

QUESTIONS BY MR. PANATIER:

Q For any of the opinions that you've given today having to do with asbestos causation, chrysotile versus amosite or crocidolite or serpentine versus amphibole or the level of exposure that would be necessary to get disease from any type of asbestos, have you ever published on those subjects?

A Indirectly in that article we talked about earlier. There's a discussion about why contaminated chrysotile may cause mesothelioma, and again this is back from '98, so it doesn't include the populations that were exposed or have been reported that have been exposed to uncontaminated. So there is a general discussion about some of that, but not with numbers and things.

Q If we wanted to find out what your, what you've put out there as your published opinion, we have part of one publication to go to?

A Well, plus obviously all the depositions where I've been asked that. As far as scientific literature, yeah, the one part of that one article.

Q There's only one thing in the scientific community that you've put out there?

A Right.

MR. PANATIER: Thank you.

MR. TIVIN: Nothing further.

THE WITNESS: Waive.

(The witness waives signature.)

(The deposition concluded at 12:12 p.m.)

CERTIFICATE OF REPORTER

STATE OF MISSOURI) ss:
COUNTY OF ST. LOUIS)

I, JULIE HUNDELT, Certified Court Reporter, the officer before whom the foregoing deposition was taken, do hereby certify that the witness whose testimony appears in the foregoing deposition was duly sworn by me; that the testimony of said witness was taken by me to the best of my ability and thereafter reduced to typewriting under my direction; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this deposition was taken, and further that I am not a relative or employee of any attorney or counsel employed by the parties thereto, nor financially or otherwise interested in the outcome of the action.

_____

Notary Public in and for
the State of Missouri