IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF ARIZONA

In the Matter of Petition of EL PASO NATURAL GAS COMPANY, LLC a Delaware Limited Liability Corporation, 2 North Nevada Avenue Colorado Springs, Colorado 80903 to Perpetuate Testimony of WILLIAM L. CHENOWETH	Case No. MC13-08002-PCT-DGC

DEPOSITION OF WILLIAM L. CHENOWETH

Taken by El Paso Natural Gas

April 24, 2014

Volume I

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ALSO PRESENT: Tracy Plessinger, J Elmer, April Gil.

ON PHONE: Jeffrey Sands, Marguerite Bettina Munne, Steve Miller, Katherine Kane.

Videotape Deposition of WILLIAM L CHENOWETH, taken by El Paso Natural Gas, pursuant to Notice and the Federal Rules of Civil Procedure, the Mesa Room, Fairfield Inn & Suites, 225 Main St, Grand Junction, Colorado, commencing at the hour of 8:17 a.m. on the 24th day of April, 2014, before Keith Rusk, Court Reporter and Notary Public.

JOHN DENNIS DUNN: We're on the record.

My name is John Dennis Dunn, Judicial Research Services.

This is tape number 1 in volume 2 in the continuing testimony of Mr. William Chenoweth in Case Number MC13-08002 from January 17th, 4 of 201

Today is April 24 of 2014. The time is approximately 8:16, and we're on the record.

Oh, excuse me, we should identify everybody here on the record. Counsel will now identify themselves for the record.

ROBERT H. FOSTER: Robert Foster, US Department of Justice, Denver, Colorado.

CHRISTOPHER J. NEUMANN: Neumann with Greenberg Traurig on behalf of El Paso Natural Gas.

DANIEL J. SCHNEE: Daniel Schnee, in-house counsel, El Paso Natural Gas.

CARLOS D. RONSTADT: Carlos Ronstandt, I co-counsel with Mike Mongini for Babbitt Ranches, CO Bar.

ANGELA MO: Angela Mo, Department of Justice.

JOHN E. ELMER: John Elmer, Stoller, Department of Energy.

APRIL GIL: April Gil, Department of Energy.

TRACEY PLESSINGER: Tracey Plessinger, Department of Energy.

DAVID A. TAYLOR: David Taylor, Navajo Nation, Department of Justice.

SAMIR J. ABDELNOUR: Samir Abdelnour with Barg Coffin Lewis & Trapp on behalf of BNSF Railway.

JOHN DENNIS DUNN: Anybody else on the phone, please.

BETTINA MUME: Bettina Mume.

STEVEN MILLER: Steven Miller.

JEFF SANDS: Jeff Sands, Department of Justice, Environmental Enforcement Section.

JOHN DENNIS DUNN: Okay, on the record, you can go ahead and ask your —

MARIE RONGONE: Marie Rongone, Department of Justice.

JOHN DENNIS DUNN: Okay.

WILLIAM CHENOWETH

being produced, and being first duly sworn, examined and testified as follows:

EXAMINATION

BY ROBERT H. FOSTER:

Q. Good morning, Mr. Chenoweth. Sure I'm you —

A. Good morning.

Q. — you remember most of the people from before. My name is Robert Foster, I'm with the Department of Justice out of Denver, Colorado.

First of all, welcome back. How is your knee? I know you left for knee surgery, how is it now?

A. Yeah, I had it three months ago. I'm doing great.

Q. Okay. Well, good to hear that. I'm going to start out by asking you some questions about exploration activities that the Atomic Energy Commission did while you were there. And I'm only talking about stuff that you actually saw. I'm not interested in stuff you heard about from other people or you read about in a book, or something like that? Okay.

A. Okay.

Q. So can you tell me, do you know how the Atomic Energy Commission got involved in exploration originally out there.

A. Can you repeat that?

Q. Can you tell me how the Atomic Energy, how did it happen that the AEC got involved in exploration? Was there a directive from someone, or did you get hired to explore and somebody said —

A. Well, when the AEC took over from the Manhattan Engineer District, the public was afraid of atomic energy, and it was a great push to develop a nuclear arsenal. So the AEC was created, all of this money, and they were to find as much uranium and get as much uranium processed as they could for the Cold War.

Q. And when you were out there, anybody else doing exploration beside the Atomic Energy Commission?

A. No, just the contractors. They had a memorandum of understanding with the AEC to provide all this expertise to get started with drilling programs and geologic studies, and all that. And even then the AEC increased their staff and phased the USGS out of everything. But, but in the beginning there were few vanadium companies, like US Vanadium, a Union Carbide

subsidiary, and Vanadium Corporation of America. They were out there because they had been in the uranium business all through the forties and they knew a little bit. But they really had to wait for the government incentives, and everything, to get them going under the AEC program.

Q. And do you know whether or not, just use as an example Vanadium Corporation, do you know whether their exploration activities were funded by the AEC, or were they doing it on their own?

A. Oh, they were doing it on their own because they were in business, they were still selling vanadium to steel companies. And when the AEC came and was going to buy the uranium and the ore, you know, they kept on going. But not — didn't have any big, or anything. The Union Carbon, or US Vanadium, they were more aggressive than VCA was, in my opinion, so they were — they had their foot in the door thought the Manhattan Project being a contractor. So they, they were gearing up at Uravan to, to go out look for uranium as well vanadium.

Q. Let's talk about Union Carbide for a minute. What type of exploration activities did they engage in?

A. Oh, they did a little drilling, k

drilling behind their mines, and things like that. No big effort, really. They, they were limited, so they participated in the Manhattan Project, but they limited in not picking up any private lands that their subsidiary, Union Mines, had acquired. Anyway, they were limited on where they could go because of their work on the Manhattan Project. So they worked mainly on their own properties and private lands all over Southwestern Colorado.

Q. Did they do any exploration in Nevada?

A. Not to —

Q. I'm sorry, Arizona.

A. No, they didn't. They, they said they'd rather not deal with the Navajos.

Q. What about Vanadium Corporation, did they do any exploration work in Arizona?

A. They were there, but very little. They were mining in the Carrizos and over in Monument Valley, and they did a little bit to keep finding behind their mines, and so forth, but no big exploration. They, they seemed to want the government to take a lead and then follow them.

Q. Well, whatever little work that Union Corporation did, did that include exploration drilling?

A. Oh, yeah.

Q. Can you —

A. Well, it might be drilling behind mines and things like that, would be more development drilling. But there were some wide spacing drill I know they did in the Carrizos, which would be you call exploration rather than development.

Q. What is the difference between exploration and development mining at this time when you were working for the AEC?

A. I'd say it was the drill hole spacing. If they did wide space drilling, that'd be more exploration. If they were doing, you know, on hundred-foot centers or thousand-foot. If they were back in 50-foot centers behind the mine, that would be development drilling.

Q. Now — sorry.

A. That would be just my impression. Really, when the AEC took over and started this, all the company just sort of sat back and waited to see what was going on.

Q. Let's talk for a minute about AEC exploration drilling.

A. Uh-huh.

Q. How big a hole would a, would typically, an exploration drill hole be?

A. Oh, the beginning was core holes. Later on they developed non-core rotary drills like the seismograph companies used. Oh, I forget the size of the core, it was NX and BX and all that stuff. It can't remember, but it would be about the size of a silver dollar.

Q. Okay.

A. That was the core size.

Q. And then what happened to the material that was pulled out of the hole?

A. Okay. Well, they put it in wooden core boxes, and the geologists would, would take them and make a geological log and scan it with a gamma G counter. And if they found any radiometric, core radiometric readings, they'd take those samples and send them to Grand Junction for assaying to get uranium. And — but also we were doing — the AEC was doing down-hole radiometric probes where they lowered a detector down a hole, pull it up, make a chart that would tell them about where radioactivity was encountered and the geologists would match it to the core here and know where to sample, also.

Q. Well, what I'm trying to get a sense of is how much waste, if any, was generated by exploratory drilling. Is that something that you can estimate?

A. Well, core drilling is, all you do is taking this little, long narrow piece of rock out of the hole, and it would go back to the field camp, it would be examined, and all that. And when I knew the core hole, the core drilling I worked on in the Carrizos and the Lukachukai — you want me to spell that for you?

THE COURT REPORTER: I think I did last time.

A. I did last time. Return the rock to the geology office and then had them stacked up. And when the project was over, we usually asked Grand Junction, what shall we do? Then they'd say, dump it and give the Navajos the core boxes because they liked that lumber, or something. So the rocks that weren't sampled for uranium were just dumped on the ground, and they're still laying around some of the old drill sites on Columbia Mesa, I've been told.

Q. So they'd return them to about where they took the core samples?

A. No, they'd be at, probably at the field offices.

Q. Of the —

A. Field camps.

Q. Okay.

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A. The AEC had these field camps, drilling camps all around, all over the Colorado Plateau. And I know our cores were just dumped right there where the field office was, and they're probably still there today out in the, out in — if the sand hasn't, if the sand dunes haven't covered them up.

Q. Can you estimate, during the time you were in the, working for the AEC, is it possible to estimate the volume of this waste material that was left at the various field camps? Would that be —

A. No.

Q. — a hill the size of this room, would it be —

A. Well, they all — since they drilled over the Colorado Plateau and in Wyoming and South Dakota, and probably other places, too, they — I just couldn't estimate, couldn't estimate the total volume. There are records, there are probably records about how much core drilling was done as opposed to rotary drilling was done.

Q. Are there different amounts of waste that come out of rotary drilling —

A. Oh, yeah.

Q. — as opposed core drilling?

A. Rotary drilling is where they bring

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basically compressed air and a, and a tri-cone bit. And as the, as the bit bores down, the air blows the chips up, the cuttings, and they're collected at the drill and piled on little piles out on the ground. In some of my pictures you guys copied, it shows a little, little, a pile of cuttings every five feet piled on the ground for the geologist to look at. And when that was — and they, once they scanned and looked in their log and found out where the radioactivity and took samples were, they took samples and all those little piles of cuttings left on the ground out there. And, and not even back in the hole, or anything.

Q. Is it —

A. And so there was more, there's volume of waste, that you were speaking of, of hardrock rotary drilling than there is in core drilling.

Q. Can you estimate the amounts of waste that would come out of one rotary drill hole?

A. Oh, I know some of these drill holes in the Carrizos I worked on was maybe 120 feet deep. I'd say, looking at some of my old pictures, every hundred, every — oh, I was going to say three or four wheelbarrows full, a lot — because five-foot sample is a pile about, about maybe 18 inches

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inches. It's a pile of rocks chips like that.

Q. So one rotary drill hole might fill a wheelbarrow?

A. No, it might fill three or four of them.

Q. One hole?

A. One hole. One hundred-foot hole.

Q. And what about the other kind of drilling?

A. Well, the core, the core, the core drilling doesn't leave any waste because you take the core out of the hole.

Q. Gotcha. Do you know if there's ever a map anywhere that shows the locations of all the field camps you've referred to?

A. Yes. There's no map, but when the AEC, DOE had a big reunion of all the employees that worked out here, I think in 1983, maybe, put together a little, Al Albrethsen, myself and F McGinley put together a little handout to those that attended, and in the back we listed all the field camps. And people looked at it, well, you missed this, this one, this one. So on my handwritten copy, if you have a copy of it in your files, there are, there's maybe six field camps included that were off the original list.

Q. Okay.

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A. But all of these weren't drilling, some of them were reconnaissance camps like, like on the, the Cove School Camp, the Cove School. The Fill a Lukachukai is probably where the biggest camp that I remember. And then there were smaller camps of one or two trailers for reconnaissance where they would go out and be evaluating areas for future drilling. But there is a list of camps. And I made a, if on Arizona, well, I think for the, on the Navajo Reservation I made a list of all the camps there and about when they were occupied. I can provide that, if you want.

Q. If we don't already have it, I'd sure like it.

A. There's been so much of my stuff, I don't know what you have and what you don't have.

Q. Well, there's going to be a whole lot of stuff that you've given us that we've obtained. I'm actually going to show you later —

A. Yeah.

Q. — so it might be in there. I'm, I'm, I'm going to ask you a couple of questions, if I might, about mining and leasing. Well, first before, let's go back to uranium up exploration. I'm sorry. You were working for the Atomic Energy Commission, I believe from 1952 to 1982; is that right?

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A. Well, the AEC only lasted, I think, 1971. Then we became ERDA.

Q. ERDA.

A. For two or three years, and then came the Department of Energy in 1977, maybe, in that, I can't remember the date, so.

Q. Okay. Well, let's talk — but you were working for the federal government then —

A. Yeah.

Q. — from '82 — I'm sorry, from '52?

A. '83.

Q. '83.

A. '52 to '83.

Q. Okay. And during that period, do you recall when exploration activities took place, what year?

A. Oh, I think in —

Q. What years?

A. When we talk about AEC drilling projects, which were done mainly by the AEC — it was done by the USGS, and AEC gradually took it over started out, I think the first drilling projects were in '49, and the last one was in '56. Because then the industry saw there was an incentive to go out and find uranium, there was a price schedule. And the a

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industry drilling increased, that we used to track of, the AEC decided, well, we'll get out of the business and let industry take over. And that was, as the AEC drilling projects were in '56.

Q. And beginning in 1956, then the exploration drilling was accomplished by private entities?

A. Oh, yeah.

Q. Did the AEC supervise private entities —

A. No.

Q. — out there?

A. All we did was collect the data. We collected the data every month of how many, who this company, how many feet they drilled this. And all plotted in, in some of our old AEC reports, old Blue Books, we kept track of the drilling and showed it increased year by year.

Q. Okay.

A. And that was a measure, that was one of the measures. Washington wanted to see what they were doing, the number, the number of feet of holes done every year.

Q. Were private entities doing drilling in Arizona, exploration drilling in Arizona in 1956?

A. Oh, yeah. A lot of drilling was in Monument Valley where — well, there were there

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was a lot done around the Carrizos. And the McGee in the Lukachukai, when AEC stopped, when AEC, Kerr-McGee increased their amount of drilling in Lukachukai, so.

Q. Can you think of anybody else besides Kerr-McGee who was doing exploration —

A. Oh —

Q. — after '56?

A. Oh, yeah, in Arizona —

Q. I'm done.

A. Well, in Monument Valley, there were two big companies; Gilbraltar Minerals and Industrial Uranium Company, they — there's a syncline, the rocks on each side were dipping into the syncline. There's uranium over here and uranium over here, they got out on the syncline, the Ojao syncline. And Industrial found several huge deposits; at the Moonlight, the Moonlight and the Firelight and the Big O. And Gilbraltar found the Bootjack deposit. All these large deposits there in the Ojao syncline. And like, Kerr-McGee, Climax Uranium and Walter Duncan, Oklahoma oilman, they were doing drilling for AEC and in the Carrizos. Dozens of those companies drilling around. And in Cameron, of course, Metals probably was — after they took over Arro, they did

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all kinds of drilling there to block out the ore. As a result they got a contract with AEC to build a mill at Tuba City.

Q. Do you know if any private entities were doing exploration drilling in New Mexico in 1956?

A. Oh, yeah, once Ambrosia Lake was hot, they went wild down there. All the big companies like and Kerr-McGee, and Phillips Petroleum was one of the first ones. Anyway, no. Once, once they found the big discovery in Ambrosia Lake was made, with the biggest drilling area in the, in the Four Corners.

Q. When private entities began drilling in 1956, what did they both core drilling and rotary?

A. Oh, yeah. Core drilling is expensive. I forget, some of our AEC contracts were $3 a foot. While rotary drilling, some of our rotary drilling contracts were about $.80 a foot. Once, once down-hole logging, putting an instrument, pulling it up, once that was developed, the AEC really spearheaded, everybody went to rotary drilling, because it's cheaper and a lot faster than core drilling.

They always did core drilling to sample of material to see what kind of material it was, what kind of minerals there were, what kind of rock

it was in, and all that. Because rotary, you got much drilling, you get all these little ripples and dust.

Q. Well, based, based on your personal experience, can you say whether or not most exploration took place before 1956 or after 1956?

A. Oh, after 1956. And these — year after the AEC and ERDA, all that, up to 1983 we put a book down here called the Blue Book, all these statistics. And every year we'd plot the drilling. And after it showed how it just picked up, and then — then beginning about 1962 it really dropped when AEC started limiting the amount of uranium they could buy. And these — and that was one of the things AEC did. All our steel guys, we always collected all drilling we could from the companies because Washington had to know what the industry was doing. That was a measure of the viability of the industry, because they were there looking and finding more uranium.

Q. Somebody might have asked you at this time, so I apologize: This Blue Book year-end, do you know if a copy exists anywhere today?

A. Oh, I think down at the DOE office in the library, they probably have a complete set. We started in 1971, I think, putting out the Book,

and they ended in '83. And then when, when the functions down here were transferred to Energy Information Administration, they started putting a Brown Book back in DC. But the Blue Books are available. I think they even have a set at Colorado Mesa University. I even have a set I've kept. It's getting pretty dog-eared because everybody's borrowing them.

Q. Okay. And did you say the first Blue Book came out in 1971?

A. Something like that. It was after the AEC program was interested and people saying, "Well, government spent all this money, what's going on" and all that. And because during the program — going on for years everything was very secret, and they didn't even — the AEC in the beginning, in the '50s, didn't even announce how much uranium was — they didn't know how much uranium was being produced every year, how much drilling was being done, but no details where it was coming from, anything like that. But the Books were a result of industry wanting to know what was going on, and congress wanted to know, and that all.

Q. Let's talk about the period between 1956 and 1971. Do you know if there's a record of the amount of drilling that took place —

A. Oh, yeah.

Q. — in the Four Corners?

A. Yeah.

Q. Where would that be?

A. In the Blue Book.

Q. So there were Blue Books before —

A. No, no, but they went back.

Q. Oh, okay.

A. Because when I worked — when I was in the Cameron area from '57 to '61 or '62 I collected lots of drilling, and in my Cameron report I got a table of the drilling, of the industry drilling year by year in that Cameron report of mine. And in the Lukachukai I — somewhere I collected drilling data on the Lukachukai from Kerr-McGee, mainly.

Q. Let's talk a little bit about the information that the AEC got from exploration. This would be, I guess from, what did you say, 1949?

A. Uh-huh.

Q. And by AEC, I'm including the United States Geologic Society —

A. Oh, yeah, sure.

Q. — just sort of as a group. What was that information transmitted and to whom was it given?

A. Well, every drilling project, had to

write a report and these reports got put in a file, and eventually a lot of it got open filed, released to the public. And the same with the USGS, they made reports and eventually that was all released to the public sooner or later, after — in the beginning, everything the AEC did was highly classified, you know, they couldn't even hardly release anything of what they were doing, and all that. And even one of the drilling reports on Cove Mesa has, was security information, you know, stamped on it. Then it's been declassified. But the drilling data, all the drill hole, all the drill hole logs from all our drilling projects including USGS ones, all that data when they were downsizing the office out here, that all went to USGS in Denver, in the Federal Center. And they put it in a warehouse, and I think they've lost it now.

Q. Again, focussing on that period 1949 until 1956, I guess what I'm trying to understand is supposing AEC went out and they found the mother lode of carnotite, somehow somebody who was going to start mining would get the information about that, do, right? How did that happen?

A. Well, usually when they were going to drill an area, they'd go to the BLM and ask for a Land Order, PLO, to withdraw that, this legal process

from the mineral entry. And they'd drill in, drill in this because they didn't wouldn't anybody even staking claims when they're drilling. We'd, if found — if they didn't find anything, they'd let the BLM to restore this to the public domain. If they found something, the AEC kept it.

We still have 45 square miles, of land in Southwestern Colorado, it's still held by DOE, which is a result of the early drilling. They've kept the land all these years and leased it out to companies. And this was — everything place happened, except on the Navajo Reservation. Sallis, one of the well-known Navajos, he would always to stake claims around where our drill rigs were. He never found very much of it.

Q. So talking now a little bit about Navajo Reservation, if AEC found a deposit on Navajo, who would they tell?

A. Well, all our drilling data would go down to the Minerals Office in Window Rock. We never really found a deposit, we might find a hole here, one single drill hole that had a lot of ore in it, and eventually that all would go down to Window Rock. And eventually somebody would lease it and then stake out — get a mining permit and mine

But most of the drilling we did in Lukachukais was already on a lease, Kerr-McGee Climax and Duncan and haul leases. And a lot of drilling we did on, in the Carrizos was on leases that already were already there. And we, we did find a little ore out in the Carrizos. Eventually Climax drilled and gave it up and I think Kerr-McGee took it over and mined it a little bit. But all those drilling projects on reservation were supposed to be reported to Window Rock.

Q. Okay. So —

A. And I don't know if it was or not.

Q. So the way it was supposed to, to tell me if I'm correct, the way it was supposed to from '49 until 195, USGS, or the Atomic Energy Commission on Navajo land —

A. Oh, Navajo, okay.

Q. — Navajo land, not leased land, take the results of the exploration and just ship it to Window Rock and that was it?

A. That's the way my understanding was.

Q. Did they ship it with instructions to open a mine?

A. No, I don't know. I have no idea. That was not my job. It was all up here to Grand Junction.

when — it wasn't, it wasn't until there was a formal report written, and all that, before it went there.

Q. And what office or division or, or whatever term you all used back then, at the AEC Grand Junction would be responsible to transmit information to Window Rock?

A. I really don't know. Maybe the public affairs officer. I don't know.

Q. Okay. You weren't involved in that.

A. No, no. We know they got into, because eventually talking to a few down there, they'd about where, where we found some ore.

Q. And there'd be mines?

A. Yeah. We found a few mines, of the little mines, I know. In the Lukies we found indications that Kerr-McGee followed up on, found the Big Mesa 2 mine, the Big Mesa 5 mine. And Wal Duncan, we found an extension of the Campbell Mine —

Q. Did the AEC do any mining on Navajo, to your knowledge?

A. No. No. We did, on the Navajo we did inherit a lease from the Manhattan Project on Cove Mesa, and we did a lot of drilling up there and leased that mine out to — leased that out to VC and the, got the lease. And there was a lot of mining

on that AEC land on that — that's the only government — that's the only AEC lease we had on Navajo land.

And in 1962 it was given back to the tribe. And Walter George — William George, one of the miners got a mining permit and he started mining after we gave it up, so.

I wrote a report on this for the U.S. Geological Survery, and it was released, I think, last December about the mining history on Cove Mesa.

Q. Do you know the name of the office that actually did the AEC lease?

A. That did the what?

Q. The AEC lease you just talked about, is there a division or a section or —

A. Oh. We drew the land from Michael L. public land orders, and they'd been holding it ever since. And it was under the Mining Division, the old AEC Mining Division down there, and they had their own mine inspectors, and everybody like that, to govern the mining on those lease blocks. And still have, they still have, part of the contract, Stoller down there, that runs, that manages the lease program.

DAVID A. TAYLOR: Robert, you

excuse me for a second, I'm going to interpose objection at this point, a rather belated objection that happened sometime. I'm going to object to question that you asked relating to whether or not AEC did any mining on the Navajo Nation. I'm going to object to the form of the question as ambiguous with respect to the term mining, and I'm going to move to strike response.

Q. Mr. Chenoweth, when I use the term "mining" and you answer my question using the term "mining", what's your understanding of the word "mining"?

A. That would be removing material of value from the earth for a profit.

Q. Would the term "exploration" be a form of mining?

A. No, that's pre-mining. You've got to find something before you can mine it.

Q. Would — when you answered my question earlier about whether the AEC did any mining on Navajo, were you using that understanding of the term mining when you answered —

A. Yeah.

Q. — the question?

A. Yeah, the AEC never mined it, leased it for mining, and private industry mined it.

Q. Okay.

A. And paid the AEC a royalty.

Q. I'm going to ask you some, we've come words in the past, and I want to get your definition of them. So what's your understanding of the meaning of the word "ore"?

A. It is material that has to be sold at a profit, if you can't sell it — if you look in dictionary of mining terms, the word in "profit" has to be involved. It's, it's, it's not ore if you can't sell it and make money off of it. It's, I according to the mining terms, mining dictionaries. That's — it's well, well defined in the mining dictionaries, but it's really — I think that is the key thing.

Q. So that would mean that in mining, the amount of ore depends on the price for —

A. The value, the value of the ore.

Q. The value of the mineral?

A. Yeah.

Q. Okay. Are you familiar with the term "overburden"?

A. Well, that's usually used in pit open mining. That's when they, instead of going in and drifting out, they strip a big, open pit, the

Jackpot Mine. The overburden is all the rock above the ore zone. The amount of rock above the ore zone is commonly called the overburden.

Q. What about the term "waste rock", used that before in this deposition?

A. Waste rock material is, is worthless because it can't be sold. Waste rock can contain uranium in it because it's low grade material. But, waste rock is material that is not of value.

Q. So if the price of uranium suddenly increased, waste rock could be ore, or it could be reprocessed profitably?

A. That's true. That already happened, when, when the price went up in the late '70s, there was a lot of re-mining of old mine dumps because at Uravan because they'd been throwing away a lot of material less than .2, and they were digging out and selling it because it was running about percent U3O8, so.

Q. I take it that's by weight?

A. Huh? Yeah. It wasn't valuable at the old price schedule, then when the price went up in the mills, well, they could go back and mine these old mine dumps, that they had a good deal.

Q. Do you recall the percentage, weight of

U3O8 in the border of what was profitable during the time you were working for the federal government?

A. Well, the AEC price schedule would likely not pay for anything less than .1, .1 percent, ten hundredths, but most, most mines couldn't make money at that. So I think during the uranium boom, the average grade was maybe .23 percent U3O8.

Then when the price went way up, the price — in the later '70s, people were mining hundredths. Down in Texas they were even mining because they could make money on it. So it depends on the price the mills were getting from the mines what, what the miners got.

Q. Gotcha. Did you ever see — you were working for the federal government, did you ever observe a mining operation?

A. Oh, many of them.

Q. In all the regions, or just of them?

A. Oh, I, when I became branch chief in charge of the AEC field offices, I got to go to Spokane, got to go to Texas, to North Dakota, South Dakota, out to Nevada. So I've seen a variety of mines in the Western United States and Texas.

Q. Let's just —

A. Active mines.

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Q. Let's just talk about the Four Corners region for now. When in your 30-year career did you actually see ongoing mines operating?

A. Probably about every year.

Q. Okay.

A. Maybe, maybe not — I was trying to think when I got office-bound. Maybe in the, in the 1980s I didn't get out as much. Oh, yeah, I did, because I got involved in taking foreign visitors around in the 1980s, or so, so I got to go back to Uravan a few times.

Q. Most of the uranium mines you saw, were they surface mines?

A. No, they were mostly underground, except the big Jackpot Mine in New Mexico, and the Mariano 2 Mine in Arizona, and the Gas Hills in Wyoming, all huge, open pit mines.

Q. Can you describe a typical underground mine in Arizona? Describe it.

A. Oh, yeah. Most of them — the well, biggest — well, there's two kinds; there the ones I'm more familiar with are in the Lukachukai, Kerr-McGee mines where they went in from the cliffs of the mountains — the Lukachukai Mountains are, and is big — and the ore bearing rock's down below, they go in on the cliff, go straight in, and, and mine —

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and usually with a lower level called a haulage. Then they had the mining area up here, and they here, dropped the ore down in the haulage drift, little train takes it out to the dump.

And there's — it's not like coal where it's room and pillar. There's an area here called a stope, another one over here, and it's all mined, all blocked out by drilling a hole of.

Now, at Ambrosia Lake they have a shaft, and they go down. Same thing, with a level haulage level, and then a mining level. And then they drop the ore in the bottom and hoist it up the shaft.

Like our boss, like one of us has said in the beginning, he says, well, uranium is like coal, it's more like a chocolate chip cookie, chocolate, the little chocolate, the little chips in the cookie are the ore bodies, and they're just scattered here and there very randomly, so have to be very selective how they mine them.

Q. Then at a typical mine in Arizona, is it possible to have a — is there such a thing as a typical mine in Arizona?

A. A typical what?

Q. Mine. Because my question is going to be:

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How do they separate — do they separate ore from waste rock at the mine?

A. Oh, yeah, because the ore, maybe it's only two feet thick, and they're going to have their drift will be eight — well be six feet. Everything got, they've got waste rock above the ore that has to be removed to get the ore, so that waste rock gets out of the way and dumped over the cliff. That's one of the problems we have today in the Lukachukai, is we get all this waste rock dumping over the cliff.

Q. Okay. Is there, to your, just based on your observations from when you were in the field, for most mines, uranium mines generate waste rock?

A. Oh, every one does. Because usually it's very rare where you get ore more than five feet thick. And so in underground mining you've got to move that over, that waste rock above the ore. In the open pit, same thing, you've got all that, that overburden is going to be stacked out on the dump around the open pit, as well as, as well as waste rock in the ore zone.

Q. Now, at these mines that you saw, who was actually doing the mining?

A. Well, miners were.

Q. Working for whom?

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A. Well, the companies, like VCA — on the reservation, we're talking about VCA, on the reservation, the leases and mining permits, and you had to hire Navajo workers where possible. There were a lot of — all the mines had Navajos, usually a white supervisor. And in the Kerr-McGee mines they had, oh, maybe eight to ten mines mining one year, and they'd have a, I think each mine had a white supervisor, or even a — something like that. And then there would be a manager of mines, latter. There was sort of a hierarchy from the mine supervisor up to the manager of mines. And VCA had some guys like Earl Saltwater and William George Brown Shorty, they'd been trained well enough that they ran their own little mines for VCA.

Q. Who did the white supervisors work for?

A. When V — they reported to the manager of mines. Like in VCA it was a man named Bill Eagle in Durango. And Kerr-McGee it was Jack Lane in Shiprock.

Q. To your observation and recollection, were the white supervisors usually or always working for private companies?

A. Oh, yeah. Yeah.

Q. And who besides VCA mined in Arizona?

A. Mean on the Navajo?

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Q. Yeah.
A. Oh, lots of — in Monument Valley, I said, the big companies were VCA, Industrial Uranium, Gabraltar Minerals and Climax Uranium. And the Lukachukai's it was Kerr-McGee, Climax, Western D And down at Cameron it was Rare Metals, Inc., and Cameron Mining Company. And then the Carnivale VCA and — I'm trying to think who was the next company there. Maybe, maybe Texas Mining Company, something like that.
Q. Okay. And at a typical uranium mine, let's start in Arizona on the Navajo, who would make decision about where to put the waste rock, you know?
A. Probably the mine superintendent.
Q. Now, is that the same as the shift supervisor?
A. Oh, yeah. But on — but there were lot of little Navajo companies, like Paul Shorthy's company after he left VCA, and William Gladdy, Eugene Topahonso did. So when they had the little mining company, ma and pa mining companies, they learned how to mine from VCA, they'd, they'd, yeah.
Q. Did the AEC or the Department of Energy, to your knowledge, ever tell a mining superintendent to

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put waste rock?
A. No. Probably only on our leases here in Colorado. Yeah, they have to on the leases, they have to file a mining find with the feds.
Q. And this is AEC?
A. The AEC lease blocks here in Colorado.
Q. Do you recall when the AEC leases in Colorado were first mined?
A. '49, probably.
Q. Were there any AEC lease blocks in Arizona?
A. Yeah, the Cove Mesa was an AEC lease.
Q. Right. I think you said that was the only AEC lease in Arizona?
A. On the Navajo, and there were AEC leases in — there was an AEC lease in New Mexico, too, at Haystack Butte.
Q. Just the one?
A. Just the one. One in New Mexico and were some in Utah, which were, have all gone back to the BLM now. But, like I say, I think there's 45 square miles of land in Southwestern Colorado still leased, lease by the AEC — by the DOE.
Q. And if we exclude AEC or DOE land, for all other mines, did AEC ever tell a prospector where to put waste rock?

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A. No. No. Oh, state mine inspector, AEC didn't. They — AEC only had mine inspectors to their own leases. But the states or the feds, Bureau of Mines leases — mine inspectors would
Q. Again, from your own knowledge of the things that I was confused about from last week in the way things were purchased. So I'm going to ask you some questions about when the AEC actually purchased ore, it purchased, and stuff like that. So if you could describe for me — well, first of all, how did sort of describe the process. Again, from your observation, by which the AEC would purchase ore.
A. Well, the most direct way they purchased is when they set up ore buying stations. Like when Ambrosia Lake was first found, there was a need for that ore down there, because Anaconda or Kerr-McGee was already swamped with their Jackpot ore, the AEC put in an ore buying station in the little town of Milan. And that meant they would actually go and purchase the ore directly from the miners. The AEC would give the miners a check, and all that. But — and eventually when the ore buying station closed, the AEC sold those stock piles to whoever, whoever would give them the best price, a bid.
But in a mill, say in a mill like Shiprock,

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after the ore buying station closed, the miners paid by the mill by the AEC price schedule. The mill paid the miners, say it was three fifty a pound, which was the AEC certified price, and that — that was built in the milling contracts. The AEC didn't pay them, the milling companies paid them because it was in the contract.
Q. So at the mill, the AEC would deal with the milling contractor for their concentrates?
A. Yeah, yeah. And the price of the concentrate was based on many facts; there was the AEC price schedule, this and that, the companies' expenses, they always guaranteed the mining company a profit.
Q. So if — sorry, I'm not a mining, if ore was hauled to a mill —
A. Uh-huh.
Q. — the mill contractor, or would, pay the miners based on the assay.
A. Assay.
Q. And then AEC would pay for the concentrates at the end of the —
A. That's true.
Q. — concentration process in the mill.
A. That is true.
Q. But if there was an ore buying station, AEC

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would buy at the —
A. Directly.
Q. — ore buying station?
A. That's true.
Q. And then what — let me first stand. An ore buying station, I'll tell you, I'm picturing just a great big pile of rock in the middle of nowhere, halfway between a mine and a mill; is that a fair —
A. Well, no, it may be — usually buying stations were put in where mills eventually built. Like at Shiprock there was ore buying stations the AEC ran for several years before Kerr-McGee took over.
Q. What is an ore —
A. An ore buying station is where they deal in with the ore, they weigh trucks full. They haul ore and weigh it empty to get the wet tons. Then there's a little lab at the ore buying station to get the moisture content of the ore to get the dry, and then they take samples, representative samples of that load, send it up to Grand Junction to the lab to get the values, and then pay the miners contractors. AEC did that, AEC didn't, it was a contractor, Ivanhoe Pitkin or American Smelting and Refining. AEC were contractors. So checks came from the contractor

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from the feds, but that's just a —
Q. It was federal money?
A. Federal money, absolutely.
Q. And then.
A. And then eventually, when the buying station closed, the AEC would go out to the mining company and milling company and say, we'll give you this ore buying station here, we want to give you these piles of ores sorted by different kinds, so how much will you buy it for? And they tried to get some of their money back. This is alluded to in the Albrethsen McGinley Report about how much was, was bought at each ore buying station.
ROBERT N. FOSTER: It's a time to change the tape, I think.
JOHN DENNIS DUNN: This time approximately, the time is approximately 9:11. This is the end of tape number 1 in volume 2 of the testimony of William Chenoweth. We're going off the record to change tapes.
(A recess was taken from 9:11 a.m. until 9:19 a.m.)
JOHN DENNIS DUNN: We're back on the record.
My name is John Dennis Dunn, Special

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Research Services.
This is the beginning of tape 2 in volume 2 of the deposition of William Chenoweth. The time is approximately 9:19.
Thank you.
Q. Mr. Chenoweth, we were talking before the break about ore buying stations, I wanted to ask a few questions about it. Prior to the building of a next to an ore buying station, just what it would look like, generally? If some person were driving by, what would that person see?
A. Oh, there'd be a scale house, and a Butler building, probably, where the lab was, preliminary lab. There'd be piles of ore, of course. They always kept the ore separated by type of ore, like the ore buying station down at Globe, Arizona, they got ore from Nevada, California, Southern Arizona, Southern New Mexico, and so the guys in charge tried to keep the ores separately because they knew they wanted to sell the ore, the milling companies didn't want it all mixed up, they'd want — anyway, they'd get a better price by keeping that ore separated.
So there would be piles of ore, of course, there, and there would be a scale house, and a conveyor belt that went up and then stockpiled a

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different stockpile. And a dump truck would pick after the ore was crushed, and everything, it would go up through the crusher and then dump into a stockpile. The dump truck would take it over and dump it in a pile where they — so, basically, it was a scale, a crusher, a conveyor belt thing to dump it in a truck, or a pile of ore around a Butler building.
Q. Okay. And when the AEC purchased ore at an ore buying station —
A. Yeah.
Q. — what would the AEC do with it? How would they — what was the transaction by which they would get it to a mill and —
A. That would be, after the ore buying station closed, they'd go out and, and advertise how much ore. And they wanted the companies to tell what they'll pay per ton for it, or something so. And they tried to get some of their money back by that.
Q. And —
A. The AEC would actually ask the mills to bid on the different stockpiles. Like I know that down at Globe, Kerr-McGee bid on a few of the piles, Homestake bid on some of the other piles, Vanadium City got one of the piles. So it was — they would, the mill would bid on a pile that they thought was

amenable to their mill circuit.

Q. So then if the AEC owned, and that if the AEC owned ore at an ore buying station, would sell it to the mills?

A. Yes.

Q. And then what — the mill would concentrate it?

A. Oh, yeah, the mill would put it through their circuit.

Q. And then what did the mill do with concentrates?

A. Well, they would put in drums, 55 drums and ship it here to Grand Junction because the, because the AEC had had certain. It couldn't have too much vanadium, too much, too much selenium, and other things like that so they had an elaborate sampling plant down at the compound, at the site here in Grand Junction all of this concentrate. And if it didn't meet their standards, they'd have the company come and get it. If it met the standards, AEC would pay the mill a pound for the uranium in the concentrate.

Q. So is it correct then that the AEC would purchase the concentrate from the mill after it sold the ore to the mill?

A. Yeah.

Q. Okay.

A. The mill was buying that ore from stockpiles, just like they were buying it from independent miner or a mining company.

Q. Gotcha. Okay. To your knowledge, the AEC ever purchase ore at a mine?

A. No, not to my knowledge. It had to be delivered to an ore buying station, though. That's what you mean?

Q. Yeah.

A. Yeah. Only through an ore buying station was ore, the AEC purchased ore.

Q. And during the period of time you were observing, do you recall how many ore buying stations there were around the Four Corners area?

A. Well, there were ore buying stations in Wyoming, ore buying stations in Texas and South Dakota. This is all documented in the Albrethsen Grandey Report.

Q. Okay. Are you familiar with the term "reclamation" in mining?

A. Yeah, I know, yeah. Sort of.

Q. Okay. And what's your understanding of that term?

A. Well, my understanding, it's not very well, but it means that the site has been reclaimed, sort of to kind of remove, maybe, the evidence of mining, or something. It's a thing I would say it means there's been some action taken at mine site to, to restore to its original nature, something like that.

Q. Okay.

A. I really don't — I'm not good at that.

Q. Okay. When we're going to use, I want to understand what it means to you, so we can communicate better.

A. Yeah, some reclamation, like in the, those Navajo mining permits, they really mention reclamation, but the mining company put a barbed wire fence around an open pit, and that's their reclamation because that was all that was done at the time. So it would go from filling in the hand grading it and putting grass seed on top, to putting a barbed wire fence around an open pit. So there's kinds of variations and what reclamation is, so to meant over the years.

Q. In the 30 years you were out, then, focusing on the Four Corners region, what kind of reclamation, if any, did you observe?

A. During my — say up to 1983?

Q. Yes.

A. Very little. They had barbed fences around open pits, and maybe a barbed wire fence a portal of an underground mine. This is Navajos.

Q. Did the — in the period of time, 30-year period of time that you were working for the federal government, did the Atomic Energy Commission or its successors, were they involved in any way in reclamation?

A. Only on the lease blocks.

Q. The ones we talked about —

A. Yeah.

Q. — before like Cove Mesa?

A. But not only — the Cove Mesa, they gave it back to the Navajos and, like I said, mining resumed, probably, a month after the lease was — the lease was terminated, they kept mining, so the AEC never did any reclamation on, on that particular lease, because mining continued on.

Q. Other than —

A. By private industry.

Q. Other than AEC leased land, the AEC, to your knowledge, ever tell anybody whether to do or reclaim a mine?

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A. No, not to my knowledge.
Q. Did they ever encourage it or encourage it, to your knowledge?
A. No, not to my knowledge.
Q. Did they have any involvement in reclamation at all, to your knowledge, during that period of time that —
A. No.
Q. — you were out there?
A. Huh-uh. Not even the uranium mil
Q. Okay. I'm going to spend a bit of time asking you about mine inspections by the federal government while you were there. Were there mine inspections done by the AEC and it's — for the Four Corners area?
A. Was there reclamation?
Q. No, no, now about inspections, mine inspections.
A. Only on, only on their own leases.
Q. The AEC did not inspect except AEC on-
A. AEC lease blocks, yeah.
Q. — AEC lease blocks?
A. Because the state had their mine inspectors, the feds had their mine inspectors, the tribe had their mine inspectors. And that was

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contention at Window Rock, is they didn't think, then they didn't think the state needed to inspect because they had their own.
Q. So you, you're personally, nothing on AEC leased land, you personally never inspected a uranium mine?
A. Oh, I was in mines, but I didn't tell anybody what to do.
Q. No, no, I mean officially as part of your work.
A. Oh, yeah, I was officially asked you to ask Kerr-McGee, we want to make a, we want to this area in your mine because the ore is very valuable. And then Kerr-McGee would say yes. So we'd dropped a lot of Kerr-McGee mines in the Lukiesple. Some VCA mines in the Carrizos. Mapped some Chevron Company's mines in, in the Cameron area again, that's not really inspection, that's a geology.
Q. Right.
A. And we never told the mines to do it.
Q. Did you ever inspect a mine?
A. No. I've examined a lot of geology but never —
Q. Right, no, I meant a regular inspection, I don't mean —

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A. No, no, no AEC didn't do any of the mines except on their own lease blocks.
Q. Okay. During the period of time you were working for the federal government, do you whether or not the people that were doing the, I mean, I suppose, the white supervisors, do you where the miners got their equipment from, I'm assuming there had to be some equipment to do -
A. Oh, yeah, right, Kerr-McGee would bring their mining equipment like — but some of the small miners, like Paul Shorty, he would rent it from VCA, or borrow it from VCA, or something. But the big companies bought their own equipment.
Q. Except for land that was leased to AEC, such as —
A. Oh, no, the companies that leased had their own equipment.
Q. Okay.
A. Like on Cove Mesa, VCA had their equipment up there.
Q. Did the AEC ever own mining equipment the Four Corners area, to your knowledge?
A. No. No, because even, even drilling contractors had their own, own equipment. I don't think we owned any mining equipment, huh-uh.

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Q. Did the AEC —
A. Well, now we owned, we owned drills, because Walker-Lybarger, our prime contractor, build, would build drill holes, runs for Kerr-McGee Lukachukai. And in the, and in the Carrizos we improve some of the horse trails to drill holes that was only for drilling projects that we had equipment.
Q. Did the AEC directly lease any mining equipment, that you know of?
A. No, huh-uh. Not to my knowledge.
Q. At a typical mine in the Four Corners region, who would make the decision about to hire, you know, labor things, who to hire, how long to use, what hours, whether to work weekends, kinds of things?
A. That would be the companies. AEC never, never controlled any of the industry, like the mining.
Q. Do you know, did the AEC, was AEC involved, do you know, in things like safety in the mines, or anything like that?
A. No, that would mine inspectors.
Q. And that would be, did you say, tribe?
A. The tribe had their own mine inspectors,

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and then the feds had their.

Q. Which mine inspectors did the feds mean, what agency?

A. It would be the US Bureau of Mines MSHA — well, that wasn't — I forget what it called back then. NIOSH, or something.

Q. And —

A. And it was the Bureau of Mines out Denver that had the federal mine — that I know the mine inspectors on the reservation.

Q. Did you ever see a Bureau of Mines inspector on the reservation?

A. Oh, yeah. In the Lukachukai area there once.

Q. Do you recall seeing a Bureau of Mines inspector more than once?

A. No, not really. I'd seen the tribal inspectors more than that, because — in fact, one of our AEC camps, we let the tribal inspector stay at our camp so he didn't have to go back to Shiprock, since he was working out in the —

Q. And the Bureau of Mines inspector you saw, did you see what he or she was doing?

A. He. No, it would have been, in the probably '56, something like that.

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Q. You just saw him —

A. Once. Leaving, I think they were leaving. Leaving as we got to the mine, or something. I never really saw them working. In the mine.

Q. Did, while you were working for the federal government, did AEC have any policies, that they had, that described how to mine?

A. No.

Q. Any policies or guidance, or manuals about where to dispose of waste rock?

A. No. Maybe — mainly only on our lease blocks.

Q. Only on your lease blocks?

A. Only on the lease blocks, because —

Q. Except on the lease blocks, did AEC have any manuals or procedures or policies how to separate waste rock from ore?

A. No.

Q. Or where to place overburden?

A. No, huh-uh.

Q. Once a mine had — once you were, meaning the federal government, AEC was exploring, what role did the AEC have, other than paying and doing assays, in the Four Corners area?

A. Oh, well, after the AEC produced, AEC

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made a big announcement November 24, 1958 that they only buy uranium concentrate, beginning in 1962 uranium ore that was discovered prior to 1958, November 24, 1958. And that was a big program for us, kind of busy because we all thought we were going to be laid off, because we had to go out and meet with every operator and determine the ore reserves that, what would qualify in the November 24 announcement. And the little area I was responsible for in Arizona, I had four years to do that.

So we had industry liaison, I handled reserve work. And after, really after — there was a gap in there we did, seemed like we were working production capability studies that — after we were drilling, we were following the industry, how they were continuing to do things, and all that. The big, the big thing we got all involved with was the November 24 survey.

Q. Okay, I am — did the AEC, the time on AEC leased lands, did the AEC review mining plans?

A. No.

Q. Approve mining plans?

A. No, huh-uh.

Q. Did the AEC manage mining company personnel?

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A. No.

Q. Or supervise personnel?

A. No.

Q. Not in any way?

A. No, huh-uh.

Q. Did the AEC supply any equipment at any of the uranium mining sites?

A. No. We didn't have any. I think we, after we got through with the drilling — I think we sold off all of the bulldozers, graders and all dump trucks.

Q. But these bulldozers and scrapers and dump trucks, were they used for mining?

A. No, they were used for drill hole projects and the ore buying stations. All that equipment sold at probably auction afterwards. We never leased it to anybody. That I remember.

Q. Now, the last time you testified —

A. Oh, oh.

Q. No, it's okay. — the AEC assist road building —

A. Yeah.

Q. — do you recall that?

A. Mainly for drill hole road.

Q. Oh. Not for ore hauling?

A. Well, we had an access road program where we would work with the Bureau of Public Roads, the BIA, and improve existing roads to mines to help get the trucks into the mills. Like I know on the reservation we improved the road from, from Shiprock Mexican Water, over Comb Ridge down to the VCA Number 2, and then north into the Mexican Hat Bridge.

And then also we improved the road from Red Rock up to Oak Springs. These were existing roads, and I think we paid the BIA to improve them, or something. Anyway, we had this access road program. And it was all over, all over the Four Corners, as well as South Dakota and Wyoming, I believe. In New Mexico we improved the road from Blue Water up Haystack Butte, and from Laguna up to Jackpot. We improved — and this was really to improve roads to get the, mainly for hauling ore from the mine to the mills. But most of the, most of the building, road building was building drill hole sites.

Q. And the road building, is that a thing that AEC did, or did you — or did the AEC do it?

A. They, they, they kind of worked with another agency. I know there's a big report that's somewhere, and I've never been able to find it. Nobody's ever been able to find it. But only, I think the

Arizona report I've ever found, and they talk about they improved roads down in Gila County, and they worked with the Forest Service there. And they did with the BIA on the reservation. And in Colorado I've heard they worked with the Bureau of Public Roads, gave them some money to build a new bridge down by Gunnison, and things like that. It's, it's sort of a — access road program is sort of summarized in the Report.

Q. Right.

A. That's the most, the best summary how many miles and how many dollars they spent.

Q. On the access road program, do you know how it came to be that a particular road would be improved? In other words, somebody goes to the AEC and says, we want this road improved, or did the AEC survey and, say, hey, this road needs improvement, or what?

A. I really don't know.

Q. It just happened, as far as you know.

A. Yeah. Somebody made a decision, we're going to improve the road from Shiprock to Monument 2 Mine. And maybe it's VCA, I don't know.

Q. But it wasn't you?

A. Oh, no. I don't know who did it.

Q. Okay.

A. Or, or who improved the road from Blue

Water up to Haystack Butte, I don't — it might have been Anaconda, I don't know.

Q. Just give me a second here, please. Okay. Have you ever heard of a mine called the San Mateo Mine?

A. Yes.

Q. Have you ever visited it?

A. No.

Q. How did you hear about it?

A. Well, I lived in Grants for a few years, even though I was working in Arizona, and it was a mine, really, in the eastern edge of the Ambrosia Lake district. And it was a Rare Metals mine going up later, going up to the Lee Ranch, where there's big deep drilling up by San Mateo, I know I went a few times.

And when I was doing some work for the New Mexico Bureau of Mines, we were plotting, we were plotting shack locations, and all this, big place map of Ambrosia Lake. And that's where I saw where it, legally where it was. And there's a little summary that the AEC had written about that difficulty they had sinking the shaft.

Q. When you were working for the federal government, did any of your duties involve San Mateo Mine?

A. No.

Q. How come?

A. Because I was — when they closed Flagstaff office and move me to Grants, I was assigned to monitor the industry over in Arizona. I got very little involvement with the mines around Grants, the Ambrosia Lake, except gotten out there and visited a few of them to see what they looked like.

Q. While you were working, at any time you ever drafted a report involving the San Mateo Mine?

A. No. Yeah, I think — I take that back. When I was with the — after I left DOE, I worked for the New Mexico Bureau of Mines as, what, what was it called, a research assistant. And we were putting together this big map of Ambrosia Lake, of the mines from Gallup over to Laguna. And one of the things we were putting together was a table showing the production of all the mines in the Grants, and I helped compile that using AEC data. And I may have compiled some data on San Mateo in that report. I don't remember it.

Q. Do you know who owns the land the San Mateo —

A. No.

Q. — sits on?

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A. Maybe the Forest Service because it's on the edge of Mount Taylor there. Really I don't know.

Q. Okay. In the course of your work for the federal government, did you ever interact with the Forest Service or Department of Agriculture? I mean professionally, I don't mean did you ever visit National Forest.

A. No, huh-uh.

Q. Just from your own knowledge, do you know who bought the uranium ore from the San Mateo?

A. No.

Q. Or which mill it was processed at?

A. I don't know if it went to Homestake Kerr-McGee. Or even if the Phillips Mine, the Phillips mill was operating then. I don't know.

Q. Do you know if the federal government, like the Atomic Energy Commission, ever purchased ore from the San Mateo Mine?

A. You mean at an ore buying station?

Q. Yeah.

A. I doubt it, because it was great when that station there at Milan closed, it was — the Homestake Mill and the Kerr-McGee Mill got, they closed, the ore buying station closed, and I c

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remember the year, but I think it was prior to the San Mateo going. Because they had, if I remember a report on the San Mateo Mine, they had difficul sinking that shaft.

Q. Do you know when the San Mateo Mine into production?

A. No.

Q. Do you know if it went into production while you were working for the federal government?

A. Oh, yeah, it did produce during time. It produced during the AEC program, I'm sure, because it's —

Q. Do you know if the AEC ever bought for that mine?

A. I, I — you mean the Circular 6? b

Q. Yeah.

A. I — it was a brand new discovery. I don't — but if I remember right, Circular 6 was in 1962. And I don't know, I don't know when it into production.

Q. Okay. If I asked you this, I'm sorry. Do you know if AEC ever built any roads to or from the San Mateo Mine?

A. No. From what I read briefly the access road program in New Mexico, it was from

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Blue Water up to Haystack Butte, and the road f Laguna up to Jackpot Mine. They didn't do anything toward San Mateo. According to what I read.

Q. Were you ever involved in any waste from the San Mateo Mine?

A. No.

Q. Do you know anybody who was?

A. No. I'm sure, I'm sure, because it was a new discovery, they might have sent samples up to the AEC pilot plant, the research and development facility to learn more about the ore. But that was beyond my scope of work.

Q. And when you say sent it here, you sent to Grand Junction?

A. Yeah. The, the AEC ran a pilot p operation, this was a research and development, to — when a new discovery was made, they'd help the company determine what type milling circuit they should have, and all that, and what kind of money. And it was, it was — so every new discovery. When the Dysart Mine was found, they sent for type there to have it — that was the original discovery Ambrosia Lake to have it worked on. And some of the deeper mines in Eastern Ambrosia Lake found, they sent the ore up here to have it worked because

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that as part of the AEC's job, to help the growth of the industry.

Q. You used the term "milling circuit" earlier and just now. What do you mean by the phrase "milling circuit"?

A. Well, it was basically — each mill a little different than the other mill, based on the type of ore they're processing. And so you have alkaline circuit where they use alkaline leached, leache carbonate material, leaching. And they have a circuits where they use sulfuric acid and the ore to get the uranium out, depending on the type. So basically you have acid leaching and carbon leaching. And the Homestake Mill was carbonate the Kerr-McGee Mill was acid. So, you know, depen the type of ore, where the ore would go.

Q. Do you know whether or not the AEC did any exploration drilling at or around the San Mine?

A. No, the, the only, the only drilling that AEC did in the Grants area was around Haystack And Poison Canyon. They drilled around Poison in about 1953, or something like that.

Q. Do you know — can you describe, generally, what involvement, if any, the AEC had around the

San Mateo Mine?
A. No. Don't know. I really don't k
Q. Okay.
A. I don't know if they applied for t Circular 6 bonus or not. Because if they did, AEC would have to go out and validate the ownership the — when the first ore was shipped, and stuff like that. But I don't know if it was ever, qualified for the bonus.
Q. Was the San Mateo Mine in the area responsibility for the Grand Junction office -
A. Oh, sure.
Q. — of the AEC?
A. Yeah. Yeah, it was in part of the Eastern Ambrosia Lake District.
Q. Do you know whether or not AEC personnel visited the San Mateo Mine?
A. Oh, I'm sure they did, just to see how they were mining, what the ore looked like, and that would be people in the Grants office, but myself.
Q. Do you know what years the Grants office existed?
A. Well, they established a Grants office down there right after the first ore was found.

it was a brand new area and brand — and it was in Grants, then they moved to Milan. And then closed that office and moved the people to Milan. And I'm trying to think. I'd say — the AEC field office in Grants from 1952 through 1971, something like that.
Q. And then they closed it?
A. They closed it and moved it into Albuquerque.
Q. Do you know if there's an office today?
A. No. The AEC kept shrinking, kept shrinking and the Albuquerque office was closed about 1980, I think.
Q. And then where did that —
A. Everything — up here.
Q. To Grand Junction?
A. Yeah, Grand Junction. Cascade, off Spokane office, the Austin, Texas office, all shrunk down into here, eventually.
Q. When was the last time you actually visited a uranium mine?
A. When I went — huh?
Q. When was the last time you visited a uranium mine?

A. Can't remember. Maybe —
Q. Stumped him.
A. A few years ago we were having a field trip, and we took a lot of people into the mine pit down in Paradox Valley on the AEC lease and showed them, show them a big open pit uranium mine. There was a JD5 shaft there. We showed them the ashtray, skip was and the ore bins and all that. So I was, I was in a uranium open pit mine. Oh, I think 2012, that's when it was.
Q. Do you know whether or not the Forest Service ever mined at San Mateo?
A. The Forest Service had anything? No, I don't know of anything. I really don't know about San Mateo. The only thing I know about San Mateo is a mining engineer at Grants named Mr. I. Gay, Gay — that was his name, Ingles M. Gay. Way back. He wrote a, he wrote a one-page on San Mateo Mine, and that's the only thing I really know.
Q. I take it you've never written —
A. No.
Q. Am I correct —
A. No.
Q. — you've written —
A. Never. Don't know anything about it.

know where it is on a map.
Q. I've got a bunch of documents, like everybody else here, so I guess now is as good as any to torture you. Just for the record, I have binders of documents that we're going to be looking and going through quickly, just to get the witness to identify them, if he can, and to authenticate where he can do that. My understanding is most, if all, of these documents come from Mr. Chenoweth, so this should be fairly painless and quick.
A. Okay.
Q. Relatively speaking. My understanding is that counsel for El Paso organized a set of these binders. I have four sets with me so I'll be looking at one site, I'll give one set to the witness, I have two other sets to distribute, so whoever wants to do that would be Mr. Taylor. And does counsel for Tronox want one?
CARLOS D. RONSTADT: I'll take it if nobody else wants it.
ROBERT H. FOSTER: Counsel for Union Pacific — I mean BNSF. Boy, that was a bad o
CARLOS D. RONSTADT: The thing I was going to say is the Navajo Nation is going to, right?

ROBERT H. FOSTER: Yes.

CARLOS D. RONSTADT: Somebodyah, if I need to, off of either El Paso or Navajo. N

ROBERT H. FOSTER: Well, yes, I that may be —

CARLOS D. RONSTADT: In the real question in my mind is who has the records. All I care about is the Cameron area. Some that there's documents in there that pertain to Cameron somehow I'll figure that out. And I'm sure you go through all your documents you will tell something involves Cameron, like right now.

ROBERT H. FOSTER: We off the record here for a second while I fool around w binders.

JOHN DENNIS DUNN: This time approximately 9:53 and we're off the record.

(A recess was taken from a.m. until 10:17 a.m.)

(Exhibits 130 through 1 for identification.)

JOHN DENNIS DUNN: This time approximately 10:17 and we're on the record.

Q. Thank you. Mr. Chenoweth, as I stated before our break, I have provided you with binders

of material, and I'm just going to say that my understanding is that this material was actually provided by you to the United States, but I'm going to ask you about individual documents. You will find in the binders each document begins with a tab. T tabs — at the very beginning, actually, there's index in the first binder that runs through 1 start at number 130, and the tab number, and the number should match the exhibit number. There sticker in the lower, right-hand corner of the page. I'll also note that most of these are copies, and I'm just going to ask you about the let's begin with Exhibit 130. Exhibit 130, for record, bears Bates Numbers BC 506 through 5 BC. Have you seen Exhibit 130 before?

A. Yes.

Q. Can you tell us what it is, please?

A. This is a list of the prime contractors at the Grand Junction site from the very beginning the day this was written. This is — okay, it's through present.

Q. You know, it says Appendix A at top, do you —

A. Yeah.

Q. — what it's Appendix A to?

A. This was — Jeff Tact, the manager for the contractor at the Grand Junction site, asked to prepare a list of contractors from the site, and he knew I worked for Walker-Lybarger, and so he — anyway, this is a joint effort that I prepared for a request from somebody. And it's appendix to another document, that I don't have about the Grand Junction site down here. So the thing that — this doesn't even have a date on it. Stoller was, Stoller was still the contractor, so.

Q. To your, to your knowledge, is this a complete list of the prime contractors for the Department of Energy in Grand Junction?

A. Yeah, starting way back when Vanadium Corporation of America was running the site here for the Manhattan Project. But it says, to the M. Stoller Corporation, July 22, 2002 to the present. So I don't know when the present was. But this was several years ago.

Q. To your knowledge, is it complete at least, as of 2002, which is when Stoller began to do this, began?

A. Yeah, uh-huh.

Q. Let's turn to Exhibit 131, please.

A. Okay.

Q. Exhibit 131, I think, is BC 1044 to BC 1073. Do you recognize this? I'll note there's some hand writing stuff at the back as well.

A. Yeah, this is —

Q. What is this?

A. Well, the New Mexico Geological Society, so was, and the Arizona Geological Association going to have a field trip down old Highway 66 from Flagstaff to Grants, and my friends in New Mexico said, I had written a paper — they knew about uranium in the area of Holbrook, and they said, we'll go right by it, and just for the history, can you prepare something for the guidebook on the little bit of uranium mining that was down there at Holbrook, which is within the Petrified Forest National Park. I've got some old notes, field notes, and all that, I'll do that.

And this is, this is a draft, I think. This is — I don't know what all the stuff on the back is. Oh, ho, ho, ho, ho, ho. This is — this was my galley proof of the article that got published. Just all this stuff on the back was some — has nothing to do with this report. I think I ran out of paper in my printer when I was printing out this draft and some old sheets, an old newsletter. This old is a

1 newsletter about what was going on by a company
2 Wyoming, in Casper. Yeah. Because — yeah, here's
3 here's a reference — yeah. And then it says R
4 Mountain Scout, November/December, 2012 activity. Yeah,
5 that was just some scratch paper I printed it out
6 because I didn't have any good paper, to read this
7 galley proof.
8 Q. Okay. And I take it, for example, page
9 BC 1065.
10 A. 1065?
11 Q. Yeah.
12 A. I got 17 — hold on.
13 Q. Do you see that?
14 A. Oh, my God.
15 Q. I take it the dog is not part of the
16 report?
17 A. No, that's — oh, that's when my wife showed
18 me, sent me a picture of their new dog.
19 Q. I just wanted to confirm that.
20 A. Yeah. And this, and this — yeah,
21 because here's the cover sheet of the Rocky Mo
22 Scout, that was a company up in Wyoming that put
23 out a monthly newsletter on what was happening in the
24 uranium business. And, anyway, I had another
25 some paper to print this out for galleying, and I

1 used all that junk.
2 Q. Okay. So much for Sophie the dog.
3 A. Yeah. Right.
4 Q. Then which part of this is actually the
5 draft that you were referring to? Which part of the
6 exhibit is the —
7 A. From the, from the very first right page
8 64. And then this — and these were some, I don't
9 know these, these were some references I didn't,
10 didn't — wanted to check, or something.
11 Q. That's page 66?
12 A. This is the galley proof of the article,
13 which is, goes from — you see there's all of the
14 corrections, and all that, I made. From 44 with
15 66 — no, through 60 — excuse me. Through the
16 galley proof of what was published last year.
17 Q. Do I understand correctly that what's
18 on the front sides of these pages? And, and, and I
19 just want to have clear record. I think, for example,
20 if you look in the upper, right-hand corner page of
21 1046.
22 A. 46?
23 Q. Yeah. You will see it says, where 2?
24 A. Yeah.
25 Q. So could we follow the galley, you just

1 looking to where it says Chenoweth in —
2 A. Yeah.
3 Q. — the upper right-hand corner?
4 A. Right, yeah. Yeah. And you'll, you'll
5 see, it should be on the last table on page. Yeah,
6 on page 64, that's the last page, Chenoweth 11.
7 Q. Do you know what these notes, starting
8 on page 1060, let's say 66 or 67?
9 A. 66, that's some note about, refer that
10 somehow got stuck in with the galley proof. That's
11 another reference. These were old cards I had
12 references. Yeah, these are, these are I had, when
13 I had, when I had my, finally had my paper done
14 professionally by a word processor, this stuff was
15 to copy from. These, some of these references I didn't
16 use because I, I, I wanted to keep it concise, some
17 of these are — anyway.
18 Q. Is this document, which is Exhibit 131, is
19 that something that you supplied from your file in the
20 United States?
21 A. This, this one was a — yeah, was the
22 galley proof I had. Now I've got a hard copy that
23 was published, but this is the galley proof that I
24 worked on to, prior to publication.
25 Q. No, I mean this particular document, could

1 you give it to the United States like in the year
2 as part of your deposition, or part of something
3 A. There is something I had in my, when
4 Chris was looking through my files.
5 Q. Okay. And —
6 A. It really doesn't apply, except to the
7 little area of Cameron, which is, was just a trivial
8 thing they wanted me to do, because I had, that
9 area.
10 Q. Do you recall whether the galley was
11 11 pages plus an abstract?
12 A. Yeah, this was, this was part of, of this
13 abstract here is still part of that whole. Right, this
14 is, this is page 1, really. It goes from galley
15 proofing to introduction, and all that, but.
16 Q. So Exhibit 131 is complete, it's just got
17 some extra stuff in the —
18 A. Yeah, it's got some extra stuff. I
19 back, it was probably in file folder with the print.
20 Q. Okay. Let's look at 132. Do you recognize
21 132?
22 A. Oh, yeah, this is —
23 Q. For the record, that's Exhibit 1074BC
24 through 1104.
25 A. Yeah.

Q. What is this?
A. This is, this has to do with I when compiling information for the Justice Department Radiation Exposure Compensation Program, because the AEC records only showed the controller. The controller is a person that got paid for, maybe not the company that mined. And when they started claims in from mining contractors, they had records. So they said, go through all your records and the state records and make us a list of mining contractors. So this is, this whole document is compiled, piled by many sources on mining contractors for the Department's RECA program.
Q. And is this something that came out of files recently?
A. Oh, I had it in my files — this was done in, the beginning of RECA program was, I mean in 1992, or something like that.
Q. But did you supply a copy to anybody recently who was —
A. No, no, it was in my files.
Q. Right. So somebody went through and pulled —
A. Right.
Q. — it out recently? Would that be Mr. Neumann and somebody —
A. It was Mr. Neumann and — they went look at all my stuff in my book case, and it was miscellaneous.
Q. All right.
A. But it is a good record of who was doing the mining in different mines around Grants the time, because New Mexico's — and there's a date in here, I see a document from Union Carbide their mining contractors that I got from Carbide. A lot of this was field notes I got from, my oh goodness, what's all this?
Q. I was going to ask you that question.
A. I don't understand what all this is, but it was in the file so they were probably looking contractors.
Q. But this is from your files?
A. Yeah. I don't know what these are.
Q. By these numbers, what page are we looking at?
A. Oh, the numbers that start — Okay, they had a list, somebody had a list of mining contractors and they wanted to know the years, and so to go through and add the years, and all this stuff. I don't know —

Q. Is that, for example, page 1084, is what you're talking about?
A. 84, yeah. I don't know why, I refer to anything, except line number so and so, the years — It must, it must have been something DOJ sent me with a name of a company and the mine, they wanted to know how the — the years or something in this a —
Q. This relates to the RECA program?
A. Yeah, this is all RECA program, all this is RECA program stuff. A lot of this, of this the Justice typed up and put in their file.
ROBERT H. FOSTER: Okay, just I want to note for the record that the RECA information might be sensitive and might be subject to some of a confidentiality. And so for now I would ask until that's resolved, that this not be distributed widely than in this room. And I'll look into it.
CHRISTOPHER J. NEUMANN: Okay.
THE WITNESS: Yeah, this, yeah, Union Carbine Nuclear gave me, for the RECA program, a list of their contractors, and I made notes of what county they operated in, and all that. That's, that's what's on this last set of pages.
CHRISTOPHER J. NEUMANN: I believe,

this is Chris Neumann, I believe did have, interviewed by someone at the DOJ, and I'll try find that.
ROBERT N. FOSTER: Okay, thank you very much.
Q. If you would turn to Exhibit 133, please. For the record, that's numbers 1105 through 1107. Can you tell me what Exhibit 133 is?
A. Well, the Department of Labor, we the — they started a program to compile information on uranium mines, and they borrowed a lot of stuff, of, and these are AEC maps on page 05, these are AEC, and that's — I put a number on them when they, I put them, or they — anyway, this, this is a Department of Labor index number, and I don't know what, I don't understand all this next page, either. I've forgotten — here's a list of all the mines. Oh, I put — these abbreviations, I think, are locations for the, for the Labor Department, boy. Yeah, this is all stuff that I did for the Labor Department when they were borrowing maps of the Department of Labor, '09 something, anyway, mark — The WC number is my number, and then they had a number for their file, for same reason that this is all very confusing here.
Q. So, for example, on page 1106.

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A. 11 —
Q. That's the second page of this exhi
A. 1106.
Q. So just by way of example, what is
number at the top, 3164 mean?
A. I have no idea. I see A group, IR, that's inter river. A 1 and 2, White Cat. This is, this is something I for location for the La Department of where, where these mines were. T wanted the localities, I guess. And they gave list of mines and wanted to know where they wanted. And you see there are some question marks because I didn't know.
Q. Do you know if any of this data ever finalized in any form anywhere?
A. Yeah, probably the Labor Department files.
Q. Okay.
A. I don't think they used any of. But they wanted to know — I think they got these names out of the shoe box report, or someplace, and they wanted to know the locations of them.
Q. Do you know where these maps today, that are referred to on page 1105?
A. 05, yeah, I — they gave them to me, have them. These are what the AEC called economic

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maps in the '50s, the guys, we plotted — they out in Utah, they plotted all mine locations on photographic basis, and then compiled these in area economic maps.
Q. Okay, I have to stop you there for a second while we change the tape. I'm sorry.
JOHN DENNIS DUNN: This is the end of tape 2 in the deposition of William Chenoweth. We're off the record to changes tapes.
(A recess was taken from 10:37 a.m. Until 10:40 a.m.)
JOHN DENNIS DUNN: We're on the record. This is the beginning of tape 3 in the deposition of William Chenoweth. The time is approximately 10:40. We're on the record.
Q. Anyhow, before the tape change, question was, these Department of Labor maps that referred to that are on page, listed on page 1105 of Exhibit 134, do you have them in your house somewhere?
A. Yeah, I — these were folded up in file in my desk. If it's got a WC number after it, have it. If it doesn't have a WC number, I don't know what it is because —

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Q. Does the WC refer your initials?
A. Initials, yeah, because I — all of these maps, I owned them, I put a WC with a, with a s And I don't know what that A means afterwards.
Q. Okay. And if you wanted to look at right now at your house, could you find them?
A. Probably. They're all folded. They're a great big map like that, and they're all folded and kind of yellow. I think I loaned some to the other day, though.
Q. To who?
A. To the people down at the, Stephanie down at the DOE working on the Bynum Uranium M project, so. These maps show the location according to the section, township and range of uranium in Utah.
Q. Let's turn to Exhibit 134, please
A. Okay. Now, I know what this is.
Q. For the record, that's Form 761 through BC 1227. And could you tell us briefly what is, please?
A. Uh-huh.
Q. What is this?
A. This some more stuff I did for the Labor Department, or the Justice — the RECA program

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know, they compensate ore truck drivers that ha certain diseases, and they had a list of ore tr drivers, ore truck drivers and companies, all this. And then the Labor Department comes along and what mill did they haul to? DOJ doesn't care, but the Labor Department did.
So they had me, with the best-of put down — we, we had a list of mills, like I think is Uravan, UT, UT-1 is Moab. Anyway, I went through all this list of, of ore haulers that had and put on a, where they went to the for the Labor Department. It was a big, wild ass, guess, what it was.
But that's — so I went through these companies and put down what mill. And that's this AZ-5, I think, is probably Tuba City. And MN probably New Mexico. I, I — anyway, that's what for the Labor Department. They wanted to know what mill these guys hauled to, so that's what this is, so.
But someplace, I'm surprised it's not here, it will give what mill, like WA-1 is Ross, that's the mill at, in the state of Washington. And — where are we. And see, even some ore shipped on the railroads, and they wanted to know railroads

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they went to. So I see here, Burlington Northern Railroad, I got some mills here. I can recognize I don't recognize —

Q. I just needed to know generally.

A. Anyway, that's, that's — this list of ore transporters DOJ had, and they wanted me to put down to the best of my knowledge what mill they hauled. And a lot of it is just, like say, a big guess.

Q. Let's look at page 1189, please.

A. 89, all right.

Q. And for the next new pages that follow.

A. 89, okay.

Q. What's that?

A. This is some, something Labor Dept. did, and I can't recall what it's all about.

Q. Okay.

A. It doesn't make sense to me. 89, I got ore at the top Paquate, ore, Polar Mesa, Nisha, John Brown Canyon, Yellow Jacket. These are mining localities, but I have no idea. This is stuff I got from the Labor Department.

Q. Okay. If you could turn to page 1195.

A. Okay, 1195. Oh, here we go. Okay.

Q. And I'll just say I think that's first of a 13-page document.

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A. Okay.

Q. What's that? I guess my question: that relate in any way to the RECA work for the Department of Labor?

A. Yes, it does. They wanted general references, the general references, but they wanted references by state. This is something I did for Labor Department, or I had — and this Diane Dashe was a professional secretary that typed things up from, from my notes for the Labor Department.

Q. Is Exhibit 134 something that came from your files?

A. 134?

Q. That's the one we've been looking at.

A. Yeah, it — no it came — yeah, it came from a lot, a lot of notes, and things about — just general references from all different sources, different areas.

Q. But it came from your house?

A. And, and I think I used the Museum, or the Colorado Mesa University library, or I forget to do this in. This was various sources, because, but when DOE was downsizing, their uranium library gave to Mesa State College up on the third floor, that's where I went to get a lot of these references, correct

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reference — correct citations.

Q. Okay.

A. I said, well, I remember a report and had the report number on, say, Tallahassee Creek, Colorado. I went up there to get the information.

Q. So do you have a copy in your today of Exhibit 134?

A. All these — do I have a copy of this stuff? Yeah, it was copied out of my — I guess. This professional secretary sent documents over the Internet, I mean, all by email. See, Bob Graham, so. This was copied out of my files, but I do think — probably on DOJ — DOL references, something like that.

Q. Let's look at Exhibit 135, which is miraculously short at two pages.

A. Oh, this is another one of things that Jeff Tact and I put together about who the vendors were at — not the prime contractor, but other contractors at ore buying stations and sample plant.

Q. Okay. How did you put this together?

A. Jeff and I looked through the records.

Q. To your knowledge, is it accurate?

A. Well, I don't — it's the best I can do.

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Q. And complete through 1966?

A. I think so. Yeah, because, because frankly, McGinley and Al Albrethsen had put together some of these dates and some of these strange names that were here in the beginning, but it's the dates should be pretty correct, because we went with Jeff through the records and got the dates of it.

Q. Is he still alive?

A. Oh, he's the records, still the records manager for the contractor at the site here.

Q. Let's look at 136, please. The record, that's pages 1262 —

A. Yeah, this is, this is a —

Q. Excuse me, I just want to say for what the Bates Numbers are.

A. Okay.

Q. 1262 through 1264. What, and with this, please?

A. Okay. The site down here, the office, got a request for a summary of the leasing program from the Office of General Counsel and, and so I, myself and Ed Cotter to put this together the Office of General Counsel, and he provided them with kinds of attachments on public land orders. Well, this. This is a joint effort between Ed Cotter, myself

1 Jeff Tack per a request of from the General Counsel of the
2 DOE General Counsel on the leasing program. I don't
3 tell you what year it was, but it was several years ago.
4 And they wanted to see these public land where we
5 drew the land, and they wanted to see copies of leases,
6 and, and the Circular 8 Revised Program. And I had
7 then Ed found the leasing program fact sheet. I didn't
8 know I had that copy, but I'm —
9 Q. Other than the missing attachments which
10 are here, is this a complete copy of what you
11 prepared?
12 A. Yeah. As far a I remember it, yeah,
13 Yeah, it says — because October, 2003, so that's
14 when we wrote it.
15 Q. Okay.
16 A. But I'm sure they have a complete copy down
17 there, because —
18 Q. You recognize this document as your
19 prepared?
20 A. 137?
21 Q. Yeah. 136.
22 A. 136. Oh, yeah, this is, this is something
23 I worked on. I didn't know I kept a copy, but
24 because I wrote some of this about what Minion did
25 during the Manhattan Project on, specifically the

1 Indian land — on the Navajo Reservation. And Ed,
2 Ed looked at his files and got all these attachments and
3 he read it over. And then it got edited by you
4 before they sent it off to them.
5 Q. Okay. Let's turn to 137, please, which is
6 entitled Ore Production Report, and it begins on BC
7 1607 and appears to end at 1671. Do you recognize this?
8 A. Oh, yes.
9 Q. Is it from your files?
10 A. Yes, these, these are the old war
11 production records by year that I kept because they told
12 me it was all in the, when I left, because everybody
13 it's all in the National Archives, because I was going
14 to do some work for Arizona, I was — it turned out the
15 Navajos wanted a report on everything that happened
16 there, mining, and all that. And they said, maybe
17 you can get some money from the tribe after we are to
18 do, so you might as well keep those records, and so
19 forth. So, so the Navajos never did never ever have
20 money for me to do this. But anyway, these,
21 there are the ore — the original big one-page
22 records that I had, that I copied that they have
23 down there.
24 Q. Where is down there?
25 A. The site.

1 Q. In Grand Junction?
2 A. The Grand Junction office. They never
3 been sent, as far as I — but these, this has been
4 superseded by the Sioux Falls Shoe Box Report. I
5 don't know if these are ever going to be sent to
6 archives instead — or what.
7 Q. Okay. Do you know who prepared the
8 originally?
9 A. What?
10 Q. Whose computer prepared these originally,
11 do you know?
12 A. Oh, it was the — this was by probably
13 by, when we were AEC, down at the site here.
14 Q. Okay.
15 A. Because they took all the old records and
16 computerized them here, and did this only by years,
17 on a year-by-year basis. But, you see, records for
18 '48 through '53 were all lumped together, for no
19 reason. And then after '53 there was also one this
20 prepared for every year right through 1982, probably
21 through 1983.
22 Q. Let's turn to Exhibit 138, please, another
23 printout entitled —
24 A. This is for year 1960.
25 Q. How can you tell?

1 A. It says at the top, For Calendar 1960.
2 It says — see, everything is sorted by state,
3 within the state, and then controller, and probably by
4 controller, giving the mine name, the tons of ore,
5 pounds of uranium, percent, and the vanadium, and all
6 that, so. And when I was writing some of the reports,
7 I'd go through and add up, I had — yeah, little
8 check marks are mine that I felt, that I added
9 together here.
10 Q. Let me just for the record, this pages
11 BC 1672 through 1708. And I'd like to call your
12 attention to page 1677.
13 A. 77, huh. A blank sheet, you mean.
14 Q. That's correct. So I'm not going to be
15 able to ask you any questions about this page, except
16 you know why it's blacked out, if it was blank?
17 A. No. It probably was never, otherwise
18 I only copied — I only kept the Arizona sections. I see
19 Arizona ends here on sixty — on 76 and then it's
20 California, and probably I didn't have anything that.
21 Q. So your copy also has a blank page?
22 A. Yeah, I think it's just a blank page. I
23 don't think it's black like this.
24 Q. Oh, okay.
25 A. Because the Cal — everything after Arizona

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1 starting in California I didn't need.
2 Q. And so that would be the same example,
3 for 1685?
4 A. Probably. Because this is — again.
5 Uh-huh.
6 Q. So do you think it would be in your
7 files at home?
8 A. Oh, yeah. Because — yeah, Colorado
9 is all blanked out here because I don't have an
10 that.
11 Q. Let's turn to Exhibit 139, which is BC
12 1709 through BC 1775.
13 A. Okay, see that —
14 Q. Is that just another ore report —
15 A. No, this is the New Mexico section. Before
16 we had the Arizona — all these other ones, such
17 like in Exhibit 139 — I mean 138, excuse me, all
18 Arizona stuff, and this one, 139 is all New Mexico
19 stuff. New Mexico ore production.
20 Q. On the first page of the exhibit, there's
21 some handwriting, it says Canyon, Red Rock and Rock
22 in Arizona. Do you see that?
23 A. Yeah.
24 Q. That's your handwriting?
25 A. Yeah, this is some of the old ones, and

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1 when the people would deliver ore to the buying
2 station and mill, the truck drivers sometimes knew
3 what state they were from. And in this case, the
4 mines in New Mexico are listed in Arizona. I found
5 later from research.
6 Q. Would you please turn to Exhibit 140, which
7 is pages BC 11 — sorry, 1776 through BC 1835.
8 please tell us what it is.
9 A. That's all New Mexico for the year
10 through, what is the end, through '71.
11 Q. And again, what was the significance of
12 your hanging on to these things, or making copies of
13 them?
14 A. Because, because they had, it had
15 had — we needed — the AEC gave the New Mexico Bureau
16 of Mines ore productions records for our project we
17 wrote afterwards. And that was for that class work for
18 the so-called Navajo Project I was hoping to do.
19 Q. Was this when you were working for the New
20 Mexico Bureau of Mines?
21 A. Yeah, after I retired. It was really
22 work. I didn't get a salary, but I got all expenses
23 paid for; travel, typing, drafting, all that.
24 hell, I had something to do, and they, they wanted
25 compiled data on New Mexico. And I said, I'll do it

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1 help you.
2 Q. Let's turn to Exhibit 141, which is BC 2752
3 through BC 2861. Just flip through it quickly, if you
4 would, please.
5 A. This is —
6 Q. Do you know what it is?
7 A. Oh, yeah, this is out of my files. It's a
8 list of allocations, because, beginning in the 1960s AEC
9 had to cut down on how much uranium to buy. Congress
10 says you can't buy uranium, all the uranium we found
11 now, we can't afford that. So they had to give
12 allocations to miners based on the November 1964
13 reserves, and other criteria. And this list is of
14 allocations. And what I kept this for is. A number
15 over here, there's a file in the National Archives with
16 all the allocations. That's a lot of the history of all
17 these mines from about 1962, after the certification
18 program. The allocation files have a lot of mining
19 history in them, and that's why I kept this. I could
20 got an index to what's in the National Archive.
21 Q. Okay.
22 A. Because they'll describe what's going on
23 in the, during the allocation program, which was 1962 to
24 '66, or something like that.
25 Q. If you could turn to page 2791.

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1 A. 91?
2 Q. Correct.
3 A. '91, okay. Oh, I see there's a lot of
4 press releases, and things in here, of — about 91.
5 That was in the allocation file. Oh. 91, okay.
6 Uh-huh.
7 Q. There's a bunch of material that's to
8 be addressed to a Jesse Johnson?
9 A. Yeah.
10 Q. And is that somehow part of the
11 allocation —
12 A. Yeah, he was the director of Division
13 of Raw Materials. And Allan Jones was the man. And
14 what was it the Navajo said, Mr. Collins, Mining
15 Department over there said, well, we, we're mineral
16 owners of all these mines that produced, and on,
17 and the past production, we ought to be eligible for an
18 allocation. So after a lot of talking back and forth,
19 the AEC gave the Navajo Tribe a blanket allocation for,
20 that if any mining would take place, they, they
21 would get an — they had an allocation to use in
22 this allocation period. And this was something Allan
23 Jones had to write to headquarters and tell what
24 was going on.
25 Q. Did you actually compile this exhibit

yourself?
A. No, this, this was probably, just, this is, this is in the file folder that I borrowed from the BLM. By the allocation numbers, all this other stuff I must have, I must have copied it just to have the file with it.
Q. You're not the person who — e shelf. Did you actually get these allocations numbers from the National Archives?
A. Yeah, we've gotten a, got reports
Q. I mean you personally.
A. Now, you — like there's a place in here I got box numbers. Oh, yeah, here it. Yeah. Yeah, when I was working on the Navajo Area, we had to know something about, who, what was going on this mine in the '60s, and I wasn't on — I wasn't there then, but you could get an, you could get allocation file and it'd tell you what was going on. So I probably, when I was working on the Navajo Area, we probably ordered maybe a half dozen of these allocation reports just for the historical information.
Q. Do you know who actually typed this up, Exhibit 141?
A. Pardon?
Q. Do you know who typed it up?

A. You mean, you mean the big table?
Q. Yeah.
A. It was done by the staff down at the Grand Junction site.
Q. It wasn't you?
A. Oh, no. I, I never had anything allocation — I never had anything to do with t allocation program, but it was, it was — these allocation files do have a lot of mining history in them.
Q. Gotcha.
A. And all these memos, I see, in my allocation file and they got copied. Good, or they got copied.
Q. Got it. Let's turn to Exhibit —
A. It's all public information, so I'm sure in the National Archives all these memos in their file, too.
Q. I'd like to turn to Exhibit 142.
A. Ha, ha, ha.
Q. That spans two binders, I believe it begins BC 3271, and I believe it ends — that's fat one —
A. 32?
Q. It starts at 3271, and I believe it ends at

3956.
A. 39. Oh, yeah.
Q. You don't have to read every page. Just kind of flip through it, if you would, and tell what it is.
A. These are, these are my field notes that I had in a little — they're on IEEAX, IEEAX is a, trade name for a little type of notebook, and these are all my IEEAX sheets of all my field, and these other peoples' field notes in here, It's just stuff that I, I kept because it had a lot mostly on the reservation. Stuff I kept for just historical era.
Q. Is this thing all from a single folder in your files?
A. No, it's not in a file, it's a little notebook. A series of — well, I'd taken it of o notebook binders, but they're in a little, rather a little box about so big by so big in my, in one of my file cabinets.
Q. Okay. Just look for a section BC 3327.
A. 33, 33. Oh. 33, okay. 3395 getting there. Oh, yeah.
Q. Selection tape typewriting.
A. Oh, this is, this is — these are like

3326 says Operators, compiled by Paul Knowles. He was the district geologist for the AEC, and he, he had, he typed all these up about, mainly from, my, who the companies were and their addresses, and all. And all this typing is — and he had — see, says IEEAX sheet, that's his — and when he left, gave me his little notebook, and so I just kept it all. And this typing is his. Yeah, it — yeah.
Q. And taken together, this Exhibit 142, it looks that — what does that — does that represent of your field notes that you —
A. Just about.
Q. — and took IEEAX for your entire?
A. Yeah, this is — from my field, yeah.
Q. So it's covers all the stuff you in?
A. No, this is mainly, mainly, I don't think there's any Wyoming stuff in here, that's in a notebook, but, that wasn't copied, but — is mainly my work on the reservation, or Arizona and New, it looks like.
Q. From when you were working for federal government?
A. Yeah. Oh, yeah.
Q. Does look like, and I realize you didn't go through every page, but in general, does it look

complete set of your field notes?
A. It's all I have, it looks like.
Q. Okay.
A. And other people, like some of my co-workers, when they left the DOE — AEC, left their notebooks there, and they're in here, too. They're not just — I see a lot of Dan Magleby's here on a lot of these pages. He was a co-worker in the Flagstaff office. DNN — DNM is Dan N. Magleby M-a-g-l-e-b-y.
Q. I think probably most of the people in the room know the answer to this question, but I'm going to ask it anyhow. If you would just turn to the third page, BC 3273.
A. 33.
Q. 3273.
A. Oh, 32.
Q. It's right near the very beginning.
A. Oh, yeah.
Q. Where it says Jimmie King, and so.
A. Yeah. Yeah, like I made a sheet about — each of the — see, it's got a heading here, Carrizo Mountains, East Carrizos, General information. And that — made a sheet like that on all the mining operators in the eastern — in the different parts of

the Carrizos.
Q. And if you look at this page, just look at like the next ten pages afterwards, just real quickly.
A. These are all the companies in the Carrizos.
Q. And that's your handwriting, right?
A. Oh, sure.
Q. Okay.
A. And Paul Knowles looked at this and typed all of this on these typewritten sheets.
Q. Okay.
A. Had contacts and all the people out there, and what they said.
Q. Let me just see if I can find a place here. Let's just look for a second, I'm going to do this for all of them, let just look at BC 3436 is —
A. 34.
Q. — just a little ways through it.
A. Okay, I got it.
Q. Whose handwriting is all that?
A. That's Dan Magleby's, his name here, see.
Q. Oh, I see. Okay.

A. He went to the Tuba City Mill and talked to Mr. Runke up there, and this is his notes after talking to Mr. Runke. Because he says Tuba City Mill is where he got his information.
Q. And that's the TC Mill?
A. Yeah, TC is Tuba City.
Q. In the upper right where it says DNM?
A. Yeah, that's his writing.
Q. Gotcha.
A. He was co-worker in the Flagstaff office. And he — and the date was '61. Yeah, March, we were doing production capability.
Q. So you have this because you just got notebook?
A. Yeah, uh-huh. And then I transfered them in my notebook, all the new, chronologica that's why his notes are intermixed with mine. The next page over, 437, is when he went to February to mill and got data.
Q. Gotcha. Okay, let's go the second one of this, so we're going to look now at 143 for the record, Exhibit 143 is pages BC 3957 through 3963.
A. This is 151?
Q. 143.
A. Oh, here. Okay, yeah, 143. Okay, ho,

ho, ho.
Q. Do you recognize this?
A. Yes. This is something I wrote people, John's people over there, and somehow it was in. I remember now, I had a brown envelope marked BC, I had a bunch of stuff that I was doing for Stoll where abandoned uranium mines were and they did, but that's a —
Q. And if you would just look beginning at 3957.
A. Okay. Hold on.
Q. And ending at — where does this ends?
A. Okay. What I did for Stoller, to help, help one of the men down there, Craig Bell, understand about the VCA on the Carrizos, and it that memo ends at 3963. And then we start with mining contractors compiled for the RECAP program in the Cameron area on 3966. So there's a mix of stuff here.
Q. Okay.
A. I don't think that was the same page, but —
Q. Well, let's look at 3964, if you would, please.
A. 64. 3964. Okay.

Q. Okay, that's part of the same—
A. That's part of that same —
Q. — as the first page.
A. The same thing about Westerns, West' Reservation lease.
Q. Is this a complete copy of what's your file?
A. Yeah, uh-huh.
Q. As far as you know, is it a complete
A. Oh, yeah, because it ends with that from Bob Scarborough, because the map within the on 3963 show a cross section. So this is the section referred to on this map.
Q. 3964 is a cross section —
A. Is a cross section of the Rattlesnake Mine, and the location of the cross section is on 3963.
Q. Got it. And did you, did you do this report that's the first few pages of 143?
A. Yeah. Yeah.
Q. Is this a complete copy of —
A. Yeah, that's a complete copy. It's an information sheet about the West Reservation, because it's very complicated, how the reservation kept and screwed up.
Q. Then 3965, is that just a standalone thing,

or does that go with whatever file this is?
A. No, that goes — that was for, I think. I wrote that for — a ho, ho, ho, ho, ho, Hal. We guess I was talking with one of the Navajo Nation uranium mines people — gosh, I'm having a mind Mel Yazzie, about a mine over along the Canoncito Reservation, and he wanted more information. I think it was something that I provided to the Navajo Nation uranium mines people just for their information. This is some Navajo land way over toward Albuquerque.
Q. And this thing that is just one page document —
A. Yeah, it's an information sheet on a little, a little mine over there on the Canoncito which is now, goes by a different name now I can't recall. Because it, it, it's a mine on Navajo land and kind of forgotten about, and I was just keeping it informed.
Q. What are the next two pages?
A. That's the RECA stuff that I did for RECA on mining contractors in the Cameron area. And this is from Arizona, Arizona mine inspection notes and my own field notes from working there for several years, '57 to '62.
Q. The next two pages is entitled Durango Site. And maybe it's more than two pages.

A. That — this all most have been in
Q. What is that?
A. Yeah, this is — what was that New Mexico Geological Society was having a field trip through Durango years ago, and this must be a draft of something I submitted to them about, put in about the — because at the time the big smokestack at the Durango site was still standing, but it's gone now.
Q. Do you know if this thing ever came in a final form?
A. Yeah, I think it was published by the New Mexico Geological Society.
Q. Did you — did this begin at 3970
A. Yeah, this is a draft — well, Daily Sentinel, our local newspaper, was doing a story about the history of uranium and the tailings there, asked me to write something about the tailings. I, I didn't know much, but John here helped me, anyway.
Q. Right.
A. This was published in the Daily Sentinel.
Q. So this became a newspaper article.
A. Yeah.
Q. Do you recall when about it was published?
A. Several years ago.
Q. Okay. The next two pages.

A. This must have been, this must have been in that miscellaneous envelope of mine. Now, what's on 90, 3972 is not complete. Because there was a cover letter to Stewart Udall, who requested the information for some hearings he was going to have in Shiprock. And I don't see the cover letter. But this was prepared by me, because I didn't, I didn't to go down to Shiprock to testify, so I sent him something when he was having hearings about conditions of the Navajo miners in the, in the early 70s. And I said, yes, I would write something about the situation around the Carrizos. And this is it. And it should be in the — it should have been entered in the records of the hearings that Stewart Udall had in Shiprock.
Q. Putting aside the absence —
A. — in '93.
Q. Putting aside the absence of the letter, is this a complete copy of —
A. Sure, it's two pages.
Q. That's what you sent to Mr. Udall.
A. Uh-huh. These two pages — go ahead.
Q. Well, let's begin with 3974, what's that?
A. That something I wrote Just for the RECA Program. Because they were going NIOSH records, and NIOSH was saying all the mines in Cameron

were — a lot of the mines in Cameron were named mines in the NIOSH records. That's National Institute of Occupation Safety and Health, and they have — this was really confusing the people at RECA to be looking of mine names and they said it's nonsense and I told them it's an open pit. So they wrote something about how the NIOSH records were screwed up.

Q. They were, in fact, open pit?

A. Yeah, they are. I'm writing this to point out the error in NIOSH's WL reading in Cameron. Because they were getting high, estimating high readings, that's working levels, in underground mines, and there aren't any underground — these were underground mine properties. You know, like —

Q. What is the WL?

A. The working level. That's a measure of radiation used to calculate for health and safety somehow.

Q. Just flipping through the rest of pages, are these all things that you prepared?

A. And this Ore Buying Station — this I wrote RECA. And 70, 3976 is something I did for abandoned uranium mines on Cove Mesa for DOE — for DOE down here, for Craig Goodnight.

Q. Is 3976 through 77 a complete —

A. Oh, yeah, that's a summary of the, the AEC lease on Cove Mesa.

Q. Okay. Then if you just flip through the next two or three pages from 3978 to 3982, just a series of short documents. Are they complete as of what they are?

A. Yeah, uh-huh.

Q. Okay. If you could turn to 3983, I think we've seen that one before. If you could briefly recount what, what this is. Is it an article you wrote?

A. Yeah, it's — I belong to the Geological Society of America and several years ago asked the old-timers if they could write up humorous things they remember from the past. And this one of the articles I wrote about Jack Daniels was not a Navajo, it's a name for a whiskey bottle found by where the mine was made.

Q. The mine.

A. And it's a little humorous article about a mine that was named for whiskey bottle in Navajo.

Q. I understand. Let's turn to 3984, please. It's just two pages.

A. That's another one — we've seen this before. This is a duplicate of something just

looked at.

Q. Okay. Then let's turn to 145, which the record has a slightly different Bates range.

A. I think —

Q. — US CHEN 336.

A. Yeah, this is something I wrote to clarify something somebody asked me. When did I write? I guess this is probably written for DOJ about the Rich City Mill, because I think they had a claim from that worked on the construction of the mill, didn't work in the mill, or something.

Q. Do you think this is a RECA document?

A. It's a RECA document, yes.

Q. And you prepared it?

A. Oh, yeah.

Q. Based on personal knowledge?

A. Well, no, I looked it up in the Jensen McGinley report, and some other — I refer to the bottom, don't I?

Q. Yes.

A. Okay.

Q. There's a reference there. What is the source?

A. AEC, CD. Oh, yeah.

Q. What does that mean to you?

A. I think that's a typo. I think it should be CR, that's Arizona Contributed Report. That's a report I wrote for the Arizona Geological Survey. But I think that should be CR instead of CD.

Q. If we could turn please to Exhibit 146, which bears Bates range US CHEN —

A. What page?

Q. 1, Exhibit 146.

A. Oh, 146. Ho, ho, ho.

Q. Which bear Bates range US CHEN 3131 through 3192. Can you identify that, please?

A. Yeah, like when we had the deposition. They were asking if I kept old documents, about I picked up at Window Rock from the Mining Department there, and all this and that. And I said, I had a lot of these in my file. And so I gave them to John to have copied, and these are the, these are miscellaneous press releases and minutes of Tribal Council relating to mining on the reservation.

Q. And this is material you picked up Window Rock?

A. Yeah, through the — probably the 1950s. And some of it goes way back. And a lot of the question came up about AEC relations with tribes, and there's some memos in here back and forth between the

manager and the, and the chairman, the Tribal LC Chairman, and all that, so.

Q. When did you get copies of this stuff at Window Rock?

A. Window Rock. Mainly —

Q. When?

A. Huh?

Q. When?

A. Oh. At various visits down there.

Q. So this is a compilation from —

A. Compilation, and I — when I gave all to John to copy, I sorted it by title; leasing permits in one place, early information there in one place, the AEC permit in another place, and this, so. These are my little yellow stickies on a lot of material that was paper clipped together.

Q. Do you know if this material is at Window Rock or not?

A. It should — I wouldn't — I say it could be, but it's — I don't know about files down there.

Q. Okay. Let's turn to Exhibit 147, I'll note for the record —

A. This says Application for Mining. See, I think here, and the one we just looked at,

where there's a letter from the AEC — I mean —

DAVID A. TAYLOR: Excuse me.

A. — giving the AEC permission to go — it's a joint council resolution given in 1949 the AEC sort of — wanted to cooperate with the AEC and uranium for the Cold War, be good patriots, and that. Good Samaritan.

Q. Understood. I, I guess I can't read to. I just wanted to ask: Is this something that from your files?

A. Yeah, I have it.

Q. And where did you get it?

A. Over the years I collected all this of stuff that's been used in various lawsuits, that was still in my files, and it was all sorted by sort of rough titles with yellow stickies on the put yellow stickies on them for John.

Q. Do you know where you got this?

A. All this stuff came mainly from friends in the Mining Department at Window Rock.

Q. Okay.

A. They'd say, oh, you want to see this? And some of it came from the AEC files when they's letter up to the AEC, we were supposed to that with us when we all worked on the reservation.

Q. So Exhibit 147, which US CHEN 3193 through —

A. Because it was asked about mining in the last deposition, and this is an application for a mining permit.

Q. My only question —

DAVID A. TAYLOR: Excuse me, Robert, could we take about a 15-minute break here, I would greatly appreciate it.

ROBERT N. FOSTER: Sure, absolutely.

JOHN DENNIS DUNN: This time approximately 10:28 and we're off the record.

(A recess was taken from 10:28 a.m. until 11:30 a.m.)

JOHN DENNIS DUNN: This time approximately 11:30, and this is the end of tape numbered 3 in the deposition of William Chenoweth. We're going off the record to change tapes.

(A recess was taken from 11:30 a.m. until 1:06 p.m.)

JOHN DENNIS DUNN: This time 1:06 and we're on the record. This is the beginning of tape number 4 in the deposition of William Chenoweth, this is volume 2. We are on the record.

Q. Okay. I just have one more question

Exhibit 147, which we talked about before the break, Mr. Chenoweth.

A. 147, okay.

Q. And that is: Did that come from where did you get it?

A. I got that from the Mining Department, Mining Department of the Navajo Tribe in Window Rock, Arizona.

Q. Perfect. Let's move on to 148.

A. 148.

Q. Can you tell us what that is, please?

A. 148 is a letter from the Mining Department for their — let's see. Leo Denetsone, assistant to the mining engineer. In my absence, Keith was, he wrote this letter over to them to get all the valid — let's see, all of the valid leases and assignments of tribal, Navajo Tribal Mining as of the date of this letter, which is March 1960 of

Q. And I see it's addressed to Tipton?

A. Tipton in the Grants office.

Q. Why do you have a copy?

A. Because I was in the Grants office was — in 1960, no, in 1960 I was still on staff, so he sent me a copy over there. All these mines, Cameron and Monument Valley mines.

Q. And when did you get a copy, copy, or a copy?
A. Probably the next day or a week or half got it.
Q. And you hung on to it ever since o
A. Yeah, because Leo had made a compl inventory of all the valid leases and mining, which, which a lot of people didn't know, didn't know over in Arizona how many were still valid Cameron or Monument Valley or over at Black Mesa, in the Lukachukai, so.
Q. And I neglected to mention this, it's US CHEN 3203 through 32 —
A. And I color coded, on my copy, I coded which ones were in Monument Valley, which were in the Lukachukias.
Q. Okay.
A. And which ones were in the Black Mountains
Q. Does that color coding look, highlighting on page, for example 3205?
A. Yeah. Yeah, the color coding didn't come out, but at least it looked like, Monument Valley was supposed to be green, oh, it is kind of green
Q. What are the colors?
A. Blue is the Black Mountain, yellow

Tsosie School, and yellow would be the Lukachukais.
Q. To your recollect, is this exhibit complete copy of —
A. Yeah.
Q. — what you received?
A. Yes, it is.
Q. And do you have a version of this today?
A. Uh-huh.
Q. Well, let's move on to Exhibit 14, please. And I'm just going to state those Bates numbers for the record, and that begin at 3209 and it would be 3213. This is the US CHEN series. And I'll ask you what this is.
A. These are some more — these, I don't know if they're called resolutions, but they're old, old information about various things in the reservation that I got down at Window Rock. They wanted to know if this — I wanted history, what was going on back then, and they gave me these old resolutions.
Q. Do you remember when you got these Window Rock?
A. No. Probably, probably in the '5 Probably in the late '50s or early '60s.

Q. When was the last time you was in Window Rock?
A. Well, it was the day that President Kennedy was shot. The reason I remember this is as I, living in Grants and I made my monthly trip over in Arizona, I'd been up Grand Canyon, down to Cameron as coming across on the Tuba City to Window Rock Road, and thought, well, I'll stop in Window Rock and see what's new in the Mining Department. I got there, everything was closed up. I said to this woman, what happened? She says the president is dead and walked out. And I didn't know even what happened until I got home and asked my wife. And that's the last time I was in Window Rock. And that's how I remember it because the day that that happened.
Q. Let me call your attention to Exhibit 150. For the record, that's US CHEN 3214 to 3216.
A. This is the cover letter that with that document we saw previously.
Q. Right, and that document was previously, is that also part of this exhibit?
A. Yes.
Q. And taken together, is Exhibit 15 complete —
A. This is a complete exhibit.

Q. Okay. Let's look at Exhibit 151, please. For the record, that bears Bates range, one page, US CHEN 3217. Do you recognize that? Do you remember it?
A. Yeah. This is a page out of the Navajo Atlas showing the reservation here is this, this area, that's the reservation boundary. And this, what we were talking about in the last deposition, the allotted lands in McKinley County. And this is the best map I've ever seen of allotted lands and where the Navajo say this is, this is the land of the Navajo Nation. And I drew in Township 14 North, 10 West here in the corner, that's, that's Ambrosia Lake. That's eastern — that's western Ambrosia Lake, that little dot is Kerr-McGee Section 22 Mine, it shows the — we talked about the checkerboard. This is an example of a checkerboard, you see by the color coding.
Q. And the Atlas that you referred to, could I get a copy of it?
A. This is out of the, the summary, I call the Navajo Atlas, the big things the Corps of Engineers prepared for EPA, and that is one of summary report, the last, uh-huh.
Q. Have you ever seen the whole Atla
A. Oh, yeah, I've got copies of it.

Q. The whole thing?
A. All the different areas — well, an author on each, on each chapter. I contributed each of the different regions. And so the Corporation sent me copies of each when it was done.
Q. Do you recall which core of engine office?
A. San Francisco. They were a contractor for the Region 9 EPA.
Q. Let's move to Exhibit 152, please.
A. And the contractor that did all the graphics was a contractor in Las Vegas called Spreca, Incorporated, T-e — T-e-r-r-a, capital S-p-r-e-c-a, I-n-c. They did all the graphics, all that, and they're the ones I worked for on prints.
Q. For the record, Exhibit 152 CHEN 3218 through 3228.
A. So this — we were talking about different leases, and questioning about the leases on the allotted lands different than the leases on the reservation land. And I said I didn't know, I have a copy of an allotted land lease, which was, yeah, this is, this is the lease I got when I was talking about the reservation, about the mine on the Navajo Reservation east — just west of Albuquerque. And it's

a typical, I was told this is a typical allotted lease.
Q. Is there any particular significance this one over any other?
A. No, it's just one that somebody, I think I got this — I think this was in the Grants office files, or something, and I copied it, yeah, because it refers to this real unknown mine on the Canoncito Reservation.
Q. The Grants office of who?
A. Atomic Energy Commission. They were transferred after Flagstaff was closed in 1962.
Q. Do you notice at the top, right-hand it says Exhibit A on page 3219?
A. No, I don't know what that meant.
Q. But you see what I'm talking about?
A. Oh, yeah. Uh-huh. I have no idea.
Q. Do you have any reason to doubt this is not a complete copy of the lease?
A. No, I'm sure it is. I would, I would say.
Q. Let's move on to — yes, making a complete copy?
A. Yes.
Q. Let's move on to Exhibit 153, please. For the record, that's US CHEN 3229 through 3236. Do you

describe what that is, or these are, please?
A. These are just miscellaneous items of the Tribal Council that I picked up at Window Rock from time to time dealing with, dealing with uranium, vanadium mining.
Q. Is there any special reason you selected these, other than the fact that they deal with uranium and vanadium?
A. Well, these are early ones. All these I see this one has to do with the Shiprock Mill, building the mill at Shiprock, and, and — no, they, they all seem to be dated in 1953, so. And they're dealing the resolution — this is miscellaneous information about operating on the reservation.
Q. Is that why you selected these?
A. Yeah.
Q. Okay.
(Phone not on.)
ROBERT N. FOSTER: Sorry, sorry.
Q. We're moving on to Exhibit 154, that is a single page bearing the Bates Number, in tiny print, US CHEN 3238. Do you recognize this, Mr. Chenoweth?
A. Yes, this is the Department of Energy preliminary map of the Monument Valley. I didn't

prepare this, some of my co-workers did. This is one of these maps we talked about last deposition that AEC prepared, mainly for the Navajo mining people, to what we knew about where the mines were, and the geologic trends, and so forth. And this was, actually open file to the public.
Q. Do you have a version of this, sir?
A. This, this was copied from my papers.
Q. Is your version the same size, larger?
A. No, it's about so big.
Q. About two feet by three feet?
A. Yeah.
Q. Okay. So this is reduced?
A. This is reduced down to page size, so you can barely read it.
Q. Let's turn, please, excuse me, to Exhibit 155.
A. Okay.
Q. For the record, that bears Bates 3239 through 3241, it's three pages. And bottom it says pages 16 through 18. Do you have a version of this at home?
A. This is a report I wrote for the Program in the beginning because I — and it's about — and also there was a question from somebody

1 along the lines, I think, about mining on the
2 lands. Was there any mines on the allotments?
3 said, yes, there was. And this is, this is a
4 mining on the allotments in this big report I
5 RECA in 1995, or something like that.
6 Q. Am I correct if I say that this is a
7 small portion of that larger report?
8 A. That, that is correct, a small portion
9 Q. And that small portion relates only to
10 Navajo allotments?
11 A. Yeah, that was really to explain
12 document uranium production on the allotments
13 McKinley County, New Mexico.
14 Q. In your files at home, is this all
15 together, or are these three pages —
16 A. Oh, I have a complete report.
17 Q. Right. But at home —
18 A. Yeah.
19 Q. — do you have these three pages out
20 or separated from the rest of the report?
21 A. No. I just pulled this out due to
22 question about allotments, and all that came up in
23 the last deposition. I think, I think Window Rock
24 has a — I think DOJ sent a copy of this to Window Rock,
25 but I don't how much distribution it's ever ha

1 Q. Do you recall the name of anybody at DOJ
2 that you worked with on the RECA?
3 A. It would be Diane Spellberg, she's
4 assistant attorney in the RECA Program.
5 Q. In DC or in Arizona?
6 A. Oh, DC. 15 — 1425 New York Avenue
7 Northwest.
8 Q. That would be it.
9 A. I deal with those people about work
10 on questions.
11 Q. Let's turn to Exhibit 156, please
12 A. Oh, ho, ho.
13 Q. And I'll just for the record that it's
14 US CHEN 3242 through US CHEN 3321. Do you recognize
15 these?
16 A. Now, this — I have a box, we talked about
17 it last deposition, that I kept mining permits the
18 history of the mining permits mainly for Cameron
19 Lukachukai, Carrizo Mountains, parts of Nazlini Valley
20 Well, mostly — most all of the whole reservation
21 kept — that I got the data from Window Rock kept
22 these little cards, and you — they — and it
23 requested I furnish to John last time to have
24 duplicated. So each of these is a little like card that
25 that I kept. In our office in Flagstaff.

1 Q. And these are in your handwriting?
2 A. Oh, yes.
3 Q. And how did you compile these, again
4 please?
5 A. Mainly from getting data at Window Rock.
6 And when, when we were doing — at one time we
7 them — we were asked to make a dossier on each
8 operating mine in the United States. And our office in
9 Flagstaff had to do all of Arizona. And that to do
10 right, we had to know what mines were still, which
11 weren't valid, and sort of a little history of
12 mine. And that's why I started this card file
13 Q. During what period of time did you create
14 these cards?
15 A. Oh, probably 1959 through 1962, '
16 Q. What kind of records at Window Rock did you
17 use to compile these cards?
18 A. We talked to Mr. Denetsone, and he had
19 all this stuff in his file and he just pulled out.
20 Like that letter he wrote to Mr. Tipton, he'd
21 send me this kind of information all the time. We had
22 an exchange of information. I could tell him was
23 mining where and drilling, and he would tell who had
24 the new leases, and who was cancelling leases or mining
25 permits, so.

1 Q. So was this based on information that he
2 gave you?
3 A. Yes.
4 Q. You didn't actually look at the paper
5 leases to create these?
6 A. No, I, I copied stuff out of his files.
7 Or he would give me a letter, official letter to me,
8 but.
9 Q. So if there's a hundred cards, does these
10 that mean you reviewed a hundred letters?
11 A. No, huh-uh. I know one thing from
12 him was a big, big — well, it would be Exhibit 1,
13 but —
14 Q. A ledger?
15 A. A big ledger book. No, he kept a ledger
16 and he just photocopied it for me.
17 Q. Okay. Do you know how he made the ledger?
18 A. From the records they — the Tribal Council
19 had to approve every mining lease, and then it went
20 to the BIA. And so between the BIA and the Mining
21 Department, they had duplicate records of this kind
22 of stuff.
23 Q. So — all right. Let's move to 157. Let's
24 For the record, that Bates US CHEN 3322 through 3325
25 Do you recognize this?

A. Yeah, this is another thing I got at Window Rock, much later. It was, it was in a pamphlet they sent out to people who wanted to prospect the reservation in 1952.

Q. When you say you got something at Window Rock, are you —

A. From the Mining Department.

Q. Of the Tribe, Tribal Mining Department?

A. Tribal Mining Department, yeah.

Q. So you think you would have obtained, did you obtain Exhibit 157 from the Mining Department?

A. Yes.

Q. — of the Navajo?

A. Yeah, probably from Mr. Denetsone.

Q. Just looking at this document — evidently the original of this document —

A. Yeah —

Q. — this notice?

A. — it was really — it was, it's like a press release that the tribe put out to anybody wanted prospects.

Q. As far as you recall, is this a late copy of it?

A. Yes, it looks like it because it's signed by Allan Harper, the director, the BIA Area Director,

and Sam Ahkeah, the Tribal Council Chairman.

Q. Do you recall whether or not the IV you saw had any attachments?

A. Apparently not, because I don't have them.

Q. Well, do you know — do you remember there were —

A. No —

Q. — attachments

A. — that's too long ago.

Q. Your memory is superb. Let's look at Exhibit 158, please. And for the record, it's US CHEN 3326 through 3333. Do you recognize this?

A. It's another document I got from the Navajo Tribal Mining Department. They had this in files, it was dated April 27, 1951. And it set out the, and then gave me the procedure for getting, and all that.

Q. And you will notice on page 3330, it looks as though it's a different resolution. Do you recall whether that's the case?

A. On 33?

Q. 30.

A. 30, what, 30?

Q. Yeah. At the bottom right, that's 3330. It's also page 304 in the bottom center?

A. 304. Yeah, this is a different resolution, isn't it?

Q. I was asking you.

A. Oh, I know what this is. There's, at the bottom are numbers in a great big notebook they had. They had, down there they had all these resolutions actions of the tribal counsel all filed chronologically. And somebody down at the bottom numbered them so they'd know where to get them. That number at the bottom refers to a file number in the Mining Department. Now I remember that.

Q. Okay. And did you obtain these at Window Rock?

A. Yes.

Q. What made you obtain these particular?

A. Oh, wanted to know a little about the history of mining permits, and all that, and royalty schedules. Because the royalty schedule always changing. And the tribe was also changing, like to encourage more prospecting and more mining.

Q. Were there resolutions that you didn't make copies of that were down in that big book?

A. I don't know. I, I can't remember because they gave me these.

Q. Oh, they gave them to you?

A. Yeah, I didn't — they said here's, here's some history for you, or something like

Q. Gotcha. Let's look at Exhibit 159, which for the record is US CHEN, and I can't tell. It's clearly a photo of a reduced mine location. Do you have the original in your files?

A. I have, I have an old, beaten up copy like this. It's a map about so big by something, that.

Q. Maybe two feet by four feet, or s

A. Yeah. And my — the original, I misplaced lost in the D, in the stuff that AEC sent to USGS, I think, because in the associate case that I won for El Paso, they wanted to get a cleaner copy of this, and nobody could find a cleaner copy. But that's the map the AEC released to the public. And I see it's preliminary map number 20. It just has mining, it has no production on it, and all that. But a map that AEC draftsmen drew from maybe, I think from the Cameron Mining Company map.

Q. All right. And you still have a beat up version at home?

A. Yeah, I have this one. You can see the paper's starting to oxidize pretty bad.

Q. If you would please —

A. Oh, and then —
Q. Go ahead.
A. Bob Scarbough of the Arizona Bureau took this map and had it redrafted and added, his words, and then he added all the known uranium occurrences that were never mined to his map.
Q. Do you know where that map is, if it still exists?
A. It's in my report on the Carissa District we talked about the last deposition.
Q. No, I mean Bob Scarbough's original.
A. It would be in the Arizona Geological Survey files in Tucson.
Q. Let's look at Exhibit 161, please. Do you recognize this?
A. Yes, I do.
Q. And that appears to be US CHEN 3336. What is this?
A. This is another one of the series of maps that we put out, and this is, like, it's way in the lower, right-hand corner, this is — a Navajo Mining Department said they'd like to have a map of the Lukachukai where the mines are, and the production listed. And so this is something I put together — I forget. I can't read the date here, but it's one

of the series of maps that I made as — from the AEC said we ought — if they requested this sort, we ought to help them out. I just didn't shout out of the blue. They made a request for mine locations, the Window Rock mining people did, and this is another one of the products of that request.
Q. Do you have a larger version of this at home?
A. Yeah, it's — I have a mylar copy so big and so big.
Q. Two feet by three feet?
A. Yeah, it's —
DAVID A. TAYLOR: Excuse me.
A. And the time —
DAVID A. TAYLOR: Pardon me, Mr. Chenoweth. I have some confusion about this exhibit that we're talking about now.
ROBERT N. FOSTER: 161, I think.
DAVID A. TAYLOR: I thought it's —
ROBERT N. FOSTER: Display 161?
DAVID A. TAYLOR: — I think it's 160.
ROBERT N. FOSTER: 160 is M-16. I wrote down the wrong number. Yes, this is Exhibit 160. And I apologize. And that's the one we're talking

about. Thanks, sir.
Q. That's all I have on Exhibit 160. Just want to go back, if we could, to 158.
A. 158?
Q. Yeah. It's back a couple. I'm so sorry. Those were those resolutions we talked about.
A. My yellow sticky said permits, 195.
Q. Right.
A. The resolution.
Q. And I think you said these were given to you by the, by somebody at Window Rock?
A. Mining, Navajo Tribal Mining Department.
Q. Did you ever see the originals of these?
A. This is what they pulled out of what they had on file there.
Q. So they gave you photo copies?
A. Yeah.
Q. Are these a complete version of what you were given?
A. Yeah, I'm sure they are.
Q. Now, finally, the moment we have waited for, Exhibit 161.
A. 161.
Q. We're on 161 now. Isn't that, Mr. Taylor.

DAVID A. TAYLOR: I believe it's accurate.
Q. All right. And just looking at Exhibit 161, which is US CHEN 3336. Do you recognize it?
A. That's another one of these. This is preliminary map number 31.
Q. Do you have a larger version at home?
A. Yeah, it's the same.
Q. Some number of feet by some number of feet in size, is that right?
A. Oh, I'd say three feet by four feet.
Q. And what does this represent?
A. This is a map showing mine locations and some basic geology and ore production of what AEC calls the Black Mountain locality, to the left of the map, the Rough Rock Locality in the northern part of the map. The Rough Rock Locality on mines in Morrison formation. The Black Mountain Locality on other mines in the Toreba Formation. T-o-r — wait a minute. T-o-r-e-b-a.
Q. At top of this it says, Economic Geology. Do you see that? It's awful small print.
A. Huh?
Q. It says Economic Geology —
A. Yeah.

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Q. — at the top.
A. I wrote that.
Q. Is there something about this that reflects economy or economics?
A. No. No, it means, it's just the, a little bit of the history of area the, generally the geology, the deposits. Nothing to do with price or cost, it just has to do with the mining.
Q. Let's move —
A. Some editor probably put that in, I didn't. I don't remember doing it.
Q. Just wanted to check. Let's move to Exhibit 162, which is a record that begins US CHEN 3337 and ends at US CHEN 3343. I'm sorry, 3338 instead of 3343. And do you recognize this?
A. Yeah, it another document about early regulations of the mining permits and the prior permits and royalties, and all that, that from the mining people at Window Rock.
Q. Is this a complete copy of what was given to you?
A. Yes, I think so, because it goes page 1 through 4, and there's a signature of the Tribal Council.

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Q. Do you know why it includes documents that are entitled Amendment?
A. No.
Q. Do you see that on the last two pages?
A. Amendment.
Q. The last two pages of the exhibit?
A. There's four. Oh, I see. Oh, yeah. There might have been some wording changes, I don't know.
Q. Were these Amendments given at the same time that you —
A. Same time, I think so.
Q. — received the resolutions?
A. '52. Well, I can't tell. I keep a lot of these at one time and — I just remember.
Q. We've gone through now a number of different photo copies of resolutions, amendments entitled resolutions. Did you get all of these once —
A. No.
Q. — at Window Rock or from various
A. Various times.
Q. Before President Kennedy was killed.
A. Uh-huh.
Q. Let's move on to 163, please. The record that begins US CHEN 3344 and ends US CHEN 3347.

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Do you see that? Do you recognize this?
A. Oh, yes. This is another one of the documents. This is a later one, dated '61.
Q. This was given to you by the —
A. Yeah. Mainly because we wanted to keep up on the royalty schedules.
Q. Now, I notice that, for example, one of these pages that's got regular text on it, it's not the number in the bottom like the other ones. Do you know why there's no number here?
A. No, I can't — no.
Q. When these were given to you, you did go to Window Rock and say I would like some examples resolutions with royalty schedules?
A. I think maybe I wanted to know what the latest royalties were, because it's constantly changed. See, this is interesting, because this has another ore schedule here on the this one page.
Q. Right.
A. On 346. And then they, because maybe because there was — it might be because of a grader being built at Cameron they put in another schedule — well, that wasn't — anyway, they put in a royalty scheduled for upgraded ore. That would be material. put the Benson upgrader or the Monument 2 upgr

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Q. And that's now you're referring to page 3347?
A. Yeah, yeah, it's upgraded ore.
Q. Who determined the royalties for upgraded ore, or the royalty percentage of mine value per ton?
A. I imagine it was some of the guys in the Mining Department.
Q. So —
A. AEC didn't.
Q. So is that why you had to get this information?
A. Yeah, we wanted to know, we were going to —
Q. Okay. Now, we turn to Exhibit 164, which is — just wondered if this came from your files.
A. I've never seen this before.
Q. Perfect. Let's move on to 165. I expected that answer.
A. It's Rocky Flats, Department of Energy document. I don't know. I — this isn't mine.
Q. Okay. Let's turn to 165. 165 is US CHEN 3349 through 3351. Do you recognize this?
A. Yes, this is, this is, this is, you know, you want to do exploration, you had to get a permit.

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Q. Okay. And this appears to be a form.
A. Yeah. This is a form they'd give to anybody that wanted to do exploration on the reservation without a mining permit, without a mining permit.
Q. Is this something that the Atomic Energy Commission had to get before doing its —
A. No.
Q. — exploration in —
A. No.
Q. — the Navajo Nation?
A. No, this is something they developed much later during the big uranium boom, I think. It's something they passed out to everybody. You'd go in the office down there and ask about doing mining, or something, well, they'd say well, you have to have a form, you have to fill out a form like this.
Q. Do you have a copy of this in your files?
A. Yeah, this is copied from mine.
Q. Where did you get it?
A. Window Rock.
Q. Let's go to Exhibit 166, please. Do you recognize this?
A. This is a Bureau of Mines report that I have a copy of, and it's — the US Bureau of Mines

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a series of these kind of reports during the uranium boom on different operations. They went to Climax Uranium and they, and they wrote this report on three different Climax mines. One of them has to have had to be in the, happened to be in the Lukachukai Mts. that's why we've talked about it in the past. The Frank Number 1 Mine on Mesa 4 1/2 is one of the mines described in here.
Q. Do you happen to have an original of this at your house?
A. I have a photocopy that's not, it's not as good as an original. I loaned my original to some lawyers one time and I never got it back.
Q. But you've seen the original?
A. Oh, yeah, I had the original at one time. And then I went down to the DOE library, and I had them make me a photocopy.
Q. Is this a complete copy of it, do you know?
A. I would say it is. Let's see.
Q. So far as you can tell?
A. As far as I can tell, it looks it.
Q. For the record, this is 33, ENU 3392 through 3390. What made you hang on to this particular report?
A. Oh, because at one time, I dealt with

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DOE, we had to make an evaluation of the blocks, and, and Climax had one of the lease blocks on Outlaw Mesa in Mesa County, and this had a lot of stuff on it of lease block up there.
Q. Do you know the author of this by chance?
A. Yeah, I know — I've met Mr. Dare. He was a mine engineer out of Washington D.C. And he, he photographer as a hobby and he, he came out and these reports and took all of these interesting pictures. And I know one time I wanted to use some of his pictures in a report, and I wrote to him and he said, yeah, just give me credit for the photos. A lot of people use his photos without credit. He's probably passed away now. But he retired, I think, in — oh, some place around Reston, Virginia. His official name was Wil, not William, Wil Dare.
Q. Let's look at Exhibit 167, please. That begins US CHEN 3391, ends at 3393. Do you have that?
(Phone disconnected.)
JOHN DENNIS DUNN: This time is approximately 1:54 and we're off the record.
(A recess was taken from 1:54 p.m. until 1:59 p.m.)
JOHN DENNIS DUNN: This time is

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1:59 and we're on the record.
Q. Okay. This is Exhibit 167, and I'd like to call that your attention. It begins Bates 3391 and it ends at 3393. Do you see that?
A. Yes, I do.
Q. Do you recognize it?
A. Yeah, this is another one of these documents, especially dated in March of — and this is dated — something's wrong here.
Q. What's wrong?
A. These are two different documents. It's saying they were the same. This is a 1 March of '51 document about resolution — the Tribal Council affecting mining. And this one is a page 2 of something else. It's dated 12 of May '55. So somewhere we're collecting these and filing them together got this mixed up, because this is, this is about one of the early resolutions about, it looks like allowing mining permits to non-Navajos.
Q. And at the bottom it says 338 —
A. Yeah, that would be out of the deal they had. And we went back to some other with a smaller number before. But this — the page 3 wonder if it belongs in something back in 50, then the '55 series, because it sure doesn't, neither doesn't

go with this one.

Q. As far as you can tell, is page 33 complete version of what was given to you?

A. Yeah, it does, because it's signed by Sam Ahkeah, the Tribal Council Chairman.

Q. Look at Exhibit 168, please. For record, it is pages 3394 through 3401. Do you recognize this?

A. Yes.

Q. And you're the author, right?

A. Yeah, I'm the author. The thesis is, this is something I brought to my deposition in January. We're talking about occurrence B, number 1 on the Navajo priority list, and this is my, this is description of, of — when I went to find occurrence B and my results, so. This is about Zhealy Tso's prospect over by Chinle, Arizona and somebody occurrence — on occurrence A and occurrence B off his mining permit, so. I don't understand why EPA wanted that such a high occurrence to be evaluated, what I found, from what I saw in 19 — whenever I was there. Anyway, when was I over there. It would have been, it probably would have been about 1960. Anyway, this, this is all I know about occurrence B that is on their number 1 priority list.

Q. Okay.

A. And it's a complete record, because that's the map in the back.

Q. There's only one in the back?

A. Yeah.

Q. The bottom center, beginning second page of the exhibit, but maybe the first page of report, there's handwritten page numbers. Is that your handwriting?

A. Yeah, uh-huh.

Q. Okay.

A. Apparently, apparently the editor of the Arizona Geological Survey never — no, those are not mine, those are — the editor of Arizona Geological Survey must have added those, because that's not my writing.

Q. Do you know if this was published, or accepted by them, or whatever term they use

A. They, they released it to the public in January of 1990. And this, sent me back, and they should have sent a copy to Window Rock, b

Q. Do you recall why you wrote this particular report?

A. Yeah, Zhealy Tso was a Navajo official, and he always claimed that Arizona Giant Mining Co

stole his ore and he never got paid for it so he made a big stink to the AEC, bring a big official complaint to the AEC, and he's a Navajo official, you better look into it. So one of my co-workers, Gray, G-r-a-y, went over there, looked at his ish the ore, the ore was never shipped, it was just up on his property there and it was too low grade economic.

And Zhealy Tso didn't believe me, so I — they sent me back a year or so later, so he even went to the Governor of Arizona and complained. And the Arizona mine inspectors, I don't think wanted to get involved.

Anyway, to make a long story short, this is a summary of my report to the AEC about the alleged missing ore shipment from Mr. Tso's mining permit. And when I went over there, the USGS had found occurrence A and an occurrence B off his mining permits, and I looked at them. And it just happens that appears now on EPA — on Navajo priority number 1. and I don't understand it, but.

Q. Do you recall when this, for lack of better term, controversy arose between —

A. Yeah, it's right here in that's-she. dah, dah, dah, dah. Oh, what — he said the wa-

see, Arizona Giant Mining Company got their mining permit in June of 1955, and they drilled the ore, and Mr. Ron Roy was — was it — it was Chuck, E not Gray, Chuck Evesen, E-v-e-s-e-n, he went and examined it. And then later Gray went over and examined it. And when did I go over. Anyway. There was a big concern about his ore being stolen and the AEC said that he didn't show up in any mill records or buying station records. And we all, the guys said the ore was still sitting there on his property, it was low grade to ship, but he didn't believe, and so I was over in 1959, is when I was there

Q. Okay. And could you look at 3400

A. Anyway, it was a big comedy of errors, in our opinion. But he wouldn't believe, he wouldn't believe that the ore was not shipped because it was too low grade.

Q. Was, as you recall, was the issue the ore wasn't shipped, or was there a dispute the grade of the, the grade of the material?

A. I'm sure the mining company figured that they weren't going to spend money hauling over to Tuba City and not paid for it, so they abandoned the property. But he always thought shipped some place and not paid for. But the Navajo

1 official, a lot of time and effort was conducted.
2 Q. Now, if you look at the Appendix, which is
3 on page 3400.
4 A. Uh-huh.
5 Q. So you have to go back, I think, to
6 3400, you have to go back a page in your book. That's
7 the Appendix that has the four tables. It's a table
8 showing the analytical for Occurrence A and Occurrence
9 B.
10 A. Oh, yeah. A lot of these are okay, —
11 Appendix.
12 Q. And can you tell from that exhibit where
13 it says Appendix when these samples were taken? I
14 read it as 1978.
15 A. These were USGS samples collected. And it
16 says here in 1978 by Bob Thaden, who wrote, wrote a
17 report on this, on — well, this is part of NURE,
18 the DOE's NURE program, National Uranium Resource Evalu
19 program, and the USGS was assigned this far Arizona
20 to evaluate, and Bob Thaden, who I knew, worked in Alaska
21 Too, and took a lot of samples, and this is out of
22 his report that was published in 1982.
23 Q. So if I said that these samples were taken
24 in 1978, does that seem right to you?
25 A. Apparently so, yeah.

1 Q. Let's move to Exhibit —
2 A. And see there's Appendix B down here. Only
3 has any uranium in it. And that's what I find. And I'm
4 all confused about why EPA says it's a high priority.
5 Q. Let's look at Exhibit 169, please. Is that
6 the same W. L. Dare that you talked about earlier who
7 wrote this?
8 A. Yeah, this is Wil Dare's — or another —
9 he wrote several of these reports all over the
10 Corners area. And, and Kerr-McGee agreed to cooperate
11 with him and open up all the files and their and
12 everything to him. And I think it's a, it's very good
13 report on the Lukachukais.
14 Q. Let me just note for the record that
15 exhibit US CHEN 3402 through 3436. If you just
16 take a minute and flip through it and tell me this
17 is — well, have you seen the original of this?
18 A. Yeah, I had, I had the original of that
19 I — I think maybe Wil Dare gave to it me original
20 report, and then I loaned to some Kerr-McGee guy and
21 never got it back. And so eventually I saw report
22 listed in a catalog of out-of-date Bureau of M
23 Reports, and I ordered for a couple bucks, maybe five
24 bucks, or something. And, see, it was with from
25 the University of Idaho Library, that's why stamp

1 is on here. Because this is an original that I got
2 from a used book store, because I wanted to have a copy
3 in my files. And I never got my original that Wil
4 Dare gave me.
5 Q. Is this Exhibit 169 a true and accurate
6 copy of the original, as you know it?
7 A. Oh, yeah. Let' see. Yes, because
8 it's got the Government Printing Office stamp at the
9 bottom, which shows that's the last page.
10 Q. On page 3436?
11 A. Yeah, 3436.
12 ROBERT N. FOSTER: I think one,
13 but just give me a minute to talk to my client and
14 go off the record.
15 JOHN DENNIS DUNN: Okay. To let
16 you know, we only have five minutes left on tape.
17 ROBERT N. FOSTER: Might as
18 change it.
19 JOHN DENNIS DUNN: You got. The
20 time is approximately 2:11. This is the end of tape
21 number 4 in the deposition of William Chenoweth. We're
22 going off the record to change tapes.
23 (A recess was taken from 2:11 p.m.
24 until 2:20 p.m.)
25 JOHN DENNIS DUNN: We are on the o

1 record. This is the beginning of tape number 5
2 volume 2 in the deposition of Mr. William Chenoweth.
3 The time is approximately 2:20.
4 ROBERT N. FOSTER: I have further
5 questions for this witness, and I'm auctioning it.
6 CHRISTOPHER J. NEUMANN: Take a break
7 during the shuffle.
8 JOHN DENNIS DUNN: Okay. This is
9 approximately 2:21, and we're off the record.
10 (A recess was taken from 2:21 p.m.
11 until 2:23 p.m.)
12 JOHN DENNIS DUNN: This time is
13 approximately 2:23 and we're on the record.
14 EXAMINATION
15 BY CHRISTOPHER J. NEUMANN:
16 Q. All right. Good afternoon, Bill.
17 A. All right.
18 Q. I'd like to start off with another
19 definition, and it's one I imagine you're familiar with
20 in the context of mining. Looking on the Internet
21 before we started for a definition of processing, and I
22 saw one that I want you to react to. It's suggested
23 there are four types of processing; comminution, which
24 is particle size reduction.
25 A. Uh-huh.

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Q. Sizing, which is screening or classification.
A. Uh-huh.
Q. Concentration, which can be physic chemical.
A. Uh-huh.
Q. And de-watering, which is solid/liquid separation. Would you agree that's a —
A. Yes.
Q. — reasonable definition of sizing?
A. Uh-huh.
Q. And can you maybe share for me, to the extent you're familiar, some of the ways that, in your experience, would reduce the size of the ore during their mining. What type of equipment would they do it?
A. Now, what? How would —
Q. My question is, the first sign of processing, comminution, which is particle size reduction.
A. Uh-huh.
Q. How did the miners do that in the field, your experience, in the 1950s?
A. They really didn't do much to it, they — well, the ore would be blasted, or dug up, and

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would be all different sizes. But I, I don't, I don't think the miners really paid much attention to the sizes, the — the mill wouldn't want a great big wheel boulder, they wouldn't want to ship that. And they did break it up in the, in the — if it was hard sandstone, they would break it up into little, smaller pieces. But I don't think, because they knew it was going to crush it anyway, the miner really didn't pay much attention to the size, except they must have had an idea they couldn't have a great big boulder.
Q. And that was, I think you just gave the thing I was going to ask, which is: Is that a crusher one example of comminution, or particle reduction?
A. Well, I never saw a crusher at a mine.
Q. But if one did use a crusher, is that used for particle size reduction?
A. Yeah, that would be at the mill.
Q. Okay.
A. Or ore buying station.
Q. I wonder if you could walk through what what the miners typically did in developing a pit mine. When they first came out to the site, the very end when they were done mining.
A. Okay.

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Q. Did they start out staking claims?
A. Yeah. Now, I see what you — first of all, they'd, they'd either be on a claim or have permits, or they could have just got a drilling and they'd go out and drill. And, hopefully, if they found something on their wide-space drilling, they'd close in and drill it out and do development drilling. And engineers would take all this data, would, would figure out the depth and size of this ore body, and this ore body. And they'd analysis.

And then they would, after they got figured out, it would be economic, and look at stripping cost, what it would cost to remove the overburden. And this was usually done by a contractor, like West Cargo or SS Mullen, or — those were or let's see. Those were the two big ones. They'd get a contract and then they would strip, strip off overburden and get down to the ore.

And then the company would take and they would probably go out there and make surveys in the pit to see exactly if the ore bodies were calculated by the, before stripping were done. And then, and then they'd start with either a hammer, or something like that, and start mining out the

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hauling it up.

And after it got the area of the pit cleaned out, if there was any ore outside of the pit, they might think about going into adits, driving a drift into the pit wall out to get this ore.

But removing the overburden was usually done by a stripping contractor that specifically get paid so much a, so much a cubic yard to remove, and they'd figure out, the engineers would figure how many cubic yards of ore to base the contract on.

And once they got out the ore, it was really up to the company people to, using a Geiger counters, and that, to see where the ore was, and then, and then they'd, a little mine they'd use front end loaders, and in the big mine they'd have a big front end loader and load up dump trucks, however, to haul the ore out.

Most of the mines at Cameron were — were using small trucks to get the ore out of the pits. And then they'd take the ore and maybe dump it on the surface here until they got a bigger load to haul to the mill.

Q. So if I had shown up at one of sites in the 1950s, what, what typical features I would see? Would there be an active face of the pit —

A. Yeah.
Q. — where they were scooping?
A. Yeah, scooping it out and hauling for —
Q. And then would there be some type overburden or waste, rock pile?
A. Oh, the, the stripping from that would be dumped out to the side.
Q. And the average ratio, I think in Cameron, was about 13 feet to one foot of ore?
A. Yeah, in some of the deeper, yeah.
Q. So it was fairly common to see an overburden —
A. Quite a pile, yeah. Like in one of these pictures of mine you copied, the Jack Daniel, see all that white stuff laying around the pit? That's all the overburden they took off that pit. And then they — low grade material and waste rock hauled in another little pile, hoping that they could go up, or something, they could use it, or blend with higher grade material.
Q. And is it fair to say all of the surface strip mines in the Cameron had a waste rock pile?
A. Oh, absolutely, waste rock and overburden. Some of it got all mixed together

Q. And you mentioned holding low grade material and wondering if the price would change.
A. Yeah.
Q. So the AEC specified material had to be .1 or greater to be sent —
A. Tuba City Mill wanted stuff at .2. So they had maybe some .17 they might hold until they got some .13 and blend it together.
Q. What would happen if — I imagine towards the end of the life of a mine it would be possible that there's not enough high material to blend it up.
A. True.
Q. So you'd have a pile that's less, something lying than .2?
A. Uh-huh.
Q. And that would then be waste rock.
A. Waste rock. It would be called waste, but it would still be, have uranium minerals in it, it wouldn't be completely barren rock, I mean.
Q. And do you know why AEC set at Tuba City the —
A. No, at Tuba — it was — Rare Metals said their mill would work more efficiently if they keep their heads, the mill heads at .2. That's pretty

the mill. They didn't really have to — I think they really had to accept anything real low if they didn't want to, but that was, that was the end of the AEC pay scale. I mean pay schedule.
Q. So AEC would negotiate with the mill contractor some type of contract that would be the cutoff?
A. No, I think the cutoff was actually to the mill. If they didn't want to take low grade they didn't have to. AEC didn't make them, I-don't really don't know much about mill contracts. I know the miners at Cameron, like I said, they're all independent, like Blakemore, and some of those they, they said no, we can't, we can't even — they won't take anything about, below, 18 hundredth something like that. But the ore buying AEC, those buying stations, they took everything, very low point, .12, .10.
Q. Even at Tuba City?
A. I imagine the ore buying station at Tuba City did take the real low grade stuff, because it was an AEC ore buying station, not a Rare Metals. I just don't —
Q. And I've read about another type of mill that — or mill — another type of mine in the

the sense that some of these mines were largely petrified wood?
A. Yeah.
Q. And the so the majority, or a lot of material taken from a location where an anomaly detected, could have been petrified logs?
A. Well, yeah. They weren't really h petrified wood, they weren't, you know, hard. It had a lot of quartz in them, but they weren't solid quartz. A lot of carbonized material, and that. And, yeah, then they'd get a few logs, some would be so big, or maybe 12 inches in diameter, and they'd be broken up, maybe three feet long, and uranium — I don't mean pure uranium. But uranium, or a uranium material in it, because the mill had to replace the organic material that hadn't been petrified yet. Some logs — that was out. could find a log that would be completely fossilized, hard, petrified, and maybe a few feet away, the one that was almost all replaced by uranium, but it's carbonized, it was — and John said, you guys should tell us what happened. I don't know why it's what it's just the way nature is. One log would be petr solidified, and one won't, it will be carboniz
Q. So what would a, this type of min

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1 look like when the anomaly — there's an anomaly
2 detected, they go out to field, logs like exists
3 Is the only target of the mining these logs, or
4 A. Well, they, they — in some of the hills,
5 these little back lined hills were kind of filled
6 petrified wood, and some of them were mineralized, some
7 of them weren't. But the vast majority are —
8 Cameron that I saw were more bedded deposits on
9 carbonized — in these old river channels, a lot of
10 of organic debris, and that was in the sands. And
11 they'd be halos around these, all this organic material,
12 even sandstone, and make really a bed, not just a single
13 log, but a big halo around the log, or a patch
14 branches and trees — branches and leaves, things
15 like that. A lot of car — the carbonaceous material in
16 the sandstone was the precipitant. The organic material
17 was the major, in my opinion, was the major precipitant
18 of what I saw.
19 Q. We also discussed during the few days,
20 and again today, that — okay. And so I'd like to ask
21 you to go through, also to the extent you know the
22 typical features of an underground mine in the
23 1950s when you would visit those. What would be at
24 the mine site, at the mine features?
25 A. Well, these mines go in, not so much

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1 Ambrosia, but lake deep shafts, but the mines at the
2 Carrizos, they did in the Lukachukai and Nazlini
3 Valley — well, no, those were open pits, so that
4 anyway, it would be like a tunnel going in there and
5 would be a lot of timbering, like you see in the
6 Kerr-McGee report there that Wil Dare did, of lots of
7 timbering — well, first of all — well, I'm getting
8 ahead of myself. You have a lower level, which is
9 haulage level, they'd drive the haulage level there
10 and put a little train track in, and all that.
11 And then they'd get up above it, and
12 another — where the ore level was, and they'd be
13 mining that out and dropping it down an ore pass into
14 the, into the lower level to load the little train to
15 take out.
16 And there would be a big room there
17 called a stope, and there'd be another one there.
18 And it was just, like those maps showed, there was a
19 big area here mined out, one over here and one
20 here. And there would be a tunnel connecting and
21 crosscuts going out to these other ones, so.
22 And because of the soft sandstone, there'd
23 be a lot of timber used to prop up the, the roof, the
24 top of the mine. And they, the Navajo miners,
25 they'd cut that timber up in the Lukachukai, you,

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1 and bring it in the mine. And then, and pile it up
2 to keep the rocks from falling down, because, the —
3 but it wasn't like a coal mine, room and pillar and all
4 that. They'd mine here, mine here, and mine around,
5 and connect these all with little drifts and crosscuts
6 all around.
7 And they'd, the miners would, see in of
8 the mines they find the ore body here, they'd dig it
9 over and dump it down an ore path. And sometimes
10 they'd — if it was a big ore body over here, they'd have
11 a slusher, that's like a little bucket on a line, and
12 they'd be pulling the ore over and back, pulling the ore
13 over other and slushing the ore over and dropping it
14 down the ore path.
15 Q. Did these mines also create waste rock, or
16 how did that work?
17 A. What?
18 Q. In the case of an underground, would
19 the miner also have waste rock?
20 A. Oh, yeah, because when the — that land
21 would always have to be pulled — and most of the
22 reservation, underground mines, they'd — the seam might
23 only be two thick and they're mining six feet, you'd
24 have the upper waste rock. And it was common to haul
25 that out and dump it over the cliff.

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1 If it was a mined out part of the mine,
2 they'd put it back and backfill the mine that, but
3 wasn't as common as hauling it out and dumping over
4 the cliff.
5 So you always would — you never, you
6 never — rarely, I don't think I've ever seen a rock
7 ore in any of the mines on the Lukachukai, all that
8 waste rock above the ore had to be moved to get to the
9 ore.
10 And sometimes the miners would do what
11 double shooting. That means — which is unusual. So
12 you had two feet of ore here, or four or five, maybe
13 two feet of waste rock up here. Well, to get at
14 ore they'd have to blast all this out first to get this
15 out. So they'd have to blast this out, shovel the
16 muck that all out and dump it over the cliff. Then
17 go in here and mine the ore and put that in the train.
18 So that was called double shooting, and that was
19 expensive, but it had to be done to keep the ore from
20 being too diluted by the waste rock. If you put it
21 all together, it probably wouldn't make enough money,
22 wouldn't be economic.
23 Q. So was it your experience that at the
24 underground mines on the Navajo Nation, back in the w
25 rock —

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A. Oh, yeah.
Q. — generation? And did that waste rock do you know whether that waste rock contained some radioactivity?
A. Oh, I'm sure it did, because uranium doesn't have a good cutoff between zero uranium and the hydra — and uranium ore, there's kind of a deal — and then the — and the Navajo miners got good at using their eyeballs to determine what should be and what shouldn't be.
Q. So is it fair to say that whether it's surface or an underground mine, you necessarily generated some form of waste product?
A. Oh, yeah. And Barro Mines tailings, I've seen, for every — not down on the assay, but I think around certain mines of Union Carbide and Uravan, that for — what was it. In a big Carbide mine, for every ton of ore they got three of waste rock, or something like that. They made stacks of this. And it wasn't just one to one, it's more than that, because they always had — if it was so thin, you had more waste than you did ore.
Q. And that was — the waste, just as you described —
A. Would go out —

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Q. — it always contained uranium —
A. Yeah.
Q. — and radioactivity, just a lower typically?
A. Yeah, it would be very — maybe you had a pod here and a pod over here, and you had to go over to get it, that might be a hundred yards of almost barren rock in between. But a, but that would be very rare to have it completely barren uranium.
When the price went up in the '70s, I know at Union Carbide mines there at Uravan, we went out and did dumpology. They went out and surveyed of some of these mine dumps and actually hired people picking over mine dumps because the stuff was price went way up, so anything that was thrown away shipped to Uravan. That was dumpology for years.
Q. So last time we got together we w through the O'Rear report, and we covered a fe activities that I think you told us also would involve some type of waste rock or material wi uranium. So for instance, when AEC performed drilling, whether by core or rotary or drilling, there would often be material with uranium present; is that righ
A. Yeah.

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Q. And if AEC would rim strip, that w involve —
A. Yeah.
Q. — generation of waste rock.
A. Like all this — all that material we did out in the sand flats at, at the northwe Carrizos, you know, we might drill a hundred there might be two feet of uranium — there might be pod. And the drilling companies would collect samples of rock chips and lay them out on for us. And I know that the gamma ray logs would all barren rock, it would show some weakly mineralized rock in the ore zone. But all those little that weekly mineralized zone we laid on the gr probably still there today. But it's all been covered over by sheep and cattle and knocked over, and all that.
Q. And where rim stripping occurred
A. The same thing. Yeah, they'd strip it, I'm sure all that old, well-oxidized weathered on the surface got pushed off to the side so you get a good face of what was in the hillside.
Q. And I'm not sure we covered this time, but to the extent after rim stripping, AEC or Walker-Lybarger used a bulldozer to blaze the

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drill pads, would that also have moved around with uranium?
A. Yeah, if it was rim stripping, the probably wouldn't be any drilling nearby, I know the, the AEC drilling contractors would, level area out, smooth out all the hills, push the away for drill pad. That was all very common in the Carrizos.
Q. And given all the activities in that were generating material with uranium, is possible that those —
A. The drill loads wouldn't be that would be overburden. On Tin Cup Mesa where in the east Carrizos where we did a lot of drilling, here's a big mesa, and VCA had mines all edge, and so the AEC said, well, we'll just drill it on this mesa. And they found a lot on Eugene Topahonsa's mining permit. And all those drill roads put on that mesa top knocking sagebrush, and all that, never touched any because it was, the ore was at about a hundred they had a hundred feet of barren rock to get to the ore, so. So those drill roads, didn't do anything but just push some sagebrush around.

Q. So a minute ago we talked about, y
thought you remembered at the buying stati AEC
not have accepted ore below .1 percent.
A. Uh-huh.
Q. And so was it your experience that
operator, at that time, in the '50s, if they found
ore below .1, or ran out of ore that was higher
what was left was at .1 or less, what would the
would they just leave it at the site?
A. Yeah, usually. You know, I remember
Doug — Globe Air, Globe Air, Globe Arizona buying
station, a man over in Yuma County, Arizona. He had
ore in there, and they assayed it and said it
would only go .03. And he came back with trucks and
hauled back to Yuma because he thought it was a
the government to steal it from him. And in other
cases they'd just leave it there, and when AEC sold
the stockpile, somebody took it, you know.
Q. I think you mentioned —
A. And then the AEC had to go reclaim
all these ore buying stations that weren't tied to
mills, like the one at Globe and the one at White
Canyon, and they had to take all that contaminated
where the ore had been stockpiled and get it out and
all that. So the AEC did reclaim their ore buying

stations not connected with mills.
Q. I think you mentioned last time we
together that some of the operators would use G
counters on the fresh face or the piles to gauge
whether they were above or below .1?
A. Uh-huh.
Q. Is that right?
A. That's right.
Q. And so if an operator was taking that
approach, at some point they would realize the pile
was below .1.
A. Uh-huh.
Q. And was it your experience that these
of operators would then just leave piles of stuff?
A. Yeah, they'd leave piles thinking it
was, they thought they could blend it with high
later. But usually it's just left there.
Q. Can you walk me through how the source
material licenses worked? Do you know much about that
program?
A. I know that you had to get a lease to
apply for source materials license to AEC in
headquarters, in Washington DC and you got a P,
and that P stand for prospector, I think. You could
not sell ore to a mill or an ore buying station unless

you had a P number.
And I know Kerr-McGee would work the
Navajos, the independent Navajos to do the work
to get P numbers for them. And on the mill tract,
that is a piece of paper that the mill submitted AEC
every month showing who shipped, who was shipping
to pay for it, and the name after of the state, and
county, and all that. And they had to have a number
in there. And they would not accept unless it
didn't have a P number.
And, and I've seen something in a suit I
was involved in once where, up in Wyoming, I think it
was, that this letter they got from the AEC Division of
Licensing in Washington DC listed the guy's name and
listed all the claims, the names of his claims he
was — that the P number covered. But that's —
and it would say, you know, this claim number in this
area and this area and this area. So, so that all
done by Washington DC.
And in these little books the AEC and
USGS had put out, Prospecting in the County, or
something like that, there's a little chapter there,
this is where you apply to get a P number. There
were — and one time I saw a list of maybe ten, the 200
P numbers, who they were issued to. But I'm there

were thousands of P numbers issued.
Q. And —
A. And I was told that you, legally, could
not remove uranium bearing materials from the mine
to take a shovel and put it in a wheelbarrow without a P
number.
Q. Was it your understanding that because
the United States was the only purchaser?
A. Yeah. Or it strategic material and
controlled with all the secrecy and the Cold War and
all that. I —
Q. So in order to know that the government was
getting every ounce of uranium, someone had to be
from the time it was generated until it was sold?
A. Yeah, uh-huh. But then, that was
along the line they, they went away with the P's, and I've
been told by someone. I guess that's when Nuclear
Regulatory took over from the AEC — when AEC was
abolished into the Nuclear Regulatory Commission and
ERDA, that's when they did away with P numbers. I've
been told, something like that, because the mines
that came on, come on later in the program, the
AEC, didn't have to have P numbers.
Q. Were you aware of anyone having a request
for a P number denied?

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A. Oh, I don't know anything about th
Q. And —
A. You didn't have to produce ore, that was, that was what promoters used to use. They'd a P number for a bunch of claims in San Juan, and they'd say — and they'd try to get money get we P number in these claims out here, we need some in our company. The P numbers were used for th purpose, I know. I've been told that, I didn't get involved.
Q. What was your understanding of at what point in time, from when ore was first dug out of the ground until it was sent to the mill, at what point in that process was it your understanding that the government would claim it had an interest in that uranium?
A. With the P number you're licensed it. They really didn't have an interest, I don't think, until it got to the mill and was sampled, weighed and processed, and all that, and a value established. I, I, I, I really don't know what's right.
Q. I've seen ore purchase agreements, and contracts that have a clause that says something like, operator may not dispose of any uranium herein

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material, except for shipment to the mill for processing —
A. Oh, really.
Q. — without prior AEC approval. Have you heard of that term or seen that term?
A. No, I never saw any ore purchase agreement. I know they existed, especially with the independent miners. I know Rare Metals probably had them, all the, all that Cameron stuff, and all that. I, I have never seen one.
Q. And did you have an understanding, in, in some of the milling contracts, AEC would specify that the milling contractor would have to accept ore from certain mines?
A. Uh-huh, I've been told that there certain mines — well, that was under the allocation program, I think, when, when a company would have a mill to sell the, to sell so much ore, they were required to take it. Because allocations were related to mills.
Q. Was that helpful to the, the mining company investing in further mining and shipping to mill?
A. Uh-huh, yeah.
Q. They wanted —
A. If you had an allocation, they knew and they knew they had a market for ore from certain

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time. But that was an independent.
Q. You mentioned that in certain instances the Federal Bureau of Mines would inspect a mine site.
A. Uh-huh.
Q. I can't recall if you told us where records of inspection might be located.
A. I've been told they all, they all think they — I think — well, in Arizona, when USGS Conservation Division was abolished — well, with the, that was the royalty inspection records. Because there was a group in the USGS that I talked to that came out of Roswell, and they acted as an agent for the BIA, Bureau of Indian Affairs, and they'd go to the mine and then look at the shipping record and then make a report. The amount of uranium produced was commensurate with the extent of the mine workings, or something like that. And that was all USGS Conservation Division. And when that was abolished, all those records, where, went to, in Arizona went to the BIM office in Phoenix.
Now, where the federal records before went, the mine inspectors that worked on conservation were, were with the Department of Bureau of Mines, Interior Department out of Denver, I, I remember where those records went. They might have gone to the Labor Department under who knows.

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But I know the royalty inspection records did go to the BIM office in Phoenix, because I seen some of them. There is when they, when they'd say, well, last month the company shipped this, and they looked at the mine maps, and said, oh, there ore came out of here and it looks okay. And kind of rubber stamping to assure the BIA nobody was not paying their share of the royalty.
Q. I think I heard you mention that the AEC never gave instruction on where waste should go, the Federal Bureau of Mines may have?
A. Oh, yeah, they might have.
Q. And what kinds of issues would they look to if they were to communicate with an operator?
A. They'd — they were mostly fire — federal inspectors were real, would be safety, health and safety, you know, about powder, how was taken, and if the ventilation was proper, the rock support was proper, and all that. And they wanted to keep the mine site pretty clean, all that, so nobody would trip over rocks, and things they would tell, the mine inspector would, he'd say, you've got to keep throwing the rocks over the cliff and keep it all clean, or something, around here, but I never saw in those reports, but I'm sure they did do

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that. Or they got to keep the railroad tracks so the train would —

Q. And you mentioned that —

A. Now, the tribal mine inspectors have had more say-so on where the waste rock was, or something. I don't know.

Q. I think you mentioned there was policy for the AEC lease blocks with regard to reclamation, is that right?

A. That's right.

Q. Was it a written policy or a verbal policy?

A. Well, it must have been written because after some of those mines closed, there was some reclamation done. The early mining was got to be as it is today on the lease block. But — because when the first leasing program, and some of those never re-opened again. And I'm, I'm — I don't know if the — I know the reclamation was done, but I don't know if it was done by the former operator or if it didn't. I don't really know that much about the leasing program.

Q. The last time we got together you mentioned that you were aware of instances where a lot of mining, someone from Navajo Mining, perhaps the Bureau of Mines, and maybe AEC, would make a site.

A. Yeah. Yeah, I, I read a report at one time

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that VCA was closing one of those mines in Arizona, and there was a report and it had a company representative, a USGS representative for the Navajo tribal mine inspector department checker, they all went out and talked about reclamation, and they all signed off on it. I saw a report like in the BLM records in Phoenix, the records at the BLM in Phoenix. And so —

Q. Do you recall roughly the year that report might have been written? Was it in the '50s or

A. Oh, probably in the '60s..

Q. '60s. And —

A. But they were — but all they, as I remember reading this report, was to put barbed wire across the portal of the mine to keep out stable people. And I'm sure that barbed wire lasted, oh, a week or two.

Q. And even though the, as it relates to the lease block lands, the, if there was a written policy it would apply, do you have an understanding of what that policy, even though it didn't technically apply to non-lease block lands, it might have been followed by people?

A. No, I really didn't know.

Q. Did it set like an industry standard

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A. No. No, during the uranium boom there was really no, not though to reclamation. You, you know, go out and validate a claim like in a bulldozer, you know, say that's a discovery pit. Those were not filled in. There's still a bunch of those around, some of the lands that have never been reclaimed.

Q. Would the AEC policy, if you remember, have addressed putting barbed wire around —

A. No, they, from what I know, only bought the uranium and never had any consideration of reclamation. Just like on the milling that had to be done later, you know, there was no thought, you know, AEC contract with the mill of any reclamation of the tailings after the mill closed. So through the uranium boom, who ever heard of reclamation.

Q. If there was a written policy on reclamation for lease block lands, where would we find a copy today, do you think?

A. It would be in — down at the BLM. They have records on every lease block they've leased, and I assume it would be there, but I don't know, because I never got involved that much in the leasing program. But I know that the, the government — the AEC on Cove Mesa, which they turned back to the tribe, there was nothing about reclamation there, because it —

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it went right back to the Navajos and they kept on it. And then the — and now the Navajo AML cleaned up all that on that lease block.

Q. Do you have an understanding of what price per ton of ore that AEC would pay a contracting mill company was set? If it was $8 a ton, for example, what went into that $8?

A. Well, that, that, that — every lease and it's own contract. And you look in the Kenneth McGinley Report, it will take each mill, and that contract varied from $13 had down to $7 a ton. Because they, they negotiate with each mill based on their technology and ore supply and so on in — we had, the AEC had auditors and people to audit mills so they would get a fair price for uranium and still make a little profit. We were always negotiating the mill contracts, and I stand it, to get a better price for the government.

And some, and some of the contracts, like that one at Salt Lake City, I think $15 a pound. And the early at Uravan might have been $12 a pound. But eventually the one at Uravan down to the $8 range.

Q. Are you aware that the AEC, actually let's see. The AEC, as I recall, the AEC taken the

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1 mill at Monticello for a while.
2 A. Yeah, that was test site. Jim Rand
3 D mill, really.
4 Q. And a mine at Slick Rock for a while
5 you aware of that?
6 A. No, they didn't have —
7 Q. The AEC for a few months operated in
8 Slick Rock.
9 A. Huh-uh. We had a lease block there,
10 but they never — they owned a mill, but sold it to
11 Union Carbide. The inherited a mill down at Rock
12 from the Manhattan Project that bought it then
13 sold it to Union Carbide, and Union Carbide ran to
14 down, or something. Anyway, that's all in the
15 Albrethsen McGinley Report.
16 Q. We'll come back with some more tests.
17 But you mentioned AEC wanted to get a good pri
18 A. Yeah, they wanted — yeah, he company
19 make a fair profit, is what I've read in of this.
20 Q. So if the company proposed a high price
21 that was too high, AEC would come back with a
22 lower?
23 A. Oh, they negotiated, I don't know they
24 do it, but it —
25 Q. Do you know whether —

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1 A. But the, the AEC pay, was to pay $6 a
2 ton for the first hundred miles. And so they w
3 always in — the engineers were always going to
4 measuring the most direct route to a mill or mine
5 that looked like it was over a hundred miles.
6 Q. And do you know whether AEC negotiated
7 wages? In other words —
8 A. No.
9 Q. You don't?
10 A. I don't know.
11 Q. Okay. I read somewhere that — was it
12 Lt. Col. Leahy?
13 A. No, he was only a 2nd Lt.
14 Q. Second, okay, 2nd Lt. When he gave a
15 presentation in 1993 —
16 A. Uh-huh.
17 Q. — he was video taped?
18 A. Yeah.
19 Q. You're aware he was video taped?
20 A. Oh, yeah.
21 Q. And do you know where I might find a copy
22 of that video tape?
23 A. I have a copy that DOE, the DOE.
24 The DOE library down there has a copy. The Mf
25 Western Colorado may even have a copy. It's very

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1 high quality copy because people are coughing a
2 walking in front of the camera. And it's old, too b
3 because that's the best historic information we have on
4 the site down there.
5 Q. Was he the only one video taped?
6 A. Yeah. He came here for one of our
7 celebrations of, of the site, maybe 25 years, no,
8 I don't know what it was. But — and his family
9 here, and he made a presentation. It was a fascinati
10 what he told about coming here and not knowing he
11 was going to do and being handed an envelope and
12 said get a hold of Brother Burwell of US Vitro, he'll
13 tell you what to do.
14 Q. Could we get a copy of the video from you?
15 Do you think that DOE's copy is better than your —
16 A. No, it's all, it's all pretty. I didn't
17 think you have any objection if he borrows it from you?
18 Because other people have borrowed. And law firms
19 have borrowed it.
20 Q. If I was to go about writing a history of
21 the San Mateo Mine, how would you recommend I do
22 that? What, what original source documents I want
23 to go to try find?
24 A. Well, I'd say, if I was going into,
25 I'd — let's see if it was a certified property, because

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1 these certification ports are really the history.
2 Other than that, I don't know, I don't know who
3 would do it, because, because the certification report
4 will have a paper trail of how El Paso claimed
5 property, how they discovered the ore body, and
6 that.
7 Q. Did —
8 A. But you have to be certified. It may
9 be — it may have produced its ore after the
10 certification. You gotta — you had to actually make
11 an ore shipment to even qualify it, and — the ir
12 first ore shipment might have been too late to qualify.
13 As you know, these certification reports are at the
14 National Archives in Bloomfield, Colorado.
15 Q. I think you mentioned Ingalls Gaye of
16 the mining engineers who worked —
17 A. Yeah.
18 Q. — the San Mateo?
19 A. No, he was an AEC engineer in the head of
20 the Grants office. And he, he had good relationships
21 with all the companies in the Ambrosia Lake area and he
22 kept notes on what he learned from the companies in his
23 calendar. And then when he retired from AEC he went
24 back to living, live his life, live out his life in
25 Butte, Montana, one of the main — somebody in

1 Grants office said, well, gee, we can't throw h
2 calendar away, that's a lot of mining history.
3 So they gave his calendars to a guy
4 named Ray Holmquist, and he put together a summary of
5 each big mine in the Grants Mineral Belt, in formal
6 Mr. Gay's calendar. And somehow the industry h
7 about this report, and they filed for a —
8 And I was given the job of taking
9 Holmquist's report and deleting any company confidential
10 information about cost data, or when he this say
11 company says our company is full of, chasing
12 anything that was not just down and out, his and I
13 had to delete this out of the report. And it got
14 open filed.
15 And it's — was given a number and released
16 to the public, I can't remember when, but RME 172,
17 and that's Raw Materials — that's an AEC number,
18 Raw Materials Exploration Report 172. And in the
19 libraries all around the country. Should be even the
20 National Archives. But I know I have and they've
21 loaned it to many people because they say, we
22 can't find it within the USGS over in Denver.
23 Q. I think you answered last time you
24 once consulted on a small issue having to do the
25 National Forest somewhere, I can't remember exactly

1 now, but to the extent San Mateo was on National Forest,
2 would the Forest have weighed in at all on mining or
3 reclamation issues?
4 A. I don't know. I don't know I know,
5 the only information I even know about the San
6 report is in, is in the RME 172. There's a summary
7 there that's a summary of Mr. Gay's notes on San
8 Mateo; when the shaft was started, who the contractor
9 was, the problems they had, when the first ore was
10 shipped, and something like that. It's just early
11 history of the mine.
12 Q. I noticed on the circular 6 location
13 forms, I think it was, there was mention of IBM form,
14 or an IBM data base of some kind. Was the information
15 back at that time put in through IBM form or punch
16 cards or —
17 A. Yeah, they punched them — our or
18 production records and the mill production records were
19 all put on punch cards, and eventually that was
20 transcribed onto one computer system, and then there
21 production was put on what we called the shoe box
22 collection.
23 And these sheets that we looked at as an
24 exhibit, that was the first time the punch cards were
25 ever put, were ever put in a computer. These sheets

1 sheets we looked at earlier this morning.
2 Q. Do you know if that data, computer
3 base still exists today in some form?
4 A. No it went, it went back to — they,
5 I've been told that when they converted the data to
6 what we call the shoe box collection, they destroyed all
7 that other, they destroyed all that computer stuff. But
8 they did save these big sheets we have. So the Feds
9 and DOE has them. Because they developed this
10 system of coding, and every, every mine had a,
11 every company had a code. Mines were coded by state and
12 county, as well as location. So if you wanted to say I
13 want to know all the mines, all the production came
14 out of Coconino County, you could put that in
15 computer and print it out, but I don't think it
16 worked. Because I've never heard of anything like that,
17 but — they were trying to figure out, they say we
18 want to print out all the Kerr-McGee production, put
19 in the Kerr-McGee number, and it all come out. And I
20 don't know if it works or not, because there's
21 Q. Were you aware whether AEC assessed
22 liquidated damages to a mining company which for
23 off spec ore that was too low grade?
24 A. No, I don't think — the only liquidated
25 damages I've ever heard of in the AEC contract, was

1 on the drilling contracts that said, you know, had
2 to — if you didn't — if your contract said you would
3 drill ten-day periods and you didn't show up, you'd
4 liquidate your damages for the day they didn't show up,
5 and things like that. But that was only drilling
6 contracts. Because I know we had a big snowstorm
7 the drillers couldn't get back from town, and we were
8 going to charge them liquidated damages, and you said,
9 no, we couldn't get back because of the snowstorm so
10 they didn't charge them or something.
11 Q. The last time we got together you mentioned
12 a few instances of people who had received deferments
13 as an incentive to come work for AEC?
14 A. Uh-huh.
15 Q. Can you remind me —
16 A. Not 4F. They, they were — weren't
17 4F, they, they were deferments because they were,
18 because of working on security. National security,
19 what it was. When I was in graduate school, I got
20 out of graduate school, the AEC said, will you come to
21 work for us? We'll keep you out of the Korean War. And
22 then, then we, we had a chairman of the Atomic Energy,
23 Levi Strauss, or something like that, he said the federal
24 government should not stand between a man's ability
25 to his country, and they didn't give those many

And couple of my buddies got drafted.
Q. So that was an important incentive
A. Yeah.
Q. — help develop —
A. And to get people —
Q. Can you explain to me, or remind me the importance of the security clearances, the L and the Q clearance? How was that important to the domestic uranium program?
A. Well, you had — to work for AEC back then you had to have a Q clearance. So you had to fill out a form. The FBI would send investigators around and investigate you and your neighbors and all that. The L clearance is what I had when I went to Walker-Lybarger, and I don't know what it was for. But even, even the mill workers in the early days that worked in the mill producing yellow cake, have a clearance of some kind. Because I've seen in the files that AEC would send to the milling companies have their employees fill this out to get a clearance.
Q. Was that important to protect the information the —
A. Yeah.
Q. — AEC was sending to milling companies, or —

A. Yeah, they would send it to the milling companies because they were producing yellow cake, you know, the end product, and they didn't want to, any telling, well, we're, we're producing five drums yellow cake a day, or something like that.
Q. What about, did AEC ever convey things to the milling companies that was security?
A. No, I know that the employees had to fill out questionnaires for some kind of clearance.
Q. Okay. You mentioned the last time got together that when the mills were finally produced, the AEC would sell ore piles in the ore stockpile to, to a mill on a competitive bid.
A. Yeah, they asked them — they gave some specs, I guess, on what they had, and how much in stockpiles, and they'd ask, well, who will pay it — who wants to buy this and what price.
Q. Do you know whether AEC made a profit on that?
A. Probably not. I mean, if they $3 a pound, I doubt — some of the strange looking they got at the Globe ore buying station were valuable.
Q. They were recovering their costs?
A. Yeah. They tried to recover costs, but I can't tell you if they made any money.

Q. You made a comment when we got together last when you were describing the evolution of AEC into ERDA that Congress, or somebody said the AEC had regulators and producers, or something like that.
A. Something like that.
Q. And they broke AEC into the ERDA and Nuclear Regulatory Commission.
A. Uh-huh.
Q. Can you explain to me what you mean, can't be regulators and producers?
A. Well, I don't know, that was what — that was some of the logic we heard about why they doing this.
Q. How are you using those two words "regulators" and "producers", what did they mean when you said it?
A. I, I don't know.
Q. How was AEC being a regulator and producer?
A. Because they were, they were visiting the mills, and all that, as well as, as producing ore that went in the mills. And so they thought the agency really ought to oversee the people, and that that were producing it, or something.
Q. Okay.

A. Somehow that was what was talked with what the news media came up with why they did it.
CHRISTOPHER J. NEUMANN: Why we take a break to change the tape.
JOHN DENNIS DUNN: This time approximately 3:18. This is the end of tape 5 in the deposition of Mr. Chenoweth. We're going off the record to change tapes.
(A recess was taken from 3:18 p.m. until 3:29 p.m.)
JOHN DENNIS DUNN: This time approximately 3:29. This is the beginning of tape number 6 in the deposition of Mr. Williams. We're on the record.
Q. Bill, I'd like to go through a few documents, and I've given you a binder.
A. All right.
Q. It starts at Exhibit 170. And I'd like to ask you to take a look and tell me if this doc looks familiar to you?
A. 176.
Q. The ones at the bottom there.
A. 176?
Q. 170.
A. Oh, I see, the beginning one down

Q. Yeah.
A. It looks like an AEC report that the library. Yeah, that looks like a USGS monthly.
Q. So —
A. I've probably seen these, but I think I've read them. I know there's a whole lot of them in the library at the, at the Colorado Mesa University.
Q. And if you look at page, let's see 38.
A. 38. Okay.
Q. Yeah, on the bottom right. At first, in accordance with the oral request of Lt. Col. Page we are initiating a series of monthly reports covering the activities of the Geological Survey in connection to the AEC.
A. Uh-huh.
Q. What was your understanding of what, you say you've seen reports like this?
A. Yeah, I remember, they used to come down library down at the Grand Junction site and they bundled them all up and sent them up to the College at that time Mesa State College.
Q. Were they monthly reports?
A. Yeah, there's a monthly report from January '47. And this Lt. Col. Page was not, to my knowledge, is not a — he was not here. I don't know if in

headquarters or not, but that name's not familiar unless he's a holdover from the old Manhattan Project. But being in January of '47, that would be the month the AEC came in existence. I would think he's a holdover from the Manhattan Engineer District.
Q. And what was your understanding of the purpose of these reports?
A. Because the AEC was just getting going and the USGS had been out studying vanadium mining here on the Colorado Plateau, and other places. This was probably before the AEC really got organized, asked the USGS to, to continue investigations, like, the raw materials beryllium and other things. Must be more interested in beryllium than uranium I don't know.
Q. Did the AEC continue these monthly reports?
A. Yeah, the USGS made monthly reports, I think, until the contract was finalized in 1956, or something. And if there are any reports, it would be — I see this was up — this was in the State College library, so. There were all down at the site and we transferred them up there.
Q. Was the audience for these reports people in Washington DC?
A. Oh, yeah, there should be a distribution

list on these someplace. I don't see one.
Q. Why would people in Washington for AEC want these reports?
A. Because they weren't really established here yet. The Division of Raw Materials hadn't even been formed yet, so they didn't just have a program to drop, they wanted the USGS to continue some of their investigations on radioactive ores, is my guess. I, I really can't answer.
Q. You mentioned these reports continued monthly —
A. Yeah.
Q. — through 1956.
A. Something like that.
Q. And what would AEC in Washington do with this information when they received it?
A. I don't know, they probably would look and see what USGS was spending their money for.
Q. Would —
A. But this must have been a copy for the Grand Junction staff here, or it doesn't, but in January, 1947 they hadn't even established office. I think they were still down town where the Manhattan Project office was. I don't know. Before my time here.
Q. Do you know whether people in AEC in Washington were making decisions about the subject of the report, like field investigations?
A. Well, Jesse Jack — Jesse Johnson was the head of the Division of Raw Materials, and what this office reported to him. And his assistant Bob Ninenger, who was an officer of the Manhattan Project that came to be Jesse's assistant. And he was in contact with Washington. And he used to come here, we'd take him on field trip around, and all that so did, so did Jesse, but — I think this was just in — January 47 had to be in the beginning of the AEC and, and there wasn't anything going on by then. I mean, there were people, but I don't know.
Q. How — when AEC would decide to do a rim strip or, you know, do some geologic investigation, how would that decision be made? Was it made in Grand Junction, or in DC?
A. Probably by a local here, but it might have approved — because the Union Mines, the Manhattan Project's civilian contractor had made requests to drill all over the Colorado Plateau and MED people said no, that's beyond our scope right. So all this exploration information the Union Mines developed was turned over to the AEC. And that project I worked on Cove Mesa was, was started

1 the Union Mines' people, but. So somebody
2 again, probably was in Washington, was la
3 kind of information and let the USGS awar
4 contractors. I really don't know.
5 Q. Okay. Let's look at the exhibit,
6 A. Another report from Mesa College.
7 Q. This one is only two pages.
8 A. This is February '47. Yeah, there
9 Oh, ho, ho. No, this is declassified by
10 in '59. So this was all kept — Col. John —
11 Q. Would this report be distributed
12 who were either mining or milling?
13 A. No, no, it — I'm sure — I don't
14 here, but it was — it must have been classifi
15 because here's, here's the declassification
16 here.
17 Q. But to the extent mining or milli
18 companies —
19 A. No, nobody would see it.
20 Q. If they had a security they would have
21 gotten it?
22 A. No, I'm sure that in these days it
23 was probably still marked secret. Yeah, it's like
24 somebody has pasted over on this, on page 8043. It's
25 like somebody has pasted over a stamp, I'd bet

1 said secret under that stamp there. Under that
2 label looks like it's been pasted over.
3 Q. What do you think was secret, have
4 been secret about it?
5 A. Well, here, everything in the Manh
6 project was secret, and it was a transition to
7 civilian agency, and they probably hadn't got to
8 saying what the public could see.
9 Q. Let's look at —
10 A. That's just a guess.
11 Q. Let's look at 172. Does this look
12 another monthly report?
13 A. Another one of these from, a month of
14 '47. Declassified in '59.
15 Q. And even at this early stage, reading
16 the report, it looks like AEC through USGS is
17 field work in —
18 A. Yeah, the — yeah, it says, — gosh,
19 here it looks like they're, they're studying the
20 sands of Emery County and the phosphates in Utah for
21 future.
22 Q. All right.
23 A. Yeah.
24 Q. Let's look at 173.
25 A. 173. Oh, yeah, another one.

1 Q. Do you have any idea why these reports
2 might have been declassified in 1959?
3 A. Probably at headquarters, obviously
4 because they weren't declassified out here. I don't
5 think we were even set up to declassify. In '59,
6 yeah, we had, we would have here. I would imagine
7 somebody back in DC made a decision, well, there's
8 nothing really secret in these. There's no about
9 uranium tonnage, or anything like that, or uranium
10 production, so.
11 Q. Okay. Let's look at 174.
12 A. Oh, here we're getting detail. We're
13 talking about geologic studies on the Colorado Plateau.
14 Exploration on the Colorado Plateau in July of '47.
15 By then the AEC out here might have been — Kelly
16 came back, he retired from the Army, and he came back to
17 be the first manager, and he was getting something
18 organized, I think, by July.
19 Q. That was why I put these in order.
20 Does it surprise you, this is before you, but were
21 you familiar with this history, that they were
22 moving this quickly to go from a two-page report
23 A. Yeah, I forget, when he came back — how
24 he retired from the Army and came back, I forget the
25 exact date that he appeared back here, and started

1 really organizing and hiring people. And he had lot
2 of these Manhattan district people and they went to work
3 for the AEC right away, so. But here in July of '47 it
4 looks like they're really getting going. Yeah, they are
5 really getting going with an exploration program for the
6 AEC. It says make a reconnaissance.
7 Q. Can you look at page 8064?
8 A. 64?
9 Q. 64, yeah.
10 A. Oh, yeah.
11 Q. And in the first paragraph there's mention
12 that problems relating to exploration are being
13 discussed between Washington staff and, I'd assume,
14 local USGS staff. Was that a common occurrence?
15 A. I'm sure it was, yeah, it's getting
16 going because the A — yeah.
17 Q. And then the next paragraph —
18 A. Definite plans.
19 Q. Right. Definite plans for prompt
20 determination of ownership of lands where it would
21 be desirable, and determinations of policy with respect
22 to entry —
23 A. I'm sure the AEC says let's get going and
24 continue this exploration and find some uranium,
25 something.

Q. So how — let's focus on the tests on the Navajo Nation. Did AEC have some kind of permit, license or right to come on and do these tests?

A. I think some of those papers we looked at earlier, those old papers, there is some information between Window Rock and Grand Junction, but that's as early as '47. They're more in the — but the first, the first drilling the AEC did on the reservation was done by the USGS in about 1951. And at that time they asked Window Rock to withdraw 71 square miles in the northwestern Carrizo area for the USGS to do. And that was prior to the AEC having any staff there to do anything.

Q. What's your understanding of what the "withdraw" means in that context?

A. Well, this paper, this — I've got a copy of this original order that US — that the AEC was a press release that USGS, the USGS put out that they were going to drill down on the reservation in this area withdrawn by the Tribal Council. I mean, you could get a lease or a mining permit in this area. That means that nobody could go in there and stake a claim, in other words, because there's a drill rig in the Carrizos or other areas where you were actually drilling

projects, did you have to go to the Navajo Nation to seek some additional permission?

A. I think they had a blanket permission, some of the stuff that we looked at earlier. Some of these — a lot of these sheets I picked up, you know, over the, my career at Window Rock, there's nothing about granting the AEC permission to do geological reconnaissance. They could do drill roads but couldn't build air strips and things like that. This is in the very beginning, this is when AEC was in its infancy and it just didn't — the USGS actually continuing on the work, the exploration.

Q. All right. Let's look at 175. Are you familiar with this document?

A. Oh, no, this was a — this was made by, up in DC, I don't think — I've never seen this. I probably have a copy of that, used to have a copy of that out here, because they had a notebook of AEC press releases, and that all went with the National Archives, I know. This is, this is, apparently a major address by Mr. Johnson about the AEC program that we're just starting up.

Q. And I have a question on page 88.

A. 88.

Q. Yeah. In that third full paragraph, there's

a discussion of a vanadium program, and I understand it right, that —

A. On page 88?

Q. Right.

A. Third paragraph.

Q. During the early part of the war —

A. Uh-huh.

Q. It seems to say that when the government removed the incentives from vanadium, the uranium mining all ceased.

A. In 1944. That was the Metals Reserve Program where they needed — had a premium price for vanadium the government bought for their pile, stockpile because they needed vanadium to harden steel for the war effort. Then when they got a big stockpile, I think it was six million pounds, like it says, the program discontinued. And boy the production activity on the Colorado Plateau went to almost zero in 1947.

Q. So without the government incentive program —

A. Without any incentive for uranium.

Q. — the industry continued survey?

A. Uh-huh. Like it says here, Yeah, that's — the fifth would have to pass, I think was Uravan.

Q. And how about, I've got a question, page 92, now. And the last paragraph. There's some discussion of the —

A. Oh, process of mills.

Q. Yeah. Importance of setting a price to incentivize small —

A. Boy, this is really a major sales job to the public, really, trying to get people out trying to announce what he was going to do, in opinion.

Q. And the, this particular part, setting the price and incentives was important to getting the small operators involved in the program?

A. Yeah, uh-huh. Oh, yeah, this is interesting. Yeah. Where did you find this?

Q. What do you think is interesting about what you were reading?

A. Oh, yeah. Yeah.

Q. Just the history is interesting?

A. Yeah, the history is interesting. You hear about all this stuff about what they were doing.

Q. All right. Let's look at 176.

A. 176. I don't know if I've got — that's — if this letter is in that pile of notes I collected over the years or not, but it's — Ethy

things like this before.
Q. What does this appear to be, to you?
A. Giving the AEC permission to perform geological investigations and exploration and the discovery of uranium ores on, on any part of the Navajo Indian Reservation for addition — it's a lease permit. Uh-huh. Yeah. Yeah, I've seen things like this for — maybe, I maybe didn't see this in the past, but I'm familiar with it.
Q. Let's look at 177, briefly.
A. I think — yeah, I think this is, is something I've collected in the past. These are all familiar, Harper, Fister, Mr. Tso, Frank Tso. Yeah, I've seen this.
Q. On page 96, at the end of that full paragraph there's mention, consider a mining license, or certain land that might be covered by permit. I take it you don't have much of an understanding of the particular details of the authorization?
A. No.
Q. Okay. All right. Let's try 178.
A. These are reports I've seen a lot of. This is February of '53, and it's a monthly report of what the USGS was doing for the AEC out in the

Colorado Plateau.
Q. Okay, if you look on page 103.
A. Uh-huh.
Q. The section on the Colorado Plateau written by Mr. Stager?
A. Stager, yeah.
Q. Did you know him?
A. No.
Q. And there's mention in the —
A. The drilling footage, how many they drilled, and all that. This is the drilling at Uravan. Because that's where they — because USGS had been studying the vanadium deposits in Uravan for years. That was the logical place for them to go in and look for more deposits containing uranium.
Q. So these reports just summarize the activities of AEC?
A. Yeah, that they were doing in for that one month. And, yeah, they put out reports every month. And there used to be a whole stack down at the compound. And does it have, — see these have an RME number on it here, that AEC library number.
Q. Okay, I think I just have one which is 179. This is that monthly report from June '53.

A. June of '53. Yeah.
Q. And again on page 141 there's a map of the Colorado Plateau listing the number of holes drilled?
A. Yeah. 141. And this is the map again of all the different, all the different areas USGS was studying. And if you look down on the area B, that is the area they, they had the title from mineral entries so they could do geology down here in the northwest Carrizos.
Q. Okay.
A. And that's the Rattlesnake Mine, Martin, those two little circles. And the circle is the Ourida Mine.
Q. So by 1953 here, there's quite a lot of activity. This report's —
A. Yeah.
Q. — got a lot more detail than the ones?
A. Oh, yeah, every year from the beginning it increased more and more. The AEC spent money on drilling and exploration, and all that. And the industry was starting to pick up. The boom, in my opinion, the boom really, out on the Colorado Plateau really didn't start until — through a broken

petroleum geologist named Charley Steen made a lucky, lucky discovery on in Lisbon Valley. He's a millionaire — here's a guy that became a millionaire overnight, and that brought hundreds of people here to prospect. It wasn't all the AEC bonuses that, in my opinion, it was Charley Steen that really did more to create a uranium boom than the AEC did. That's my opinion.
Q. Let's take a look at number 180?
A. 1 what?
Q. 180, the exhibit. Yeah, 180 for you.
A. Another one, RME. Yeah.
Q. Are you familiar with this report?
A. Oh, yeah. In fact, I may even have a copy of that. I don't know if I do or not. That's about the airborne survey of the Cameron. They flew and found a lot of anomalies.
Q. Can I ask, you mentioned a minute gentleman who made a discovery and brought a lot of attention to the uranium program, Mr. Steen?
A. Charley Steen.
Q. Charley Steen. Was he one of the hired by the AEC?
A. No, no, he was a white guy who was petroleum prospector — he was a petroleum geologist and

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he was down and out and broke and he decided to drill in Lisbon Valley. No, he had nothing to do with it. But, the fact the newspaper caught up with him, here's a down and out guy, down to his last — borrowed money from his relatives to drill. He just lucked into a major discovery in Lisbon Valley became a millionaire over, particularly after. And that — if he can do it I can do it, so that's brought all the people out here.

Q. Now, did he make that money at the ore buying station?

A. No, he built his mill over in Moab. But he did sell some ore to the government ore station in Moab before his mill was done.

Q. All right. Let's look at 181.

A. Oh, yeah, this is, this is a certification report.

Q. Okay. And I can —

A. Who wrote it?

Q. I can —

A. Gil Ritter wrote it, okay.

Q. I can represent to you that this came from Broomfield where the practice is —

A. Yeah, yeah, they got — I think about 1,250 property certified for bonus payment.

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means that they collected $35,000 on the 10,000 pounds. That meant three fifty a pound. That doubling the price of, the basic price, the price guaranteed by 6.5. And so it was another incentive for people to go out and find new discoveries. This couldn't be old discoveries, it's got to be new discoveries.

Q. And this is —

A. It was very successful.

Q. This is a photograph copy of this, but I'm going ask, does it look like a complete and complete report to you? Does this look like —

A. Oh, yeah, this is, this is the certification report for the —

Q. Okay.

A. No, this is, this is an examining engineer's report to his boss. And the Atlantic Metals or Arrowhead — who made it — Arrowhead this request, would get a letter saying you've been certified, and so forth and so on. So this is the examining engineer's report. By Gil Ritter.

Q. So if you look on page 202.

A. Uh-huh

Q. In the section Production Risks.

A. Yeah. And they always made — they —

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always wanted them to make comment, you know, is going to produce some more? Is this just like the pod of ore they found, or something, and —

Q. In here they're discussing these we talked about?

A. Yeah.

Q. And that last paragraph — yeah, s

A. Pick and shovel.

Q. Yeah, the second paragraph the — the i sections says remnants of thirteen fossil trees. And the last paragraph, as you say, suggests a simple pick and shovel job —

A. Yeah.

Q. — directly into trucks. So how that look if you were observing in the field was it simple pick and shovel job?

A. Yeah.

Q. What activities would you see?

A. You'd, you'd see a Navajo with a wheelbarrow and a pick and he's picking, he's picking up rocks out of this little cliff. So these early discoveries weren't, weren't — they were topography. Like Huskon 1 in on a hill. There it was never a pit, or anything, it was really a huge rim stripping area. And I got a pic. I think

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in some of that stuff of mine that you copied, Navajo and a pick and shovel and a dog where he wheeling the pick — the wheelbarrow full of ore to dump it in the ore pile. So these were just very small operations to begin with. But when Atlantic took over, they became very big, big operations

Q. Now, when it — when there are trees and picks and shovels are being used to pick this directly in trucks, can you — it is the hand that they could identify a log or part of a tree and not just just pick it up and throw it in a wheelbarrow

A. Yeah.

Q. — and into a truck?

A. Or break it up. These logs weren't petrified, they were pretty kind of rotted because of all the carbon in them, the carbonation that precipitated the uranium. In the early days, before I got there, they said it was, Arrowhead was a very meager operation compared to what it got later.

Q. Now, would these activities result in generation of any waste rock?

A. Oh, yeah. Yeah, when — they have their own eyeballs, probably didn't even have Geigers, but just used their eyeball to look for a yellow. And

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they'd dig that out, and so there might have been some real low grade stuff that wasn't too high yield low they'd throw away, so. There would be waste piles around where they're digging with a pick and shovel.

Q. Okay. Let's look at 182. Are you familiar with this document?

A. Yeah, Mr. Winston was, was the AEC for many years. He hired me for the AEC in 195

Q. If you look in that first paragraph is a sentence that reads — I'd like you to read it. It reads, we who are close to the day-to-day problems that arise in coordinating the various elements of finding, mining and processing that together contribute production should frequently give thought to the complete picture in an objective manner. This perspective should enable us to be guided by the aspects of the complete picture as we strive to fit them together. What is he speaking to here?

A. I don't know. He means they're trying to coordinate the industry to get, get the, light of uranium out of the ground and into yellowcake, I think.

Q. Okay.

A. And he goes on to — what's at the 53, yeah.

Q. Yeah, all right. Page 204.

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A. Uh-huh.

Q. If you look at the fifth paragraph, the next sphere of activity. See how there's mention here of AEC operating property in the Slick Rock district?

A. Oh, 202, huh?

Q. No, 204.

A. Oh, 2004. Okay. I'm on — third paragraph, one, two three.

Q. Yeah. It's the next sphere of activity.

A. Uh-huh. Boy, I did not know that — this says AEC operated a property in the Slick Rock district for seven months in an effort to evaluate actual mining costs.

Q. If this occurred, it sounds like part of an effort to —

A. Yeah, mining costs — okay.

Q. — to determine competitive prices.

A. Yeah. Right.

Q. Okay.

A. I don't know anything about that operation.

Q. I have questions now on page 206 in the last paragraph of the 206.

A. Last paragraph of 206?

Q. Yeah.

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A. Uh-huh.

Q. And if I understand the discussion, it has to do with minimum qualifications of lease applicants.

A. Uh-huh.

Q. And that they have some mining experience. Do you have any familiarity with this concept —

A. No.

Q. — that people who sought leases —

A. Well, that would have been in the leasing process, you know, because they had — the leases done by the whole Mining Division down there at a site, and they set their own criteria then for leases.

Q. Who would have set it?

A. The Mining Division, AEC Mining Division.

Q. Okay. And —

A. Well, maybe this came from DOE, maybe, but.

Q. And why would they have set requirements for mining experience?

ROBERT N. FOSTER: Foundation.

A. They were mining uranium and they — I don't know, but they probably want 21 years old with mining experience because there were a lot of, in the early days there were a lot of young kids mining, young

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blown up because they didn't know how handle dynamite and things like that. That might have been a safety provision to have three years mining experience, five years general mining. They just wanted experienced people on the lease blocks so it would be safer, I think.

Q. On page 207, the next page.

A. Uh-huh.

Q. In that second paragraph, it's a little hard to read, so I'll —

A. Yeah.

Q. — read it out loud. When an applicant has been selected to mine a particular ore body he is invited to visit our offices and the details of the problem are discussed. If this particular applicant elects to sign the lease he is given custody of the information we have on the deposit such as drill logs, geologic favorability maps, et cetera. Are you familiar with that process?

A. Oh, yeah.

Q. So people would come to the office —

A. Yeah, because this, a lot of mining area and they'll have a, they had a packet, a file folder on each, on each lease with all the map, drill logs, and all that, for the people to come and to get a good idea what it, what was there.

Q. And this would help them in deciding
A. Whether to do it or not. Whether it was a good economic venture or not. They decline, the best qualified applicant will be offered the lease.
Q. And would the applicants for the have to pay for this information?
A. No. No. Huh-uh. What's the date of this, anyway?
Q. September 23, 1953.
A. Oh, '53, that would be in the leasing program, yeah.
Q. Okay, let's look at page 183 of my Exhibit 183.
A. Oh, yeah, Mr. Crew and Mr. Hurley.
Q. This is — Mr. Crew, I think you mentioned, is still, still with us.
A. Yeah, he celebrated his 94th birthday about a week ago.
Q. Are you familiar with this report?
A. Yeah, I've seen it.
Q. I have a quick question for you on page 213. There's discussion of the purpose of mission drilling. There are three purposes. One, to find uranium of ore-grade. Two, to find reserves for proposed mills. And, three, to develop reserves

areas where private companies would not normally the attempt. And that's the one that I'm asking about. What do you understand about that purpose of the commission drilling?
A. This would be in some of that wildcat drilling they would have done where industry, of their own evaluation not thought much of an area, and we did do drilling in some of these kinds of areas, it was, where it was really wildcatting, and that's where they make, so they — they were hoping to areas, find uranium in, in new areas that bring industry to that, because industry was not there because they didn't think it was that favorable.
Q. So it was sort of to prime the pump, so to speak?
A. Yeah, right. And that was what, a lot of the drilling we did, we never really, except we learned about the areas that it was favorable.
Q. Another question, in the paragraph starts another purpose is to find reserves.
A. Uh-huh.
Q. The last sentence there, the last sentences say — well, let me just read the on the other hand, private exploration is not

rapid or extensive to solve the question, would undertake exploration. At no time has part of Commission drilling been directed So if I understand this right, to, to speed up development of reserves and building of mills, Commission was doing drilling?
A. Yeah, they would apparently go in and, and do closer space drilling and more closer space drilling more than wide space exploration drilling to try to develop reserves.
Q. All right, let's move on to 184. Are you familiar with this document? Does this look familiar? Does this report look familiar?
A. I — not — I'm really not that familiar with it. I know who Mr. Meek was. He was in Grand Junction very briefly, and then he went to Utah. But this was written in '53, yeah. I don't think I've ever looked at this that closely.
Q. From the cover page and TM, does it look like a report authored by the AEC?
A. Yeah. TM means technical memorandum. These were sort of all internal reports that really got released to the public.
Q. And so my question is: On page 2, there is discussion of three phases of drilling;

investigative, exploration and development. I think I heard you talk quite a bit about investigative exploration drilling. What is your understanding of the role of development drilling in the AEC program?
A. You mean page 3 here?
Q. Yes.
A. It's really, like he says, drilling in closer space. Like if, if we're out here and we doing some drilling on hundred-foot centers, or hundred and fifty-foot centers, 200-foot centers, one of those holes hit a good grade, penetrated a thickness and grade of uranium, we'd come in drill on maybe 50-foot centers or rabbit to try to do out some reserves. And I think, I think — opinion, development drilling barely — the spacing of drill holes rather than anything else. The drilling 25 to hundred-foot centers.
Q. Am I right, this sounds like a situation where a smaller mining company, as is described, isn't sure about the value of the expense of t additional drilling or mining, and as a to encourage —
A. Yeah.
Q. — further mining, AEC drills some holes?

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A. Yeah, that's right. They'd then, uh-huh.
Q. And so then AEC would give this sort information —
A. Oh, sure.
Q. — to the operator?
A. Uh-huh.
Q. And they wouldn't charge for it?
A. No, no, no, no. The pressure was uranium ore to mills as fast as it could.
Q. Okay. Let's look at 185.
A. Another one of Mr. Wimpfen's speeches.
Q. And I have a question on page 239.
A. 39. Okay.
Q. And I'd like for you to react to a sentence in that paragraph that reads, as I have stated, the Commission program is one of control to the extent required by the Atomic Energy Act, but rather, one of guidance, encouragement and assistance to private capital which is performing the greater part of the task. Do you have an understanding of what control is required by the Atomic Energy Act?
A. No. That would be licensing, all that, and security, and all that kind of stuff. But don't —

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Q. Okay.
A. I really don't know much about the Atomic Energy Act.
Q. Let's look at 186.
A. Oh, Phil Simmons, yeah.
Q. Did you know Phil Simmons?
A. Yeah, he's a mining engineer with the Mining Division here. Oh, it says Mining Division. See, I was in the Exploration Division, and when we stopped exploration, the Mining Division and the Exploration Division were merged into Production Evaluation Division. And that's what we did when exploration stopped, was evaluate what was going on in the industry.
Q. Okay. Let's — I have a question on page 244. And let's see, the third, fourth, fifth paragraphs, if you can read those for me, or the gist of short.
A. All right.
Q. They appear to discuss visits we went through a minute ago where an applicant would come to meet in Grand Junction with AEC to learn about —
A. Yeah.
Q. — a particular prospect?
A. Costs, and all that. Cost to mill,

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to mine cost, and how you did get to build, and all kinds of things. They had a, they had a public relations, a couple public relations people, but most of the original talking. And when it got to technical, they'd talk to one, some of the mining engineers, or geologists, about how do you find it.
Q. And so when they mention here new entrants into the field can save dollars and time by observing current practices. Are those things being described here things that are suggested by AEC, or in practice at these —
A. Oh, I think they were — some of these people had never — just came out here to make a lot of money, and, because they heard about Chalkley S but — and they had no idea what it was going to cost to do this, or what it cost, or you just can't dynamite without some training, and all that. And they described geology, trees, logs and rolling, talk about how ore occurs, and showing pictures of ore. little government booklet the government put out, they had all these colored pictures of different kinds of ores, and everything. And the people had no idea what uranium looked like.
Q. Did the people with the AEC in Grand Junction spend a lot of time holding hands and

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teaching —
A. They had a group that did this. Like I said, I think they had a couple public relations people, and then they would rely on, on some of staff to assist them, you know, if somebody really wanted to — and they kept track of how many came a month they had. I think during the boom they were a bunch come to the office to talk about uranium.
Q. Let's look at Exhibit 187.
A. Well, who's this? Cook. Never heard of Mr. Cook. It wasn't in that meeting. That was a Uranium Ore Producers Association. That was industry political group.
Q. I think the only the question I have on this is about page 249. And there is some discussion of the value of completed facilities and costs of the Atomic Energy Program to date. Does it surprise you that they're in the billions of dollars in 1953?
A. No, I know they kept track of that, all that dollar being invested in the mills.
Q. So the value of a completed facility plant in place, as of June 30, 1953 is about 4.5 billion dollars.
A. Billion, yeah.
Q. That seems like a big number for

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A. I don't know. I don't know how they acquired that, but I know they used to put tables like this all the time.

Q. And then the next line says, by the end of the physical year '57 that number would almost double to 8.5 billion dollars.

A. Almost going to double.

Q. So this, I guess, does this show how the incentive program was working?

A. Yeah, that's what apparently they're trying to show.

Q. All right. Let's look at 188.

A. Oh, Mr. Long, yeah.

Q. Does this look familiar, this memo?

A. Uh-huh. Who wrote this? Never have seen Uh-huh.

Q. So you probably haven't seen this before?

A. Yeah.

Q. The question I have for you about Huskon 5 and these trees that were mined, I don't know if you're going to have anything more to say. On the second page here, 258, that first paragraph, there's a discussion that Huskon 5 production was light from scattered near-surface logs. And Huskon 9 was a combination of logs and —

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A. And thins.

Q. — thin lenses. And I was trying to ask earlier, was this a case of just picking up logs that were lying on the surface, or what would be in this b

A. Yeah, it sounds like it was on 5.

Q. And I had ask you would it involve generation of waste rock, you thought perhaps?

A. No, it probably was some weakly mineralized left behind, because they were looking for high grade logs.

Q. So what they were trying to do was pick pieces up?

A. Pick these up and — uh-huh.

Q. Do you recall whether they would have been dumping anything on the ground as part of this, or was it all picking up?

A. Probably — if it didn't look uranic yellow, they were probably left on the ground in place.

Q. Let's look at 189.

A. Oh, Shirley.

Q. I don't imagine you're familiar with this.

A. No, I'm — no I've never — is this is an internal memo.

Q. And the discussion here is about

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possibly mill sites in the Tuba City area.

A. Uh-huh.

Q. Do you have any understanding of the role AEC played in selecting an ultimate mill site?

A. No. Probably needed water. Needed water for — they knew a mill would need water, and that was always a consideration on mill sites.

Q. Okay. Let's move on to 190.

A. Well, there's a Navajo Mining Firm, the RAMCO properties, I'll bet. Yeah, RAMCO 2

Q. Okay. My question —

A. Because the RAMCOS used the same for all the other mines used the Navajo permit, saw Webster here, well, I knew that had to be a RA

Q. My question is on page 263.

A. 263. All right. Stuck together. Okay. 263.

Q. And paragraph 1b. So if I understand this right, this is the assignee, the person in the lease or the permit.

A. This is, this is who they assign the mining permit to.

Q. Right. Is agreeing to commence mining operations and produce and sell ore from the property within six months from the date of approval of

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assignment. And then if you look at the page of 264, it looks like it's saying the assignment is void if the person receiving the assignment of permit fails to meet this requirement that produce and sell within six month. Are you familiar with this —

A. No.

Q. — provision at all? Was there, there a rule or encouragement from AEC or BIA to get up and running and be production within six month?

A. Well, they didn't want, they didn't people just to get a mining permit and just hold it and, and maybe promote it, or something like that. They — no, AEC had nothing to do with this. Well, probably BIA put this in the mining permits.

CHRISTOPHER J. NEUMANN: Let's take a break to change the tape, and then we'll try to rush through a few more documents.

JOHN DENNIS DUNN: This time approximately 4:24, and this is the end of tape 6 in the deposition of William Chenoweth. We're off the record to change tapes.

(A recess was taken from 4:22 Until 4:28 p.m.)

JOHN DENNIS DUNN: We're on

1 report. This is the beginning of tape number 1 of the
2 deposition of Mr. William Chenoweth. This is the time
3 approximately 3:28. Yeah, excuse me, we just u
4 4:28. Excuse me. Thank you.
5 Q. Bill, I appreciate your stamina, we're in
6 the home stretch.
7 A. Oh, good.
8 Q. I'd like you to look at Exhibit 19
9 A. 191. Okay. Oh, Mr. Wimpfen.
10 Q. Are you familiar with this memo?
11 A. No.
12 Q. — or that —
13 A. No, this was all done in the Mining
14 Division about leasing programs.
15 Q. Okay. You're generally aware that the
16 Mining Regulations came out here at some point?
17 A. Yeah.
18 Q. — in 1955, it looks like this is one of
19 this.
20 A. Yeah.
21 Q. And I just have a question on 273 page
22 A. Uh-huh.
23 Q. Can you look at that first paragraph under
24 Work Requirements, and the last sentence reads, "At a
25 maximum time to start production, and a minimu

1 quarterly rate of production shall be specified." Do you
2 recall that became a requirement over time?
3 A. No, I have no idea, because that's i—
4 the leasing group down there took care of this all t
5 Q. Let's look at Exhibit 192.
6 A. Oh, Mr. Crabtree. Uh-huh.
7 Q. Does this look familiar?
8 A. Nope. This had to do with the pilot plant,
9 National Lead, I assume it was with the pilot plant, p
10 National Lead was a contractor down there at the
11 pilot plant as well as the — oh, this is pilot
12 plant, because they're talking about Cameron o
13 Because that was a brand new area. The Cameron
14 was different than any ore that had ever been
15 and I'm sure they sent a big sample up here to AEC
16 do research on what kind of a mill would be, be
17 best built to process the Cameron ores. And all
18 analytical work that National Lead did on the Cameron
19 ore, it looks like.
20 Q. Is it your understanding this sort of
21 information as part of the incentive program would be
22 shared with the mill contractor?
23 A. Oh, you bet, that was — yeah, sent
24 the ore up here. Oh, there is Arrowhead Well,
25 anyway, I'm sure, because they — yeah, there

1 were reports done like this on every new deposit
2 over the United States, especially when there was
3 going to — when the company was deciding whether they
4 going to build a mill. Or had reserves enough to build
5 a mill.
6 Q. And I think you mentioned, isn't this part
7 of the incentive program —
8 A. Yeah.
9 Q. — that AEC would not have charged
10 A. Oh, no, this was done by the AEC to
11 get more mills built and more uranium ime— mo
12 concentrate in.
13 Q. All right. Let's look at Exhibit 193.
14 A. 193. Uh-huh. Ho, ho, ho, yeah.
15 Q. This is familiar?
16 A. Yeah, this is out of the chemist out
17 of the big manual we had about how to code stu
18 Everything, everything had to be coded so that we
19 put in the computer so you could sort them. And these
20 are, these are the codes on this — the discovery
21 codes. And there's a whole, big book of these,
22 big book about that thick of codes for mineral codes
23 for state and county, codes for ore deliveries, p Any
24 way.
25 Q. Well, so the —

1 A. This is one page out of — the Appendix
2 C, page 4, IBM codes.
3 Q. So the first four codes are exploration
4 activities?
5 A. Yeah.
6 Q. Including drilling, prospecting —
7 A. Yeah.
8 Q. — airborne and then rim stripping
9 A. Because they were trying to keep in
10 the early days how these discoveries were made—
11 Q. Have you ever seen a report that
12 summarizes, you know, for instance, what has been
13 kept on government rim stripping?
14 A. No, I've never seen — I know they
15 used to put an annual, a yearly report that, early new
16 discoveries had a code bar like this. But I don't know
17 where they are now.
18 Q. So this data base, does it exist?
19 A. Yeah, this was, this was in one of the data
20 bases they developed. But not any of the data I
21 ever saw. That I, I kept. It was more annual
22 basis where they do an annual, a book of things,
23 and then they'd flag new mines, and they'd have a
24 code by it.
25 Q. But this is an AEC data base, made

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this?
A. Yeah, AEC. It would be an annual document on what happened in a calendar — fiscal year. And new discoveries would have to be in them, as I remember seeing.
Q. How did you remember seeing it, was it in some kind of annual report?
A. Well, we, we — it was probably kept around to show people or to edit it, or something.
Q. An annual report?
A. Yeah, it's an annual, internal annual report.
Q. Do you think that annual report might be over at Mesa State?
A. No, huh-uh.
Q. Still at Grand Junction, if it's extant?
A. No, I think it probably got shredded. I got — I don't know where they are.
Q. All right, let's look at 194.
A. Oh, that — this is a typical assignment.
Q. Okay.
A. This is —
Q. A BIA assignment of a —
A. No, this is — probably developed by the BIA, but this is the document showing that it per is

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assigning mining rights to our company. Since this would be Arrowhead. No wait. I can't read it. No, I thought it as Morehouse's signature. Isn't it i
Q. This looks like for RAMCO 23.
A. Yeah, right, RAMCO 23.
Q. Okay. Let's look at 195.
A. Okay, that's a recurring visit that the certified properties had to be visited almost every other month to see what was going on, and the amount, amount of ore produced they claimed a bonus on commensurate with mine, how big the mine was, if there was any fraud. And this is — and written many of these reports. This is Huskon 12. Mauly Hansen visited this — I don't see the date, yeah, '57, and he reported what he saw.
Q. The question I have is, if you in the middle there's a sentence that reads, and four-i grizzly and been constructed from lumber and old steel for bars to either upgrade the ore by using the large pieces of waste, or to size the ore for shipping. Did you ever seen anything like that?
A. No. There is in — huh-uh.
Q. That wasn't a common activity at mine site?
A. No, huh-uh. Yeah, Huskon 12, w. The

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mine, it's just north of, north of, north of the bridge over the little Colorado River there on the side of the highway. It's just is a small pit.
Q. So what he could be saying here is smaller pieces the more you could fit in, is that truc
A. Yeah, that was probably it, uh-huh
Q. Okay.
A. No, I —
Q. And this type of activity, using a grizzly to crush —
A. No, I never saw a grizzly used in a mine.
Q. There was one at the mill, so I am in
A. Oh, yeah, sure, the mill. And in mines, the mines, in the big underground they'd have a grizzly there and, and rocks would go down the ore pass, the rocks had to be a small size. So if a rock got stuck in the grizzly, a miner would come with a sledge hammer and break it up and put it in the grizzly in the underground mines. But I have never of a grizzly being used on an open pit mine like this.
Q. And this type of activity, using crusher —
A. Yeah.
Q. — falls within the definition of a mill.

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about earlier —
A. Yeah.
Q. — of processing, right?
A. He must have been, he must have been using a sledge hammer. Does it say? It doesn't. What he was hitting the rocks with.
Q. Well, okay. Let's move on to 196.
A. Ha, ha. Yeah, this is, this is I wh wrote on Huskon 6 —
Q. 8.
A. 8, is that 8? Okay, Huskon 8.
Q. It's a recurring visit report?
A. Yeah.
Q. Okay. And the question I have is, whether you remember the details of the pick and shove
A. Well, they probably, they probably, this is — Domino Mining Company was just a small mining company, very unfunded, and they probably, they had dug up some, what they thought was ore, using their eyeballs they were sorting out the waste from the ore so it could be an economic shipment. It was a very labor-intensive operation. Low cost, labor-intensive.
Q. Okay. Let's look at 197.
A. A pick and — oh, and a fossil, yeah.

Q. All right, Exhibit 197.
A. Oh, ho, ho. Uh-huh. Lucius Pitkin, was a brand new, brand new ore buying station later period of times when I was running the lab, and apparently Mr. Gains was the manager of the Pitkin, local manager of the Lucius Pitkin, and apparently he has — they went up there and into the sampling facilities that — from the El Paso had taken over the ore buying station, and they surveying what was going on there.
Q. This looks like an official letter report by the —
A. Yeah, by contract, by the AEC to the AEC.
Q. And could you take a look at page 303, the second paragraph.
A. Mr. Marsing.
Q. Right. So this reads, in the name of Mr. Marsing —
A. Mr. Tarne, he was a, he was a Pitkin employee.
Q. — demonstrated, Mr. Tarne demonstrated the proper method of coning and ringing a sample a suggested the sample should be coned and ringed twice before rejecting opposite quarters. Mr. Marsing

immediately gave orders to the sample bucker follow this method on all future samples.
A. I have no idea what they're talking about. Marsing, no doubt, was an El Paso employee.
Q. Right. Was it, was it common, in your experience, to have Lucius Pitkin, or AEC, give suggestions like this?
A. Oh, yeah. In fact, the Ore Procurement Division, or whatever it was called then, made monthly inspection in the mills just to see what contractors were doing. And I know Kerr-McGee to the AE — went to DOE and tried to find reports, and they didn't exist any more, apparently they wanted a, they wanted a — because of a problem they wanted to see these old mine — mill inspection reports at the Shiprock Mill, and they didn't, I know.
Q. All right. So this was from 1960. Now, let's look at Exhibit 198.
A. This is another report here, yeah.
Q. From Lucius Pitken the AEC contract. It's dated September 12, 1963. And so my question about the second page, page 303. And the four paragraph down. The sample bucker follows proper method for coning and ringing the original sample.

In our previous report we stated that Mr. Tarne demonstrated the proper method for coning and ringing a sample and that method is now being followed at the Atoka City plant?
A. I have no idea about coning and ringing.
Q. It's kind of —
A. It's something about preparing a sample for an assay, I think.
Q. But the, I guess the bigger question I have is, it sounds like you're saying if AEC was aware of a better way to do something, to share?
A. Yeah, they always share.
Q. Okay. And it was common for the suggestions to be —
A. Because, because the mill had an contract, that was probably in the mill contract they could expect — visit the mill periodically, something like that.
Q. So these visits were about months apart?
A. Well, apparently that. But I think I thought they said they visited the mill about a month.
Q. Okay. And it was — so you say it common for Lucius Pitkin or AEC to —

A. No, mostly — I know what I mean, is the AEC metallurgist, they had a group named Frank McGinley that maybe had four or five metallurgists, and they visited all the mills in western United States and Texas about once a month.
Q. Okay. To give suggestions like that.
A. Yeah, to give suggestions, or think that, or just say, well —
Q. Let's look at 199. Does this look familiar?
A. Yes, I have — I think I still have a copy of this. I think. This was something that AEC put to the public to tell them what you were doing there. Oh, yeah, uh-huh. Page 16.
Q. So I think my question —
A. Oh, yeah, year, here's —
Q. — on page 310 there's a description of the Resource Investigation Division, and the Mining Division.
A. 310.
Q. Does this sound familiar?
A. Oh, yeah. Yeah. I was in the Ore Appraisal Branch, for a while, and then in the Geologic Studies Branch for a while.
Q. All right.

A. I see here on 313 it tells about L. Pitkin working with a milling company.

Q. And then on, also on 313 there's a list of key personnel, are these — I guess these are people you would have worked with?

A. Oh, yeah. Yeah I worked with Harvey there in the Resource Investigation Division.

Q. And there's a little organization chart on page 314?

A. Oh, yeah.

Q. It's kind of hard to read, but as of 1968 this is what Grand Junction looked like.

A. Uh-huh.

Q. All right. Let's go on to EXHIBIT.

A. Oh, ho, where is this from?

Q. Well, that's my question for you.

A. Oh, Mark Ferguson. He was an assistant director of the National Archive when they were in the Federal Center in Denver. Oh, I see. He was asking my advice on retention value of some records. And I, I told him, as a, I can only give you an opinion as a former employee, you ought to, you ought to talk to somebody in the — that's still with the agency.

This was written in '96. Oh, this is not too long ago. And I don't know what the result of this

were.

I don't know, what's all this stuff? This must — I don't know whose handwriting is it isn't mine, but it talks about the AEC data going to the USGS. The drill data going to USGS.

Q. All right.

A. And Warren Finch of the USGS knows about this stuff, it says, but he's retired. So I really don't know the results of, of this inquiry. I probably told him to go to talk to some of the AEC. But — and, and all this handwritten stuff on 318, on 318, I don't know who did that.

Q. All right. Here's where it talks about a video on the bottom of 318. Public affairs, video 1993, 50th.

A. Where do you see that.

Q. The last thing written on page 318.

A. Oh, yeah. Public affairs. Mr. Stump here says of Al, Bill and McGinly, history of the Grand Junction office. That's a document.

Q. What about below that, the collection of Manhattan Project, mine maps and reports, 300 AEC photos?

A. Where is this at?

Q. This the second to the last paragraph,

collection of Manhattan Project. Page 318.

A. Okay. Oh, yeah.

Q. What the photos, the 300 photos are you talking about?

A. The 300 photos are photos of mines open — and AEC field camps, and all that stuff. It really has nothing to do — it says AEC photos. They had them in the file done there, and they were going to send them to the National Archives, and they didn't send them unless they had captions. And I think the contractor was then Bendix, or somebody, went back to write captions for all these photos that were in the National Archives.

Q. Where would we find them in archives?

A. In Broomfield.

Q. Broomfield, okay.

A. There's a record group, AEC photo historic mine photos, or something and, and it's over there.

Q. Are they the little slides?

A. There are slides, there are slides, black and whites, there are colored black and white, and the colored photos. There's all variations, because at some time the AEC hired a professional photographer around and take pictures of open pits and flumes,

and all this. And they're in there. Wilbur, Will Dare's photos he gave us, they're, they're in also there. It's a big collection. And a — about the Manhattan Project, mine maps and reports. Where a given — one administrator down there got jealous, he says, oh, let's just keep them here in Junction, let's give them to the museum. And so they gave to the Museum of Western Colorado, and then the Nat Archives says those are federal documents, ought to give them to us first. It was a big hassle, but stayed in the museum down here. As long as, as guaranteed to certain archival procedures. Somebody must have been talking to me on the phone and all this down.

Q. Yeah.

A. I don't know who it was.

Q. I think this was in Broomfield and in files.

A. Oh, my goodness.

Q. Okay. Let's look at 201.

A. I really don't know — unless Ferguson was talking to me on the phone and he was going all this down. 201.

Q. 201, it's the Organizational Chart of the AEC in November 18, 1960.

A. Yeah. This, this goes clear to the Commission in DC. And I'm trying to see where here. Here we are. Division of Raw Materials in Grand Junction Operations Office, Allan Jones, manager.

Q. AEC was a pretty big organization in 1960.

A. Oh, yeah.

Q. Do you have any sense how many people it might have been then?

A. Huh-uh.

Q. Hundreds, though?

A. Oh, I'm sure, because I imagine 1960 the Grand Junction office here had at least 20.

Q. So I recall seeing Mr. Hollins, who's at the top center box under the Commission.

A. Yeah.

Q. Deputy General Manager, did you think?

A. No. The only person up here I knew would be Jesse — that would be down here, Jesse.

Q. Johnson.

A. — Johnson, because he did stop in a bit.

Q. So he was based in Washington DC?

A. Yeah, he was, he was in the Div of Raw Materials, right over here on the left-hand side here.

Q. And then below, below that box is the Grand Junction Operations?

A. Yeah.

Q. Allan Jones?

A. Uh-huh.

Q. Was Allan in Washington, or was he —

A. No, he was here. He was there for many years here.

Q. So the Jesse Johnson, that Jesse guy, were all those people in Washington DC?

A. Uh-huh. I imagine, I, I, I don't know.

Q. So on the far left there's said Div of Production. Were you familiar with what division was?

A. No, that would be the big plants, Oak Ridge, Hanford and Savanah River.

Q. What's your understanding of what AEC did at those plants?

A. Oh, they, they were — they made rods, I think. I don't know what they did. Oak Ridge, of course, did a lot.

Q. Did you interact with any of the other divisions?

A. No. I didn't. I'm sure, I'm Raw

Materials must of — the Licensing and Regulation Division, I think that's where they got the person over here.

Q. And then once the yellow cake left Grand Junction, what division did it go to next?

A. Well, it went to —

Q. I suppose in the middle the Division of Military Application?

A. We also interacted with the Office of Technical Information when we used to — use they to publish some of our documents. And — well, I don't know, like this, like Weldon Springs and Fernald where out stuff went, our yellow cake went, I don't know which division it's under. It might have been under production. I don't know.

Q. Okay. And did, did you have any understanding of whether — what role these same people —

A. No.

Q. — in Washington DC were playing?

A. No. They had all the other divisions, you know, and we were just the Raw Materials Division and didn't know about —

Q. Okay. Last one, 202.

A. Ho, ho, ho.

Q. I don't know if you will be familiar with this, but I thought I would give it a shot.

A. I've, I've seen some of this before. Let's see.

Q. This looks like an org chart for the Manhattan Project.

A. Uh-huh. What year is this?

Q. It appears to be 1946.

A. The Colorado area office ought to be here someplace. Milwaukee. Oh, here we go. Madison Square office, yeah. Colorado area engineer. Then Leahy was a major. So this had to be about '46. Because he got promoted just, just before they moved him out of here, he was telling me.

Q. So Madison Square was the group looking at identifying resources?

A. Yeah. Well, I never heard of the other area offices, but, but — by I know Leahy reported to somebody in Omaha, he said, and I don't know — Madison — I don't know any of — really answer this, but it was a huge organization when you chart like this.

Q. Do you have a sense when Manhattan transistioned to AEC, was there any continuity structure, or was it all redone?

A. It was all redone, yeah, like when—they first, when they closed the Colorado Engineers office, I think they sent him to Oak Ridge, which they formed the office down here, he came back the manager of the Colorado Raw Materials Office, and you used to see a lot of the early correspondence, you know, Bill Leahy, manager of CRMO.

CHRISTOPHER J. NEUMANN: That's all I have for today. Why don't we take a break and we can talk about some of this.

JOHN DENNIS DUNN: This is time approximately 5 o'clock, and we're off the record.

(A recess was taken from 5:00 p.m. until 5:04 p.m.)

JOHN DENNIS DUNN: This is time approximately 5:04. This is the end of tape 7 in the deposition of Mr. William Chenoweth, and we're going off the record to change tapes.

SIGNATURE OF WITNESS

STATE OF _____)
)
COUNTY OF _____)

I, WILLIAM CHENOWETH, being duly first sworn, do hereby certify that I have read the foregoing deposition, and it is a true and correct record of my testimony, except as follows:

_____
WILLIAM CHENOWETH

Subscribed and sworn to before me and in my presence this _____ day of _____, 2014.
My commission expires: _____.

_____
Notary Public

REPORTER'S CERTIFICATE

I, Keith Rusk, do hereby certify that previous to the commencement of the examination of the said WILLIAM CHENOWETH, he was duly sworn by me to testify to the truth in relation to the matters in controversy between the said parties so far as he should be interrogated concerning the same; that said deposition was taken in shorthand by me at the time and place aforesaid and was reduced to typewriting under my supervision; that the foregoing is a transcript of the questions asked, the testimony given and the proceeding had.

My commission expires 3/3/17.

_____
Keith W. Rusk
Court Reporter
Notary Public

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